Evaluation of the Quality of Information by Patients Attending the Makelekele Referral Hospital, Brazzaville, Republic of Congo

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ABSTRACT

At the Makelekele base hospital in Brazzaville, the most neglected aspect of activities is hospital information management. Our study aimed to assess the quality of information by interviewing patients hospitalised or consulting at the Makélékélé base hospital between July 2020 and February 2021. This was a descriptive cross-sectional study with a qualitative approach based on the quality criteria of the Delone and MacLean models. Our study population consisted of a group of patients, users of hospital information. The patients gave their consent to participate in the survey. Confidentiality and anonymity of the data were ensured. A total of 300 patients responded to the questionnaires, most of them with a satisfaction rate of over 60%. The satisfaction rate of the patients appeared to be satisfactory with regard to the comfort and cleanliness of the room (63.27%), the noise in the ward (60.20%) and the organisation of discharges. The responses (90-100%) regarding possible improvement of the quality of the data were maximum. The statistical results were significant. Our survey revealed a relatively positive patient satisfaction rate regarding the quality of care, the comfort and cleanliness of the room and the noise in the ward. Patients were satisfied with the organisation of hospital discharges. Most respondents were unanimous about the evolution of data quality. The measurement instrument used for this exploratory research concluded that the target population had a high level of satisfaction. Users were clearly satisfied with the current information system. This investigation revealed that there were significant gaps in data quality that should be prioritised in the management of the Hospital Information System. Our study has allowed us to understand the constraints that hinder information management in the hospital. There were specific elements of health information that need to be diligently applied (information quality) or improved and enhanced (information use).

Introduction

Information is the basis of all reasoned action, of all rational management and even, according to psychosociologists, of all power (1). Timely and reliable information is essential for public health action. The health information system can be defined as the set of tools used for the collection, analysis and interpretation of health data (2). One of the pillars of a health system is hospital information.e (3). A well-functioning hospital information system must ensure the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance and health status (4). The health information system inserted in the organisation of hospitals is in perpetual evolution, it makes it possible to acquire data, to evaluate them, to process them by computer or organisational tools, to distribute information to all the hospital's internal or external partners (5).

For a hospital, the structuring and coherence of information are decisive elements for its operation and to enable it to fully play its role as a health institution. (6). Each actor is required to handle, collect, process and distribute information (7).

At the Makélékélé base hospital in Brazzaville, the most neglected aspect of activities is hospital information management. The absence of a mechanism for managing information is noted. Unfortunately, we are talking about collecting health statistics and not a hospital information system. The piecemeal information collected at the level of the care units in a tacit manner is not only unreliable, but also does not allow for an assessment of the hospital's activity to date.

In the Republic of Congo, this may prove useful in the medium term, given the current hospital reform, one of the objectives of which is to "strengthen the management of the hospital information system". The aim of this study is to improve hospital management in general. The aim of this study is to contribute to the improvement of information management and, by extension, to strengthen the overall

performance of the Makélékélé base hospital. Our study aimed to assess the quality of information by interviewing patients hospitalised or consulting at the Makélékélé base hospital, as well as to carry out an analysis of the quality of the Health Information System based on the Delone and MacLean model.

Methodology

We conducted a descriptive cross-sectional study with a qualitative approach based on the quality criteria of the Delone and MacLean models, which will consist of an evaluation of the quality of the data and the use of the information. It took place at the Makélékélé Base Hospital, in the period from Wednesday 1 July 2020 to Monday 8 February 2021.

Our study population consisted of a group of patients, users of hospital information. Questions related to patient satisfaction as users of hospital information were addressed. The inclusion criteria for patients were patients hospitalised for a pathology, whose length of stay was at least 48 hours; patients whose discharge destination was home; patients who consented to participate in the study. Non-inclusion criteria were patients discharged against medical advice or transferred to another department and patients who died. Any refractory person who for any reason did not complete the survey form was excluded from the study.

The type of sampling used was sequential sampling, i.e. the sample was selected according to the order of eligibility in the survey. Users who were physically present at the time of the survey, met the inclusion criteria and consented were systematically recruited. The study population corresponded to all patients who agreed to participate in the survey during our study period. The sample size was calculated using the sampling formula for a survey:

N = number of patients hospitalised per year at Makélékélé base hospital in 2020 n-1 (2012) = 600. d = width of the interval 5% α = risk of error 5%. p = satisfaction rate 50%.

$$n = \frac{Np(1-p)}{\dfrac{d^2}{Z^2_{1-\alpha/2}2}(N-1) + p(1-p)}$$

This rate was chosen because we had no data on patient satisfaction with the use of hospital information. This formula gave us 275 patients to collect. We were able to interview 300 patients. The sample of patients was drawn up as the hospital wards were visited. There was no prior sorting in terms of gender, geographical origin or socio-economic level. Each patient was free to accept or refuse the interview. The average interview time was 15 minutes.

Our information collection instrument was a semi-structured patient (user) questionnaire. The user questionnaire was administered directly to the users after their consent in the different inpatient departments of the hospital. Data were collected on two paper survey forms and then entered into a computer using a data entry mask. User satisfaction was measured by means of scores. Respondents gave their level of satisfaction in five points : Not concerned, Very bad, bad, Satisfied and Very satisfied. Epi info software version 7.2.1 was used for statistical analysis. The descriptive data were presented in percentages. Univariate descriptive analyses were performed, with percentage distribution tables for the categorical variables. The statistical results were significant, as 1 was not included in the confidence interval.

The ethical commission of CIESPAC gave its approval for the study. The patients gave their consent to participate in the survey. Refusal to participate in the study did not lead to any modification or sanction of the health worker or the patient. Confidentiality and anonymity of the data were ensured.

Results

A total of 300 questionnaires were completed by patients at the Makélékélé base hospital. The questions related to the quality of care. The statistical results were significant. The satisfaction rate was relatively positive, with response rates above 60%, for the most part. The statistical results are significant.

Table 1 shows that the satisfaction rate of the patients appeared to be satisfactory with regard to comfort and cleanliness of the room (63.27%) and noise in the ward (60.20%). On the other hand, the respondents did not feel concerned about the meal schedule (95.58%), the quality and quantity of the meals (92.52%), and compliance with diets (95.92%).

In Table 2, patient satisfaction appeared to be satisfactory for all questions related to the quality of care. The statistical results were significant. The satisfaction rate was relatively positive, with response rates above 60%, for the most part. The statistical results are significant. Table 3 shows us the satisfaction rate of the patients with a satisfactory mention regarding the comfort and cleanliness of the room (63.27%) and the noise in the ward (60.20%). On the other hand, respondents were not concerned about the meal schedule (95.58%), the quality and quantity of meals (92.52%) and compliance with diets (95.92%). Table 4 shows us a patient satisfaction rate with answers above 60% for all questions related to the organisation of outings. The statistical results were significant. The responses (90-100%) regarding possible improvements in data quality were maximum (Table 5). Most of the respondents were unanimous about the development of data quality.

Several studies have revealed that user satisfaction is widely regarded as an important variable in determining the success of an information system (8). The measurement instrument used for this exploratory research concludes that the target population has a high level of satisfaction. Health professionals are clearly satisfied with the current information system.

There is some ambiguity in the answers given between the description of the health information system, the quality of the information and the satisfaction of health professionals working in this field. Within the framework of the reform of the health information system, these quality assessment mechanisms become major challenges in order to make it a fully integrated process in the management that will harmonise with all the other components of the health system reality as well as the hospital reality.

Discussion

Our study focused on the quality of health information and its use at the Makélékélé referral hospital. The variables studied for the measurement of quality based on the literature according to the DeLone & McLean model (8), were the measure of the usefulness of the information, to assess user satisfaction. We used variables from the DeLone and McLean model (8) in their ability to evaluate the success of the decision support solutions envisaged for health organisations in general and the hospital organisation of the Makélékélé base hospital in particular.

DeLone and McLean, in their study, revealed that user satisfaction is widely regarded as an important variable in determining the success of an information system (8). Our

survey revealed a relatively positive rate of patient satisfaction regarding the quality of care, the comfort and cleanliness of the room and the noise in the ward. On the other hand, respondents were not concerned about the timing of meals, the quality and quantity of meals, and compliance with diets. Patients were satisfied with the organisation of discharges from the hospital. The responses (90-100%) regarding possible improvements in the quality of the data were maximum. Most of the respondents were unanimous about the evolution of data quality. The evaluation of the health professionals on the health information system revealed that the knowledge of the health information system was good. The measurement instrument used for this exploratory research concludes that the target population has a high level of satisfaction. Users are clearly satisfied with the current information system. Jean-Marc Palm et al, in studying the determinants of user satisfaction with a clinical information system, concluded that the quality of the information and the quality of the service were strongly correlated with user satisfaction (9).

The patients interviewed were unanimous in stating that their satisfaction rate was clearly satisfactory. From all the data analysed, the use of health information in the hospital environment is relatively sufficient to enable the establishment of an efficient hospital system. The use of hospital information therefore appears to be sufficient to enable the establishment of an efficient hospital system. This investigation revealed that the "data quality" component had significant shortcomings that should be prioritised in the management of the Hospital Information System.

We are formulating actions to be taken to improve hospital information management, so that it can be a tool for steering the hospital. Every entity must have an information system to guarantee its proper functioning. This is why the hospital must set up information management mechanisms within the public service. In the current context of health information management within hospitals, the study at the Makélékélé Base Hospital reveals the inadequacies and the low importance that the various actors attach to information in their care services and in general for hospital management.

Limitations of the study

In order to understand the inadequacies affecting two elements of health information management as a whole, and in particular within the Makélékélé base hospital, we present in this section the results of the interviews conducted with the various actors. This presentation of the results focuses on aspects such as the knowledge, skills, perceptions and satisfaction of internal clients (health professionals) and external clients (patients) on the one hand, and on the other hand on the mechanisms and barriers to effective information management within this structure.

Conclusion

Our study has made it possible to understand the obstacles to information management in hospitals and to show how data from the hospital information system can be used as a management dashboard, thus enabling the hospital manager to manage his establishment successfully. The implementation of a health information system as a key tool for successful hospital management is the responsibility of the users.

The results showed that there are specific elements of health information that deserve to be applied assiduously (information quality) or to be improved and enhanced (information use). Our results confirmed the empirical validation of the hypothesis of the poor state of the health information system.

Table 1. Patient satisfaction with quality of care questions (N=300)

Qualité des soins	Very satisfactory	Satisfactory	Poor	Very poor	Not concerned
Reception in the care unit	105 (35,71%)	146 (49,66%)	24 (8,16%)	15 (5,10%)	4 (1,36%)
Waiting time	100 (34,25%)	138 (47,26%)	35 (11,99%)	16 (5,48%)	3 (1,03%)
Identification of the different people working in the department	42 (14,48%)	200 (68,97%)	27 (9,31%)	12 (4,14%)	9 (3,10%)
Respect for privacy	48 (16,38%)	203 (69,28%)	25 (8,53%)	9 (3,07%)	8 (2,73%)
Respect for confidentiality	49 (16,67%)	196 (66,67%)	29 (9,86%)	13 (4,42%)	7 (2,38%)
Information on treatment and health status	36 (12,29%)	205 (69,97%)	37 (12,63%)	13 (4,44%)	2 (0,68%)
Friendliness and availability of staff	40 (13,65%)	198 (67,58%)	32 (10,92%)	11 (3,75%)	12 (4,10%)
Waiting time for examinations	43 (14,63%)	182 (61,90%)	41 (13,95%)	14 (4,76%)	14 (4,76%)
Pain management	42 (14,29%)	193 (65,65%)	33 (11,22%)	10 (3,4%)	16 (4,44%)
Treatment follow-up	36 (12,24%)	194 (65,99%)	35 (11,9%)	10 (3,4%)	19 (6,46%)
Overall satisfaction with care	31 (10,62%)	203 (69,52%)	39 (13,36%)	10 (3,42%)	9 (3,08%)

Table 2. Patient satisfaction rate according to the comfort of the stay (N= 300)

Comfort of the stay	Very satisfactory	Satisfactory	Poor	Very poor	Not concerned
Comfort and cleanliness of the room	27 (9,18%)	177 (60,20%)	41 (13,95%)	40 (13,61%)	9 (3,06%)
Noise in the service	18 (6,12%)	186 (63,27%)	41 (13,95%)	29 (9,86%)	20 (6,80%)
Meal times	0 (0,0%)	5 (1,70%)	2 (0,68%)	6 (2,04%)	281 (95,58%)
Quality and quantity of meals	0 (0,0%)	8 (2,72%)	9 (3,06%)	5 (1,70%)	272 (92,52%)
Compliance with diets	0 (0,0%)	3 (1,02%)	3 (1,02%)	6 (2,04%)	282 (95,92%)

Table 3. Patient satisfaction with quality of care questions (N= 300)

Quality of care	Very satisfactory	Satisfactory	Poor	Very poor	Not concerned
Reception in the care department	108 (36,00%)	149 (49,67%)	24 (8,00%)	15 (5,00%)	4 (1,33%)
Waiting time	103 (34,33%)	143 (47,67%)	35 (11,67%)	16 (5,33%)	3 (1,00%)
Identification of the different people working in the department	42 (14,00%)	209 (69,67%)	28 (9,313)	12 (4,00%)	9 (3,00%)
Respect for privacy	50 (16,67%)	208 (69,33%)	25 (8,33%)	9 (3,00%)	8 (2,67%)
Respect for confidentiality	51 (17,00%)	200 (66,67%)	29 (9,67%)	13 (4,33%)	7 (2,33%)
Information on treatment and health status	38 (12,67%)	210 (70,00%)	37 (12,33%)	13 (4,33%)	2 (0,67%)
Friendliness and availability of staff	40 (13,33%)	205 (68,33%)	32 (10,67%)	11 (3,67%)	12 (4,00%)
Waiting time for examinations	43 (14,33%)	188 (62,67%)	41 (13,67%)	14 (4,67%)	14 (4,67%)
Pain management	42 (14,00%)	199 (66,33%)	33 (11,00%)	10 (3,33%)	16 (5,33%)
Treatment follow-up	36 (12,00%)	200(66,67%)	35 (11,67%)	10 (3,33%)	19 (6,33%)
Overall satisfaction with care	31 (10,33%)	211 (70,33%)	39 (13,00%)	10 (3,33%)	9 (3,00%)

Table 4. Patient satisfaction with the comfort of the stay (N=300)

Comfort of the stay	Very satisfactory	Satisfactory	Poor	Very poor	Not concerned
Comfort and cleanliness of the room	28 (9,33%)	182 (60,67%)	41 (13,67%)	40 (1333%)	9 (3,00%)
Noise in the service	18 (6,00%)	190 (63,33%)	43 (14,33%)	29 (9,67%)	20 (6,67%)
Meal times	0 (0,0%)	5 (1,67%)*	2 (0,67%)*	6 (2,00%)*	287 (95,67%)
Quality and quantity of meals	0 (0,0%)	3 (1,00%)*	3 (1,00%)*	6 (2,00%)*	288 (96,00%)
Compliance with diets	0 (0,0%)	8 (2,67%)	9 (3,00%)	5 (1,67%)*	278 (92,67%)

Table 5. Patient satisfaction rate according to the organisation of discharges at the Makélékélé base hospital (N=300)

Organisation of outings	Very satisfactory	Satisfactory	Poor	Very poor	Not concerned
Information on medication	15 (5,00%)	198 (66,00%)	50 (16,67%)	26 (8,67%)	11 (3,67%)
Information on possible activities after the outing	9 (3,00%)	205 (68,33%)	48 (16,00%)	26 (8,67%)	12 (4,00%)
Information given on continuity of care	13 (4,33%)	196 (65,33%)	50 (16,67%)	21 (7,00%)	21 (7,00%)
Exit administrative formalities	10 (3,33%)	202 (67,33%)	43 (14,33%)	26 (8,67%)	19 (6,33%)

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