ORIGINAL ARTICLE

Assessment of Patient Satisfaction with the Preoperative Anaesthetic Evaluation

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ABSTRAK

Penilaian anestetik pra-operasi adalah penting semasa penjagaan perioperatif. Matlamat utama kajian ini adalah untuk menilai tahap kepuasan pesakit dan faktor-faktor yang mempengaruhi kepuasaan pesakit terhadap klinik pra-anestetik. Sejumlah 304 orang pesakit yang menghadiri klinik pra-anestetik telah terlibat dalam kajian ini. Kajian kepuasan selidik dwibahasa (Bahasa Inggeris dan Bahasa Melayu) dengan berjumlah 18 soalan menguji faktor-faktor bukan penyedia (kemudahan klinik, kesesuaian masa menunggu) dan faktor-faktor penyedia (perkhidmatan doktor, pegawai kaunter, jururawat dan kakitangan sokongan) telah dikaji. Kajian kepuasan selidik menggunakan format skala Likert lima mata skor sangat setuju/tidak setuju telah digunakan untuk menilai tahap kepuasan pesakit. Secara keseluruhan, peratusan kepuasan pesakit terhadap penilaian pra-anestetik dilaporkan sebagai 98.7% dengan skor purata untuk perkhidmatan doktor (4.49 ± 0.60), pegawai kaunter (4.48 ± 0.61), kakitangan sokongan (4.47 ± 0.62), kemudahan klinik dan kesesuaian masa menunggu (4.40 ± 0.62). Semua faktor-faktor yang dikaji menunjukkan hubungan yang signifikan (p<0.001) dengan kepuasan pesakit dan kesesuaian masa menunggu pesakit telah dibuktikan sebagai peramal bebas yang mempengaruhi tahap kepuasan pesakit. Majoriti pesakit adalah berpuas hati dengan penilaian pra-operasi di klink pra-anestetik dan kedua-dua faktor penyedia dan bukan penyedia menunjukkan impak yang penting mempengaruhi kepuasan pesakit.

Kata kunci: klinik pra-anestetik, kepuasaan pesakit, penjagaan perioperatif, penilaian, pra-operasi

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ABSTRACT

Preoperative anaesthetic evaluation is important in the perioperative care. The aim of the study was to evaluate the level of satisfaction and factors affecting patient satisfaction in the preanaesthetic clinic (PAC). A total of 304 patients who attended PAC for preoperative evaluation were recruited into this study. A bilanguage validated Patient Satisfaction Survey in English and Bahasa Malaysia with total questions of 18 examining non-provider factors (NPF) (facilities and appropriateness of waiting time) and provider factors (PF) (doctor, counter services, nurses and supporting staff) were utilized. The survey form was graded in a strongly agree/disagree five-point Likert scale format for patients' level of satisfaction. Overall satisfaction of preoperative evaluation was reported as 98.7% with mean scores from doctor (4.49 ± 0.60), counter service (4.48 ± 0.61), support staff (4.47 ± 0.62) and the NPF (4.40 ± 0.62), respectively. All factors were found to be significantly correlated with the overall patients' satisfaction ($p<0.001$) and waiting time shown to be the independent predictor affecting the level of satisfaction. Overall majority of the patients were satisfied with the preoperative evaluation provided at PAC and both non-provider and provider factors were shown to have a significant impact on patient satisfaction.

Keywords: evaluation, preanaesthetic clinic, patient satisfaction, perioperative care, pre-operation

INTRODUCTION

Patient satisfaction is defined as a subjective reaction to the context, process and result of the service experience one has received (Pascoe 1983). It is paramount and frequently used as an indicator for measuring the quality of care responsible for an equitable evaluation of the structure, process and outcome of health services (Barnett et al. 2013; Heidegger et al. 2013; Shah et al. 2015). Patient satisfaction is an integral part of service quality that leads to continuous improvement in anaesthetic service provision and it can be influenced by preoperative visit (Fung & Cohen 2001; David et al. 2004).

Many factors contribute to patient satisfaction, including accessibility and convenience of services, institutional structure, interpersonal relationships, the competence of health professionals and patient's own expectation (Myles et al. 2000).

Preoperative anaesthetic evaluation is as equally important as the actual delivery of anaesthesia during surgery. It requires an in-depth knowledge of the patient's general health status, nature of the surgery, anaesthetic technique tailored for the surgery, as well as competency in handling anaesthesia associated complications and the subsequent expectant management (Anaesthetic Clinic Protocols 2012). Also, it is instrumental in enhancing the

cost-effectiveness of the perioperative process (Pasternak et al. 2012; Olivier et al. 2016). Following the progress in the preoperative assessment clinics, this has brought to a great declination in the number of surgical cancellations, lab tests, and length of hospital stay as well as associated costs of consultations by introducing the systematically developed practice guidelines (Van Klei et al. 2002; Pasternak et al. 2012). In addition, it helps to allay anxiety, clarify any anaesthetic-related concerns and improves on the overall physical and psychological experience of a patient prior to surgery (Samuel et al. 2011; Soltner et al. 2011). However, evaluation of patient experience and satisfaction with such clinics has not been fully studied especially in our local settings despite these improvements having benefited the hospital systems. Most of the results available were evaluating patient satisfaction at the postoperative periods, which could be confounded by many factors including interaction with different health care providers as well as the outcomes of the surgery. Moreover, most of the feedbacks were obtained retrospectively via mail-back method or telephone interviews that were conducted from several days to weeks after the postoperative period and with a possibility of making the responses less precise (Fung & Cohen 2001).

A good preoperative assessment requires more than just a medically competent anaesthetic medical officer. Effective communication and concerted team approach are vital to ensure patient's safety and wellbeing throughout the hospital stay as well as after the patient has been discharged. We opted for evaluation of patient satisfaction in the preoperative setting rather than postoperative assessment as the latter more often reflect on the overall perspective based on many dimensions of care delivered as well as the outcome of the surgical procedure. The use of many recognised patient satisfaction tools mostly evaluate the aspects of patient experience by means of the support and care offered by medical staff, the respect and courtesy shown by medical staff, the quality of explanation given to patients as well as other general components immediately after interaction with health care providers in the setting of preoperative assessment (Edward et al. 2007).

The aim of this study was to determine the level of patient satisfaction with the preanaesthetic clinic (PAC) through a valid and reliable multidimensional questionnaire examining factors affecting satisfaction. These factors can be broadly categorised into provider and non-provider groups in the assessment of patient satisfaction. Non-provider assesses facilities and appropriateness of waiting time in general while for provider, they were further subdivided into doctor, counter services, nurses and supporting staff.

MATERIALS AND METHODS

This study was approved by the Research Committee of Department of Anaesthesiology and Intensive Care, Universiti Kebangsaan Malaysia Medical Centre (UKMMC) and

the Medical Research and Ethics Committee from UKMMC (FF-2018-448). Further approval was granted by Medical Research and Ethics Committee (MREC) under National Medical Research Register (NMRR), Ministry of Health Malaysia (MOH) (NMRR-16-2875-32568).

This was a cross-sectional prospective study to determine patient satisfaction with the preoperative anaesthetic evaluation that was conducted at the PAC in Hospital Kuala Lumpur (HKL) from December 2018 to January 2019. A sample size of 317 was calculated using the formula estimating the single proportion based on the prevalence of satisfaction from a previous study of 86.1% (Sharifa Ezat et al. 2010). The sample size met the precision requirements (α) of 0.05 and the confidence interval of 95%.

Adult patients aged 18 years and above who have been scheduled for elective surgeries on the first visit to PAC, able to understand either English or Bahasa Malaysia and agreeable to participate were included in the study. Explanation and written informed consent were obtained from patients recruited into the study. We explained to the patients that their name, personal data and information taken for use of the study would not be disclosed and would be remained confidential. There was no favouritism given by the healthcare providers to those participating in the study. An independent nurse was assigned to the study would collect the questionnaire after patients have completed answering the questionnaire. The collected questionnaire would be then submitted to the principal investigator for analysis. A self-administered Patient Satisfaction Survey questionnaire was used with permission granted from the Quality Division, Centre for Strategy, Quality and Business Development Kuala Lumpur Campus UKM. The content and wording of the questionnaire were validated beforehand in both languages, English and Bahasa Malaysia to accommodate the multiracial population.

The first section of the questionnaire was the demographics characteristics of the patients. The second section contained 17 questions to examine service quality and was further divided into non-provider and provider factors. Provider factors included services provided by the doctors, counter services and support staffs while non-provider factors were anaesthetic clinic facilities, waiting time and quality of service. Each question in the questionnaire, except the socio-demographic characteristic, was graded in a strongly agree/strongly disagree five-point Likert scale format. Question number 18 was used to assess patient's perception on overall satisfaction with the services provided at the PAC.

Data obtained from this investigation were analysed using IBM SPSS (Statistical Package for Social Sciences) version 25.0 (IBM Corp, Armonk, New York). A descriptive statistic of the socio-demographic characteristics was initially done to evaluate the distribution, normality and homogeneity of the data. Based on Shapiro-Wilk test, the normality distributed of data assumptions was

Table 1: Data on the sociodemographic, surgical subspecialty and waiting time. Values are expressed as frequency (%) and mean ± SD as appropriate (N=304).

Variables	Frequency (N)	Percentage (%)
Age (years)		
18-30	92	30.3
31-50	113	37.2
51-70	79	26.0
>71	20	6.6
Gender		
Male	125	41.1
Female	179	58.9
Ethnicity		
Malay	201	66.1
Chinese	44	14.5
Indian	42	13.8
Others	17	5.50
Marital status		
Married	209	68.8
Single	95	31.2
Education level		
No formal education	7	2.30
Primary education	30	9.90
Secondary education	151	49.7
Tertiary education	116	38.2
Occupation		
Government	42	13.8
Private	97	31.9
Self-employed	21	6.9
Unemployed	18	5.9
Others	126	41.4
Surgical subspecialty		
General surgery	95	31.3
Urology	41	13.5
Orthopaedic	42	13.8
ENT	25	8.20
Plastic	18	5.90
Dental	20	6.60
Neurosurgery	12	3.90
Opthalmology	14	4.60
Gynaecology	37	12.2
Waiting time	29.05 ± 15.96	

Table 2: Overall satisfaction level towards services given by PAC (N=304)

	Frequency (n)	Percentage (%)
Dissatisfied	4	1.3
Satisfied	300	98.7

met. Frequency and percentage were tabulated for distribution of categorical data in sociodemographic characteristic while continuous variables were reported as mean $\pm$ standard deviation (SD). Pearson correlation test was used to assess the correlation between overall satisfaction with other factors which were continuous variables. Linear regression was applied to identify the relationship between patient satisfaction and all the factors studied. Statistical value was considered significant if the p-value <0.05.

RESULTS

A total of 304 patients' data were collected and analysed with 13 drop-outs due to incomplete data. Data were collected across all surgical specialties including general surgery, urology, orthopaedics, otolaryngology, plastics surgery, dental surgery, neurosurgery, ophthalmology and gynaecology (Table 1). They were 125 males (41.1%) compared to 179 females (58.9%). Majority of the patients were Malays at 66.1%, Chinese at 14.5%

and Indian at 13.8%. The least races seen were Others at 5.5%. Division of ranges of age into four categories showed highest response rate from the category age of 31-50 (37.2%). Almost half of the patients received secondary level of education. More than half of the patients (52%) belonged to the working group with 13.8% from the government sector and 38.8% from a private sector and self-employed (Table 1). The average of waiting time before consultancy was 29.05 $\pm$ 15.96 minutes.

The majority of the patients in this study were satisfied with overall service provided at the PAC (98.7%) (Table 2). Mean score for provider were comparable with doctor scored highest (4.49 $\pm$ 0.60) followed by counter service (4.48 $\pm$ 0.61) and support staff (4.47 $\pm$ 0.62). However, non-provider which examined facilities, appropriateness of waiting time and services provided by the clinic was the lowest among the 4 subscales (4.40 $\pm$ 0.62) (Table 3).

All 4 domains which examined non-provider and provider (doctor, counter service and support staff) were directly

Table 3: Distribution of average mean score for each provider and non-provider (N=304)

Variable		Mean	Std. Deviation
Non-provider		4.40	0.62
Provider	Doctor	4.49	0.60
	Counter service	4.48	0.61
	Support staffs	4.47	0.62

Table 4: Correlation between overall satisfaction and provider groups (n=304)

Variables		Pearson r value	p-value	Correlation
Non-provider		0.73	<0.001	strong
Provider	Doctor	0.75	<0.001	strong
	Counter service	0.77	<0.001	strong
	Support staff	0.76	<0.001	strong

proportional to overall satisfaction with a strong overall correlation (r>0.7) (Table 4). Independent variables which showed significant association with patient satisfaction were included for multivariate analysis. Only occupation and waiting time were retained in the final model while age, gender and education level were not associated with the level of satisfaction (Table 5). During the variable selection method in the Multiple Linear Regression, only waiting time was found to be significant after adjusting for other variables. There was significant linear negative and fair relationship between waiting time and mean score of satisfaction (r=-0.48, p<0.001, adjusted B (95% CI): 0.02 (-0.019, -0.012).

DISCUSSION

Our results showed an overall good patient satisfaction rate of 98.7% which was comparable with a Canadian study involving 2730 patients that reported an overall anaesthesia satisfaction as high as 98.9% (Tong et al. 1997). Nevertheless, these high scores might indicate a flawed idea as some of the patients may be tinted with the impression that a lower quality of care woud be received by giving negative appraisals (Pearson et al. 1989).

From our study, the satisfaction rate was lowest with the non-clinical elements and these included appropriateness of waiting time, basic amenities and up-to-date equipment used in the anaesthetic clinic. Our findings accentuate the importance of non-clinical aspects in enhancing patient satisfaction and can be improved by clear explanation of the purpose of the PAC visit as well as the process involved when a patient first presented at the registration counter. Also, the equipment to be used and overall cleanliness of the clinic can be improved. Lastly, longer period of waiting time was one of the most faced problems of patients in the outpatient clinic and is strongly related to overall patient satisfaction (Raja et al. 2009).

Table 5: Linear regression to determine the predictors that contribute to the satisfaction score (n=304)

Variable	Crude B[a] (95% CI)	p-value	Adjusted B[b] (95% CI)	p-value
Occupation	0.04 (0.004, 0.079)	0.030	0.03 (-0.004, 0.062)	0.088
Waiting time	-0.02 (-0.019, -0.013)	<0.001	-0.02 (-0.019, -0.012)	<0.001

[a]Simple Linear Regression
[b]Multiple Linear Regression

Based on our findings, the average waiting time was 29.05 ± 15.96 minutes which was comparable with a study of patient waiting time in a primary health care clinic (Ahmad et al. 2017). Also, there was a positive relation of waiting time and overall satisfaction with *p*-value<0.001. This is also observed in several studies that long waiting time in outpatient clinics had caused patient dissatisfaction of hospital services and indirectly affected the quality of health care (Jackovitz 1999; Mc Kinnon et al. 1998; Raja et al. 2009). Therefore, further measures can be improvised to maintain patient satisfaction by means of shortening the waiting times and improving on punctuality from all the health care providers including implementation of record of time of arrival at the clinic, time to be seen by the doctor and allocation of more doctors and staff to cater for relatively large volume of patient attending the PAC.

For the providers, ancillary health care staff, nurses and doctors each play a key role in providing a quality preoperative care to a patient. The aim of the preoperative assessment is to evaluate the patient's condition for anaesthesia prior to surgery, to discuss in detail the anaesthetic options and postoperative pain management, to minimise anxiety and confusion of the perioperative process as well as to coordinate patient care among different discipline of medical teams in order to optimise patient's condition prior to surgery. As the health care delivery domains were defined as the modifiable variables, refining the quality in these domains will render

a better satisfaction and compliance with respective medical treatment (Fallowfield 1992). Interaction with the doctor was found to have the highest mean score from our studies and this has shown that a positive doctor-patient relationship is closely related to patient satisfaction. Therefore, we postulated the importance of communication skill and interpersonal aspects as both have an impact on measurement of patient satisfaction. Of interest, the counter service or often viewed as 'doorkeeper' will be taking charge found to have a higher satisfaction compared to support staff. This finding may be a result of more discernible contact with patients by providing detailed instruction and explanation. This has enabled a better understanding of what the perioperative process would involve and thus greater satisfaction.

In term of non-modifiable factors, patients' age, gender and level of education did not reveal a strong association with patient satisfaction. However, occupation was a significant factor in determining overall satisfaction and self-employed group had a lowest score than the rest. Our study was distributed independently of age, gender and surgical procedures with most surveyed patients scheduled to undergo general surgery, orthopaedic and urology procedures which were consistent with the overall surgical procedures in our institution. Another probable limitation is the timing of the surveys answered. The questionnaires were distributed after consultation with the doctors and were to be completed by the patients towards the end of the visit before they leave. Most of the

questionnaire-based studies employed a mail-back method where patients were given more time to reflect on the experience of the clinic visit before concluding on the questionnaire. This study could be improved with incorporation of analysis of amount of contact time spent with doctors as well as the use of monthly income to determine the characteristic of occupation rather than the type of occupation.

Several measures could be implemented to improve the patient satisfaction based on our results. The duration of visit as part of the factor in influencing satisfaction could be streamlined with smooth patient flow of the clinic process, educational handout to help with better understanding of anaesthesia while waiting for consultation and minimise redundancy in medical questioning. Workshop and continuous medical education on the improvement of clinician-patient relationship and excellent customer services could be initiated to enhance overall health care quality of the clinic.

CONCLUSION

Overall majority of the patients were satisfied with the preoperative evaluation provided at PAC and both non-provider and provider have a significant impact on patient satisfaction. Therefore, effective interventions and continuous medical educations to improve the overall quality of health care providers are essential in minimising medical redundancy and thus waiting time.

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