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Improving Patient Experiences in a Haematology and Oncology Day Unit in Medina, Saudi Arabia

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Abstract

Background: Cancer treatment is becoming more common in outpatient setting. This trend is projected to continue due to an increase in cancer patients worldwide. Patients may, however, struggle to manage their cancer and achieve desired goals in outpatient settings due to a lack of professional support. Hence, effective communication has been associated with improved adherence to haematology and oncology treatment and improved patient experience and quality of life.

Aim: The purpose of this study is to examine the link between patient experience and special communication with cancer patients who were treated in a day unit for haematology and oncology.

Methods: A pre-post group study was carried out in the haematology and oncology day unit at King Fahad Hospital in Medina, Saudi Arabia. Data was collected using Picker Patient Experience Questionnaire (PPE-15) before and after communication intervention. Data was then analyzed using a descriptive statistic and paired sample t-test to compare the pre- test and post-test scores.

Results: A total of 70 patients responded, 47% are <= 30 years old, 71% of the patients were female, and 68.5%were Saudi nationals. The study shows a statistical significant in the post-test of Picker Patient Experience Questionnaire (PPE-15) before (M =33.02, SD=5.44) to after communication intervention (M=49.19, SD=6.08), t (67) = -21.021, p < .00.

Conclusion: The communication intervention effectively improved the patient experiences in a haematology and oncology day unit. Therefore, the findings from the current study may serve as an effective strategy to manage patient experience.

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INTRODUCTION

In Saudi Arabia, the word "patient experience" has recently become widely used in the general healthcare sector since it is described as one of the country's national transformation projects to improve patient experience and deliver optimal health care. While there is no universal agreement on how to define the concept of patient experience in healthcare organizations, This study used the definition of The Beryl Institute's current definition as "the sum of all interactions, shaped by an organization's culture, that influence patient perceptions across the continuum of care" (2014). The patients' experiences were linked to Saudi Arabia's 2030 ambition for betterment. According to studies, patients' pleasure and experience have been reported to be disappointing in general. For example, Mahfouz et al. (2020) conducted a cross-sectional descriptive study to determine patient satisfaction and experience in Obstetrics and Gynecology departments throughout Saudi Arabian hospitals. The data revealed that most of the participants

(55.7 percent) were unsatisfied or had a negative experience in this study, which included 1,829 individuals.

Cancer patients are increasingly treated in outpatient units. This trend is expected to continue due to the increasing number of cancer patients worldwide (Bonacchi et al., 2016). According to WHO (2018), the annual number of haematology and oncology patients is expected to increase from 14 million in 2012 to 22 million in the next two decades. However, patients may experience a lack of professional support in outpatient settings to cope with their cancer and achieve desired outcomes (McIlfatrick et al., 2007). To manage symptoms more autonomously throughout cancer treatment in a day unit, patients must have a comprehensive understanding of the adverse effects of chemotherapy (Coolbrandt et al., 2016). Studies reveal that patients receiving chemotherapy in haematology and oncology day units frequently have unmet needs in terms of side effect management. These symptoms are the leading cause of unexpected hospitalizations (McKenzie et al., 2011).

Furthermore, studies show that when cancer patients are treated in haematology and oncology day units, they have concerns and unmet requirements linked to psycho-emotional disorders (Bonacchi et al., 2016; Prip et al., 2018). An obstacle to successful communication in cancer therapy has been highlighted as a lack of time for conversation and brief contact between patients and healthcare professionals.

Effective communication between healthcare providers and patients has an impact on the quality of cancer care and, as a result, on the ability of patients to live with the disease (Prip et al., 2018; Skea et al., 2014). Hence, effective communication has been linked to improve the adherence of haematology and oncology treatment and improving the quality of life and patient experience (Prip et al., 2019). Additionally, communication and eliciting feedback from patients are important to highlight aspects of care that need to be considered to improve the quality of care and patient experience (Berger et al., 2020). The patient experience refers to how patients, their families, and those involved in their treatment feel about the care process and structure and the care outcomes (NHS, 2013). The importance of patients' opinions in obtaining high-quality care is becoming widely recognized (Doyle et al., 2013; Rathert et al., 2012).

The aim of this study is to investigate the relationship between patient experience and special communication with cancer patients who were treating in haematology and oncology day unit at King Fahad Hospital in Medina, Saudi Arabia.

METHODS

Design and the Sample

A pre-post group design was utilized for this study to examine the effect of special communication with cancer patients about their needs during their treatment journey. In addition, a convenience sample was used to select (70 patients) with cancer who are available and treated in the haematology and oncology day unit during the research period at King Fahad Hospital in Medina, Saudi Arabia.

Setting

This study was conducted in the haematology and oncology day unit at King Fahad Hospital in Medina, Saudi Arabia. This hospital is operated by the Saudi government that is represented by Ministry of Health (MOH) and receive government funding.

Tool for data collection

A survey consists of 19 questions divided into two sections were used to collect the data from the patients: Demographic information (age, gender, nationality) and Picker Patient Experience Questionnaire (PPE-15).

The PPE-15 was created to get input from patients in order to identify areas of care that needed to be improved and to track performance and care. It consists of 15 questions that are divided into seven care dimensions: respect, coordination, information/communication/education, physical comfort, emotional support, relative involvement, transitions and continuity. The responses range from two ("yes" or "no") to four ("yes," "no," "I didn't need to," or "yes, to some extent"). The PPE-15 has been proven to be valid and reliable previously. (Jenkinson et al. 2002; Jenkinson et al. 2003). The PPE-15 has not been translated into Arabic language thus, forwards and backwards translation were used to finalize the last Arabic version by two professional bilingual translators. (Wild et al. 2005; Mokkink et al. 2010). The Arabic PPE-15 was tested for face validity after the translation and before statistical testing. This was accomplished by giving the questionnaire to ten patients before the study period, to determine its adequacy, appropriateness, and understandability (Polit & Beck, 2012). Following these steps, the PPE-15 was approved and tested in its final Arabic form. Additionally, in this study, the reliability of the Arabic PPE-15 as calculated by Cronbach's alpha was 0.858.

Fieldwork and data collection

In the pre-intervention phase, the participants have completed the questionnaire during the patient visit to the haematology and oncology day unit. After gathering all questionnaires, special communication with patients was implemented. The intervention consists of communicating with patients in the haematology and oncology day unit about their rights and needs during their treatment journey. Patients have been provided with an explanation of the treatment process in the unit and were guided about what inquiries need to be addressed by their nurses and doctors about health concerns, unit management, and home consideration. In addition, doctors and nurses in the haematology and oncology day unit were informed about the communication intervention. Two oncology nurses implemented the intervention for four weeks and collected the patients' post-intervention assessment data.

Ethical consecrations

The first step to conduct the study is to obtain written approval from Institutional Review Board (IRB) from King Fahad Hospital. Then, participants in this study were given an explanation of the purpose of the study and informed the right to choose not to answer any question and to exit from the study whenever they decide to. Next, consent to participate in the study has been obtained

from the participants. In addition, the anonymity and confidentiality of the participants were ensured in the design of the questionnaire and in the data collection.

Date analysis

Data were entered using Statistical Package for Sciences (SPSS) version 27.0 (SPSS Inc. Chicago, IL, USA). A descriptive statistic was used in analyzing the data obtained from the participants in the pre-test and post-test scores. Paired sample t-test was used to compare the pre-test and post-test scores. A p-value of <0.05 will be applied to determine statistical significance.

RESULTS

A total of 70 patients have participated in the study who were available in the study period of 4 weeks (25th October 2021 to 24th November 2021). The questionnaire was completed before and after the communication intervention. Two patients did not complete the post test. Of the patients who completed the questionnaire, 33 (47%) are <= 30 years old, 50 of the patients (71%) were female, and 48 (68.5%) were Saudi nationals. Approximately 50% of those patients have high school or equivalent educational background and 20% have no educational qualification (Table 1).

Table 1: Characteristics of study population (n = 70)

Characteristics	**f**	**%**
Age group (in years)		
< = 30	33	47
31 to 40	10	14.3
41 to 50	8	11.4
>50	19	27
Gender		
Male	20	28.5
Female	50	71.5
Nationality		
Saudi	48	68.5
Non-Saudi	22	31.5
Educational background		
No Educational qualification	14	20
High school or equivalent	35	50
Associate degree or Diploma	10	14
University degree	9	13
Postgraduate qualification	2	3

Table 2 shows an increase in the mean of all items of Picker Patient Experience Questionnaire (PPE-15) before (*M* = 33.0294, *SD* 5.44983) and after the communication intervention (*M* = 49.1912, *SD* = 6.08707). In addition, it can be noticed that the PPE item "enough information to family or someone close to help for recovering" was dramatically increase from before (*M* = 1.9118, *SD* = .33392) to after the intervention (*M* = 4.3088, *SD* = .95037). However, the PPE item "Information about danger signals to observe at home" was slightly increase before (*M* = 2.0588, *SD* = .38176) to after the intervention (*M* = 2.2059, *SD* = .85621).

Table 2: Mean and standard deviation of PPE items

PPE-15 Items		Pre Test (n=68)		Post Test (n=68)	
		Mean	SD	Mean	SD
PPE-1	Understandable answers to questions from doctors	2.8529	.57988	3.7206	.45205
PPE-2	Understandable answers to questions from nurses	2.8235	.84538	3.6176	.57379
PPE-3	Different answers from different personnel	2.5588	.85313	3.4853	.85506
PPE-4	Discuss anxieties/fears about condition/ treatment with doctor	2.5294	.87196	3.0294	1.05052
PPE-5	Doctors talk in front of you, as if you weren't there?	2.5000	.95417	2.7059	.52001
PPE-6	Involvement in care and treatment decisions?	2.2794	.64289	2.7353	.53581
PPE-7	Treated with respect and dignity	1.8824	.56063	2.7353	.44446
PPE-8	Discuss anxieties/ fears about condition/ treatment with nurse	1.9265	.55493	2.9853	1.05791
PPE-9	Someone in staff to talk to about concerns?	1.4853	.53232	2.3088	1.17508
PPE-10	Staff took action to relieve pain	2.0294	.42217	2.4706	.72216
PPE-11	Opportunity for family/close persons to talk to doctor	1.7794	.48394	5.3382	1.08738
PPE-12	Enough information to family or someone close to help recover?	1.9118	.33392	4.3088	.95037
PPE-13	Understandable explanation about the purpose of medicines	2.1912	.46544	4.5294	.96924
PPE-14	Information about medication side effect	2.2206	.51386	3.0147	1.07193
PPE-15	Information about danger signals to observe at home	2.0588	.38176	2.2059	.85621
Total Mean		33.0294	5.44983	49.1912	6.08707

A paired-samples t-test was conducted to evaluate the impact of communication in improving patient experience. The results showed a statistical significant in the post-test of patient experience before (*M* =33.02, *SD*=5.44) to after (*M*=49.19, *SD*=6.08), t (67) = -21.021, $p < .001$. This finding

indicates that the patient experience was improved significantly after the communication intervention (Table 3).

Table 3: Samples statistics of pre and post test and results of paired t test (n=68)

Samples Statistics			**Paired t Test**				
Test	**M**	**SD**	**M**	**SD**	**t**	**df**	**Sig.**
Pre Test	33.0294	5.44983	-16.16176	6.34014	-21.021	67	.000
Post Test	49.1912	6.08707					

DISCUSSION

In the present study, pre-test and post-test evaluation was used to assess the effectiveness of the communication intervention to clients in the haematology and oncology day unit about their needs, concerns, and right during their treatment journey. The findings indicated that the overall patients experience improved after the intervention. Furthermore, patients have got answers to their essential questions after effective communication. According to Kissane et al. (2017), good communication between patients, their families, and the medical staff is critical. Patients and their families want answers to their questions and a lot of information to make healthcare decisions.

In addition, following the communication intervention, patients and their physicians positively discussed their fears and anxieties regarding their condition and treatment, which improved the overall patient experience. The findings are in line with the research results conducted by Grocott and McSherry (2018), indicating that patients' top priorities are participating in their care and receiving the appropriate quantity of information. Additionally, it can be noticed that patient and family involvement in care and treatment decisions were improved significantly after communication intervention. This indicates that patients were able to discuss the care plan with their health professionals and thus, this positively affects their satisfaction and experience. According to Thomas et al. (2005), several studies on patient preferences for decision-making involvement have revealed that patients with cancer prefer a collaborative role and shared decision-making the most.

There was a significant improvement in the treatment with respect and dignity. This indicated that good communication with the patients and explaining the treatment process, patients' rights, and concerns in the oncology and haematology unit increase patient satisfaction and experience. According to Breitbart et al. (2021), evidence supports that the quality of communication with cancer patients increased patient satisfaction and felt treated with respect and dignity. Additionally, in a study conducted by Bridges et al. (2021), the findings showed that patient experiences in the treatment with respect and dignity are based on efforts by healthcare professionals and healthcare organizations to promote effective relationships with patients

Furthermore, it can be noticed that opportunity for family and close persons to talk to the doctor and enough information to family or someone close to help recover was increased significantly after the communication intervention. This indicates that family and close persons are more likely to communicate and receive all the information they need for treatment and recovery from doctors and nurses. Thus, their expectations were managed via prior communication. This result is in line with the study conducted by Laidsaar-Powell et al. (2016), which indicated that the involvement of patients with cancer and their family need psychosocial support to address their concerns by effective communication with health professionals.

Another finding of this study is that patients after the communication intervention have discussed better with the treatment team about the purpose of medicines and side effects that need to be watched at home. This result highlights the potential benefit of prior, effective communication with the patients and their families as they understand what information and concerns they should ask and address during their journey of treatment. Previous studies demonstrate that inadequate communication with patients and their family have a negative impact on essential information about the purpose of medicines and side effect to observe at home (Leonardsen et al., 2017).

Our study has limitations. The study was a nonrandomized pre-post study due to limited patients available and patient turnover during the intervention period. In addition, this study was limited to the hematology and oncology day unit at King Fahad Hospital in Medina. In conclusion, the findings of this study demonstrate that communication between staff and cancer patients about their rights, needs during the treatment journey does indeed increase patient satisfaction and improve the patient experience. The communication intervention can serve as an effective strategy to manage patient experience. Further studies are needed to provide more effective ways to enhance patient expectations in the hematology and oncology day unit, such as staff training, using technology, and standardizing the processes.

REFERENCES

Berger, S., Saut, A., & Berssaneti, F. (2020). Using patient feedback to drive quality improvement in hospitals: a qualitative study. BMJ Open, 10(10), e037641. https://doi.org/10.1136/bmjopen-2020-037641.

Bonacchi, A., Miccinesi, G., Galli, S., Primi, C., Chiesi, F., Lippi, D., Muraca, M., Toccafondi, A., (2016). Use of the needs evaluation questionnaire with cancer outpatients. *Supportive Care in Cancer*. 24, 3507–3515. https://doi.org/10.1007/s00520-016- 3176-4.

Breitbart, W., Butow, P., Jacobsen, P., Lam, W., Lazenby, M, Loscalzo., M. (2021). Psycho-Oncology. United Kingdom. Oxford University Press.

Bridges C, Duenas DM, Lewis H, Anderson K, Opel DJ, et al. (2021) Patient perspectives on how to demonstrate respect: Implications for clinicians and healthcare organizations. PLOS ONE 16(4): e0250999. https://doi.org/10.1371/journal.pone.0250999

Coolbrandt, A., Dierckx de Casterlé, B., Wildiers, H., Aertgeerts, B., Van der Elst, E., van Achterberg, T., Milisen, K., (2016). Dealing with chemotherapy-related symptoms at home: a qualitative study in adult patients with cancer. *European Journal of Cancer Care*. 25, 79–92. https://doi.org/10.1111/ecc.12303.

Doyle C, Lennox L, Bell D. (2013). A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. BMJ Open. 3(1):e001570.

Grocott, A., & McSherry, W. (2018). The Patient Experience: Informing Practice through Identification of Meaningful Communication from the Patient's Perspective. Healthcare, 6(1), 26. https://doi.org/10.3390/healthcare6010026

Jenkinson C, Coulter A, Bruster S. (2002). The picker patient experience questionnaire: development and validation using data from in-patient surveys in five countries. Int J Qual Health Care.14 (5):353–8.

Jenkinson C, Coulter A, Reeves R, Bruster S, Richards N. (2003). Properties of the picker patient experience questionnaire in a randomized controlled trial of long versus short form survey instruments. *Journal of Public Health.* 25(3):197–201.

Kissane, D., Bultz, D., butow, P. (2017). Oxford textbook of communication in oncology and palliative care. United Kingdom. Oxford University Press.

Laidsaar-Powell, R., Butow, P., Bu, S., Fisher, A., & Juraskova, I. (2016). Attitudes and experiences of family involvement in cancer consultations: a qualitative exploration of patient and family member perspectives. Supportive Care In Cancer, 24(10), 4131-4140. https://doi.org/10.1007/s00520-016-3237-8

Leonardsen, A., Grøndahl, V., Ghanima, W., Storeheier, E., Schönbeck, A., & Løken, T. et al. (2017). Evaluating patient experiences in decentralised acute care using the Picker Patient Experience Questionnaire; methodological and clinical findings. BMC Health Services Research, 17(1). https://doi.org/10.1186/s12913-017-2614-4.

Mahfouz, M., Abed, A., Alqahtani, M., Albaqami, A., & Alsubaie, M. (2020). Patient satisfaction toward health care performance in the Obstetrics and Gynecology departments among hospitals in Saudi Arabia. *International Journal of Medicine in Developing Countries,* 338-346. doi:10.24911/ijmdc.51-1575405816

McIlfatrick, S., Sullivan, K., McKenna, H., Parahoo, K., (2007). Patients' experiences of having chemotherapy in a day hospital setting. *Journal of Advance Nursing*. 59, 264–273. https:// doi.org/10.1111/j.1365-2648.2007.04324.x.

McKenzie, H., Hayes, L., White, K., Cox, K., Fethney, J., Boughton, M., Dunn, J., (2011). Chemotherapy outpatients' unplanned presentations to hospital: a retrospective study. *Supportive Care in Cancer*. 19, 963–969. https://doi.org/10.1007/s00520-010- 0913-y

Mokkink L, Terwee C, Patrick D, Alonso J, Stratford P, Knol D, et al. (2010). The COSMIN checklist for assessing the methodological quality of studies in measurement properties of health status measurement instruments: an international Delphi study. Quality of Life Research. 19 (4):539–49.

NHS Institute for Innovation and Improvement (2013). The patient experience book. A collection of the NHS Institute for Innovation and Improvement guidance and support. Coventry: University of Warwick Science Park.

Polit, D. F., & Beck, C.T. (2012). Nursing research principles and methods (9th ed.). Baltimore: Lippincott Williams and Wilkins.

Prip, A., Møller, K.A., Nielsen, D.L., Jarden, M., Olsen, M.-H., Danielsen, A.K., (2018). The patient–healthcare professional relationship and communication in the oncology outpatient setting. *Journal of Cancer Nursing.* 41, E11–E22. https://doi.org/10.1097/NCC. 0000000000000533.

Prip, A., Pii, K. H., Møller, K. A., Nielsen, D. L., Thorne, S. E., & Jarden, M. (2019). Observations of the communication practices between nurses and patients in an oncology outpatient clinic. *European Journal of Oncology Nursing*. doi:10.1016/j.ejon.2019.03.004

Skea, Z.C., MacLennan, S.J., Entwistle, V.A., N'Dow, J., (2014). Communicating good care: a qualitative study of what people with urological cancer value in interactions with health care providers. *European Journal of Oncology Nursing*. 18, 35–40. https://doi.org/10.1016/j.ejon. 2013.09.009

Rathert C, Brandt J, Williams ES. (2012). Putting the 'patient' in patient safety: a qualitative study of consumer experiences. Health Expect. 2012;15(3):327–36

The Beryl Institute. (2014). Defining Patient Experience. Retrieved from https://www.theberylinstitute.org/page/DefiningPatientExp

Thomas F. Hack; Lesley F. Degner; Patricia A. Parker (2005). The communication goals and needs of cancer patients: a review., 14(10), 831–845. doi:10.1002/pon.949

Wild D, Grove A, Martin M, Eremenco S, McElroy S, Verjee-Lorenz A, et al. (2005). Principles of good practice for the translation and cultural adaptation process for patient-reported outcomes (PRO) measures: report of the ISPOR task force for translation and cultural adaptation. *Value Health*. 8(294–104).

Word Health Organization (WHO). (2018). Cancer. Retrieved from https://www.who.int/cancer/resources/keyfacts/en/

Appendix A

Institutional Review Board Statement

وزارة الصحة
Ministry of Health

H-03-M-084

Institutional Review Board, General Directorate of Health Affairs in Madinah

To *Ayman Ateq Al-Omari* *ID: 1019025889*
Ali Mohammed Al-Anzi *ID: 1030824625*
Fatima Rashid Al-Juhani *ID: 1065542753*
Maysa Fathi Hassanein *ID: 2227364086*

This is to certify that Institutional Review Board (IRB), General Directorate of Health Affairs in Madinah has reviewed all the submitted updated and amended Documents from the ethical point view and has approved your study titled: *Improving Patient Experiences in a Haematology and Oncology Day Unit in Medina, Saudi Arabia*

The committee is fully compliant with the conditions and principles of good clinical practice.The committee is constituted in accordance with the WHO and ICH-GCP guidelines and works according to written Standard Operating Procedures.

The IRB recommended granting permission of approval to conduct the project along the following terms:

1. **If there are any further amendments, they must be approved prior to implementation unless they are intended to reduce risk.**
2. **Monitoring: the project may be subject to an audit or any other form of monitoring by the REC.**
3. **All unanticipated or serious adverse events must be reported to the REC at when they occur according to the protocol.**
4. **Inform the IRB prior to making prospective changes to the study procedure**
5. **Upon the study completion, the PI is expected to submit a final report at the end of the study**

Please note that this approval is valid for one year commencing from the date of this letter.

Head Of IRB Committee
Dr Tasbieeh Tefal AlJehani

IRB - Madinah

EMAIL:madinah.search@gmail.com 28/07/2021 IRB 136-2021
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Appendix B
Hospital Approval

وزارة الصحة
Ministry of Health

مستشفى الملك فهد
إدارة الشئون الاكاديمية والتدريب

الإسم	جهة الإبتعاث	الدرجه	التخصص	السجل المدني
ايمن عاتق العمري	---	اخصائي	تمريض	١٠٩٠٢٥٨٨٩
عنوان البحث				
Improving patient experience in a hematology and oncology day in Medina , Saudi Arabia				

سعادة / رئيس وحدة امراض الدم و الاورام بالمستشفى المكرم

تحية طيبة و بعد

لحيط سعادتكم علما بأن الموضح هويته بماليه قد استوفى كافة المستندات المطلوبة لإجراء البحث الخاص به وقد تمت مراجعتها من قبل إدارة البحوث والدراسات ولجنة اخلاقيات البحث العلمي بمنطقة المدينة المنورة.

برقم (H-1442-136-2021-IRB) وتاريخ (28-07-2021) وعلى ذلك تمت الموافقه على تسهيل إجراء البحث في مستشفى الملك فهد لنا:

نأمل من سعادتكم بعد الاطلاع التكرم بتوجيه المختصين حيال تسهيل مهمتهو الفريق البحثي المكون من : علي محمد العزي ١٠٣٠٨٢٤٦٢٥ – فاطمة رشيد الجهني ١٠٦٥٥٤٢٧٥٣ – مايسة فتحي حسنين ٢٢٢٧٣٦٤٠٨٦ و ذلك لجمع البيانات اللازمة بما يضمن ان لايكون هناك تاثير على خدمة المراجعين خلال قيامه بمهام بحثه

اشكر لكم جهودكم و تعاونكم

و تقبلو خالص تحياتي ..

رئيس الشؤن الاكادمية والتدريب والممثل النظامي للتدريب

د/ منصور الحربي
إستشاري امراض السكري