

Evaluation of a Patient Centred Care Approach in an Australian Hospital

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Abstract

Background: Patient-centred care has become an important indicator for excellence in healthcare. The involvement of the patient as an equal partner in the care process significantly contributes to high quality health care outcomes and ultimately leads to improvements in efficacy of medication management, compliance, and safety. Additionally, evidence suggests that pharmacists' involvement in provision of patient centred care through shared decision making improve adherence and treatment satisfaction. The primary aim of this study is to assess whether the provision of a patient centred care approach through shared decision-making improves inpatients overall satisfaction with their care. The secondary aim evaluates the pharmacist impact on patients' overall satisfaction.

Method: A prospective study was conducted over 2 stages. Stage one involved evaluation of baseline patients' satisfaction and experience with their hospital stay. Stage two involved assessing the impact of decision aids provided by pharmacists on patients' satisfaction.

Results: Provision of patient centred care increased patients' overall satisfaction from 52.5% to 79.8%, $p=0.0003$. Additionally, patients who have had a pharmacist input during their hospital stay were more likely to report a positive experience as shown in both study groups (study group 1, OR=5.821, 95% CI (1.757-19.290); study group 2, OR=2.734; 95% CI (0.802-9.316) $P=0.108$.

Conclusion: This study has highlighted that pharmacists input as well as provision of shared decision making materials promote the delivery of a patient centred care approach resulting in patients overall satisfaction.

Keywords: Pharmacists; Patients' satisfaction, hospital

Introduction

Patient-centred care has become an important indicator for excellence in healthcare [1]. The involvement of the patient as an equal partner in the care process significantly contributes to high-quality health care outcomes and ultimately leads to improvements in efficacy of medication management, adherence, and safety [1,2]. Multiple studies have also concluded that provision of patient centred care approach can also reduce healthcare costs [2-5].

Patient-centred care requires a respectful interaction with consumers, offering them the opportunity to express themselves, providing them with relevant information about their treatment options, considering their concerns, alleviating their fears and provide information and reassurance during their health care journey. It not only engages the patient but also the family, friends and carers and encourages them to take an active role in the decision-making process that enable the development of a treatment care plan that suits the patient's needs. Thus, it is able to improve the patient's satisfaction and overall care experience [1-6].

A high degree of patients' satisfaction has been associated with high quality of care, health care providers and organizations have sought ways to measure patient satisfaction in order to gain an insight into the consumer-perceived quality of an institution's performance. Patient satisfaction surveys are a suitable tool and provide a good opportunity to identify potential gaps in the provider health care to address ways to improve their services and hence improve patients' satisfaction and experience [7,8].

Another approach cited in the literature is asking patients to report on their experience during their hospital stay. While satisfaction questionnaires describe the patient's individual feelings about their care, the experience surveys objectively reflect the perceived quality of care they received. By specifically addressing patient-centred care domains and gauging whether appropriate processes were followed, this type of questionnaire is able to deliver results that can be interpreted in terms of potential enhancements and follow up actions

for healthcare settings. They are also a useful tool for monitoring the performance of various hospital departments and could identify directions in which delivery of healthcare could be improved [7].

Multiple patients' surveys are available to measure patients' satisfaction and experience. The Picker Institute introduced inpatient surveys based on eight principles of patient-centred care, which are used in Europe, the US, Canada and Australia. A shorter version of this survey, consisting of 15 questions relating to patients experience, is an integral part of the standard questionnaires of the National Health Service (NHS) National Survey Programmed in England. In the US, the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey is widely used to measure patients' experiences. This instrument is also based on the Picker principles and assesses the overall rating of health care services as well as the likelihood of patients recommending the services to others [7-10].

The Australian Commission on Safety and Quality in Healthcare has developed a framework for monitoring quality use of medicines across multiple domains. The commission has published several guidelines and standards to ensure safe and effective delivery of healthcare services across the hospitals by assisting hospitals to identify their gaps against an expected practice standards and address them accordingly [1]. More recently, the commission has updated their guidelines to focus on collaborating with consumers in every step during their hospital admission. The new revised standard recognizes the importance of involving patients and their carers in every aspect in their care during their hospital admission. It focuses on strategies that can assist healthcare providers improving communication with patients to encourage them to take part in their health. More importantly, the new standard supports a patient centred care approach and focuses on patients satisfaction and experience in the health settings [1].

Information on patients' satisfaction and experience in health settings is paramount to policy makers to ensure they are fulfilling their obligations towards their patients and providing a high level of healthcare. In Australia, patients' satisfaction and experience with their health providers is an important key performance indicator for multiple healthcare outcomes [1].

Although, there is a plethora of published data on patient's level of satisfaction and experience with the level of care they receive in any given health care settings, there is limited information published on reasons for patients reporting lack of satisfaction with their experiences in healthcare [6-8].

Pharmacists play a vital role in providing information to patients on their medications as well as optimizing their medical treatment as part of the multidisciplinary treating team in various health care settings [11]. A recent study investigating the impact of pharmacist using shared decision making on adherence and measurable depressed patient outcomes found that Pharmacist involvement in shared decision making improved adherence, treatment satisfaction

and patients' belief in antidepressants compared to usual care. This study was based in an outpatient clinic where patients were followed up for six months [12].

To date, there are few studies available that have assessed pharmacists' role in provision of shared decision-making and its effect on improving patients experience with their hospital stay [12-15]. This study will therefore explore pharmacists' impact on the provision of shared decision making on patients' satisfaction.

Aims of the Study

The primary aim of this study is to assess whether the provision of a patient centred care approach through shared decision-making improves inpatients overall satisfaction with their care. The secondary aim evaluates the pharmacist impact on the patients overall satisfaction.

Methods

This prospective study was conducted over two stages. The first stage involved a prospective cross sectional quality baseline audit of patients' satisfaction conducted at an Australian hospital over four months, from September 2017 to December 2017 using the usual care process. The data obtained from the baseline study informed the intervention method. The intervention included the development of a suite of patients' leaflets on various treatment options to improve patients' health literacy on their treatment options and to empower them to take active part in shared decision making in their medical management. The second stage involved evaluating pharmacists' role in the provision of shared decision-making on patients' experience in this tertiary setting. The second stage was conducted from May 2018 to Sept 2018. Shared decision making principles were implemented by provision of a suite of leaflets on treatment options of various disease states to patients as well staff education about delivering patient centred care approach by involving patients in every aspects of their management during their hospitals stay. Both stages of the study were conducted in a 454 bed hospital that is a major health provider of Victoria's Mornington Peninsula and provides a range of health services including specialty wards consisting of: stroke ward, gastroenterology, orthopedics, cardiology, intensive care, geriatrics, mental health, maternity, rehabilitation, general surgery and medical wards. Patients were invited to participate in the study.

A total of five satisfaction and experience questions were devised from the Picker questionnaires that specifically targeted patients' medication management were used to measure patients' satisfaction and experience. They measured five core dimensions: awareness of any medications changes, education about their medications, purpose, administration, side effects and their involvement or their family/carers in their treatment. Answers to questions in both surveys were based on a likert scale for ease of analysis. Overall positive satisfaction and experience were determined if the patients scored positively in five out of the six questionnaires in both stages of the studies. The same set of questions were used in both stages of the study.

A total of 100 patients in each arm were invited to participate in the study and were randomly selected by a random number generator

from all hospital wards and all specialties. From this population, it was calculated that a sample size of 90 patients would be needed in each arm, with a confidence index of 95%, using the WINPEPI software [13]. Patients were eligible to participate in this audit if they were 18 years of age or older and admitted to the hospital for more than 24 hours. Exclusion criteria included patients who were not able to communicate due to language barrier, severe illness, cognitive impairment and those who have a length of stay of less than 24 hours. Data collected from patients' medical history included patients' demographics, comorbidities, length of stay, documentation of medication changes in the history, and pharmacist input and/or counselling. Pharmacist input was determined if there was a documented medication history or medication chart verification or documentation of discharge counselling on the discharge script or on the electronic system or in the medical history.

Statistical Analysis

Descriptive statistics were used to summaries patients' demographics, satisfaction and experience questionnaires results. Chi squared was used to examine the relationship between two categorical variables. A significance level of $P < 0.05$ was considered statistically significant for all tests.

Table 1: outline patient characteristics in both study groups

Demographics	Experience Survey Stage I/Control group (n=99)	Experience Survey Stage II/ Intervention group (n=99)	p value for difference between the surveys
	Patient's n (%)	Patient's n (%)	
Male gender	57 (57.6%)	55 (55.6%)	0.774
Mean age	57.8 ± 20.1	63.1 ± 13.4	0.032
<50	33 (33.3%)	14 (14.1%)	0.002
50-70	34 (34.3%)	49 (49.5%)	0.031
>70	32 (32.3%)	36 (36.4%)	0.549
Marital status			
Single	27 (27.3%)	21 (21.2%)	0.32
Married/de facto	50 (50.5%)	56 (56.6%)	0.393
Separated/divorced	13 (13.1%)	12 (12.1%)	0.831
Widowed	9 (9.1%)	10 (10.1%)	0.809
Education level			
Not finished high school	35 (35.4%)	37 (37.4%)	0.768
Finished high school	33 (33.3%)	43 (43.4%)	0.144
Tertiary/university	31 (31.3%)	19 (19.2%)	0.05
Smoking behaviour			
Non-smoker	42 (42.4%)	25 (25.3%)	0.011
Ex-smoker	36 (36.4%)	53 (53.5%)	0.015
Smoker	21 (21.2%)	21 (21.2%)	1
Mean Charlson Comorbidity Index	2.82 ± 2.68	3.31 ± 2.39	0.17

Multiple logistic regression analysis was used to examine the relationship between the independent variables such as gender, age, marital status, education level, smoking status, Charlson comorbidity index, length of stay, admission ward, pharmacist input and medication changes and the dependent variable which was patients' overall satisfaction. The results are presented in adjusted odds ratios (OR) with 95% confidence intervals (95% CI).

Results

Demographic differences between the two cohorts

A total of 198 patients consented to participate in the 2 stages of the study with a total of 99 patients included in each stage. The overall mean age of patients in stage 1 was younger than stage 2 (57.8 ± 20.1 years vs 63.1 ± 13.4, $p=0.032$). On the other hand, more patients in the intervention group were admitted to medical wards during their hospital admission than those who were included in the stage 1 group; (59.6% vs. 44.44%, $p=0.033$). Refer to

Table 1

0	24 (24.2%)	10 (10.1%)	0.008
01-03-2019	38 (38.4%)	50 (50.5%)	0.086
>3	37 (37.4%)	39 (39.4%)	0.77
Admission unit			
Medical	44 (44.4%)	59 (59.6%)	0.033
Surgical	55 (55.6%)	40 (40.4%)	
Mean Length of stay	4.47 ± 6.31	4.71 ± 4.35	0.75
1-2 days	47 (47.5%)	28 (28.3%)	0.005
3-4 days	23 (23.2%)	37 (37.4%)	0.03
5-7 days	17 (17.2%)	20 (20.2%)	0.584
>7 days	12 (12.1%)	14 (14.1%)	0.674
Mean number of medications changes	2.23 ± 1.95	2.64 ± 2.83	0.23
Number of patients reviewed by a pharmacist during hospital admission	27(28%)	(65) 66%	0.0001

Patients' overall experience

Ninety-nine patients were included in both stages of the patient satisfaction and experience survey. The survey consisted of questions assessing objectively patients' experience to obtain an insight into the hospital's actual performance and activities regarding their medication management during their hospital stay. All patients included in stage 1 of the study received the usual care. No information leaflets were provided during their stay; however, members of the treating team were providing patients with verbal information pertaining to their medical management. Conversely, patients included in stage 2 of the study were provided with written information specifically tailored to their disease states related to their hospital admission by the unit pharmacist. The leaflets provided background information on their medical condition and outlined the various treatment options available to treat their condition. Patients in this group were encouraged to interact with the

medical team during the daily ward round and to actively take part of their medical management.

Table 2 outlines patients' answers to the type of survey questions in both groups. A statistically significant higher proportion of patients in stage 2 of the study reported increased satisfaction about the explanations they received relating to the purpose of their medications, side effects as well as instructions they received about their medications and care explained to them than those who were recruited in stage 1, $p < 0.005$. Additionally, more patients reported that they had a pharmacist input by way of counselling or provision of additional information during their hospital stay in stage 2 than those who were recruited in stage 1 (85.9% vs. 63.6%, $p = 0.003$). Overall patients' satisfaction was also higher in stage 2 compared to those who were included in stage 1 (79.8% vs. 52.5%, $p = 0.0003$) as shown in **Table 2**.

Table 2: Total responses for questions [1-5].

Survey questions	Patient Survey - Stage I	Experience	Δ	Patient Survey - Stage II	Experience	p value
Medication changes	89	89,9%	-8,1%	81	81,8%	0.103
Explanation of purpose of medicines	79	79,8%	16,2%	95	96,0%	0.005
Explanation of medicine instructions	54	54,5%	33,3%	87	87,9%	<0.0001
Explanation of side effects	47	47,5%	23,2%	70	70,7%	0.0009
involvement in their care	55	55,6%	-7,1%	48	48,5%	0.319
Pharmacist input	63	63,6%	22,2%	85	85,9%	0.003
Overall satisfaction	52	52,5%	27,27%	79	79,8%	0.0003

Factors that influence patients' satisfaction and experiences

Univariate analysis of data has shown a statistically significant relationship between patients' overall satisfaction and pharmacist input during their hospital stay, in both study groups, $p < 0.05$. Additionally, data outlined in **Table 3** also shows an association between patients' overall satisfaction in group 1 and their Charlson comorbidity index as well as those who are over 70 years of age, $p = 0.002$ and $p < 0.01$ respectively. Moreover, association between patients' marital status and overall satisfaction was statistically significant in those who were recruited to stage 2.

Data presented in **Table 4** outlines data for regression analysis of predictors of patients overall satisfaction with their hospital stay. Patients who had a pharmacist input during their hospital stay were more likely to report a positive experience as shown in both study groups (study group 1, OR=5.821, 95% CI (1.757-19.290); study 2, OR=2.734; 95% CI(0.802-9.316) $P = 0.108$), although the results were statistically significant for those included in stage 1 only. Additionally, patients with Charlson comorbidity index less than 3 were less likely to show a positive response with their overall experience at their inpatient admission, OR=0.655; 95%CI (0.452-0.948), $P = 0.025$.

Discussion

This study has shown that the involvement of a pharmacist in shared decision-making had a positive experience on patients' satisfaction in a large metropolitan hospital. In this study, we have chosen to use a suite of patient information leaflets designed with consumer involvement to deliver evidence based health information that is specific and relevant to every patient disease state. The main purpose of these information leaflets were to improve patients' health literacy to enable them to take part of their medical management during their hospital admission. Shared decision-making combines patients' values, goals and preferences with the best available treatment evidence in order to reach the most appropriate healthcare decision for that individual [15-18]. Delivery of a patient centred care via shared decision making incorporates provision of evidence based information through various methods of decision support systems [19,20]. Similar to published evidence, our study has shown that provision of patient specific decision aids such as information leaflets tailored to their disease states statistically improves patients overall satisfaction with their care (79.8% vs. 52.5%, $P = 0.0003$), [17,20]. Moreover, pharmacists input in patients care via various decision support systems (either through delivery of verbal or written information) results in patients reporting positive overall experience as shown by Univariate and regression analysis in **Tables 3 and 4**. Strong evidence is available regarding the association of pharmacists' role in the multidisciplinary team and patients positive health outcomes [21-23].

Table 3: Univariate analysis of the association between patients' overall experience and other variables.

Variable	Experience Survey Stage I/Control		Experience Survey Stage II/Intervention	
	Chi Square	p-value	Chi Square	p-value
Medical Ward	1.165	0.316	1.127	0.321
Male Gender	0.308	0.685	0.905	0.452
Age>70	15.438	<0.01*	0.984	0.612
Marital status	3.796	0.284	8.84	0.031*
Education	0.687	0.709	0.29	0.865
Smoking	0.338	0.845	1.254	0.534
Pharmacist input	6.198	0.015*	5.295	0.033*
Length of stay	4.77	0.092	2.205	0.332
Medication changes	0.404	0.656	0.082	0.793
Charlson Comorbidity Index	12.949	0.002*	0.351	0.839

The Society of Hospital Pharmacy in Australia provides guidelines for clinical pharmacists to prioritise their clinical workload. Patients with high acuity, or those with multiple comorbidities or on more than 5 or more medications require a priority review by pharmacists to ensure their medications are charted correctly and to avoid any medications misadventures [23]. Additionally, data presented in **Table**

4 outlines patients included in study group 1 who had less medical comorbidities were less likely to provide an overall positive experience with their hospital stay (Charlson Comorbidity Index<3: OR=0.655 95%CI (0.452-0.948), $P = 0.025$). This data is also backed up by the fact that patients who were included in study group 1 were reviewed by ward pharmacists less frequently than those patients who were recruited to study group 2 (28% vs 66%, $P = 0.0001$).

Table 4: Regression analysis of predictors of overall positive patients' experience.

Variable	Experience Survey Stage I (n=99)	p value	Experience Stage II Survey (n=99)	p value
	OR (95% CI)		OR (95% CI)	
Medical unit	0.745 (0.29-2.427)	0.625	0.585 (0.154-2.213)	0.429
Male gender	0.492 (0.171-1.414)	0.188	0.498 (0.126-1.973)	0.321
Marital status	Ref		Ref	
Widowed single	0.425 (0.115-1.570)	0.199	2.589 (0.527-12.722)	0.242
Married/de facto	0.415 (0.056-3.081)	0.39	0.371 (0.057-2.405)	0.298
Divorced/separated	0.859 (0.081-9.141)	0.9	1.794 (0.172-18.701)	0.625
Education level	Ref		Ref	
Completed tertiary course not completed high school	0.941 (0.242-3.656)	0.93	0.615 (0.162 – 2.336)	0.475
Completed high school	0.529 (0.146-1.924)	0.334	0.9 (0.158-5.136)	0.905
Smoking behaviour	Ref		Ref	
Current smoker non smoker	1.235 (0.374-4.076)	0.73	3.31 (0.620-17.684)	0.162
Ex-smoker	0.806 (0.215-3.015)	0.748	0.718 (0.130-3.976)	0.705
Pharmacist input	5.821 (1.757-19.290)	0.004*	2.734 (0.802-9.316)	0.108
Medication changes	1.686 (0.382-7.454)	0.491	0.973 (0.261-3.626)	0.967
Age	1 (0.957-1.045)	1	0.979 (0.912-1.052)	0.569
Length of stay	1.003 (0.916-1.098)	0.947	0.96 (0.852-1.083)	0.51
Charlson comorbidity Index<3	0.655 (0.452-0.948)	0.025*	0.929 (0.667-1.293)	0.661

Our study has several limitations. The impact of overall patients' satisfactions was not assessed on patients' compliance with their medical treatment, hospital readmissions or mortality. In addition, patients' perception is highly individual and people differ in their attitudes towards disease and treatment. Therefore, responses obtained from patients recruited in this study may contribute to a selection bias and hence may not be able to be extrapolated to other tertiary settings.

Conclusion

This study highlighted that pharmacists input as well as provision of shared decision making materials promote the delivery of a

patient centred care approach resulting in patients overall satisfaction.

Ethics Approval

Ethics approval was obtained from the hospital Research and Ethics Committee to conduct the survey questionnaires.

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