

Improving Cancer Patients Satisfaction with Treatment Process: A Pilot Interventional Approach in a Tertiary Care Hospital in Karachi, Pakistan

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ABSTRACT

Background and Objective: Chemotherapy is one of the treatments of choice worldwide to combat cancer. The complex nature of chemotherapeutic agents results in multiple physiological and psychological issues and if the patient and their caregivers (family) are unaware of these effects, poses additional stress which may result in patient dissatisfaction. This pilot project aimed to provide patients'/families' awareness regarding the process of treatment and subsequently to improve their satisfaction level.

Methods: This academic project is a mandatory assignment of clinical practicum course (for the degree of Masters in Nursing Sciences, Aga Khan University School of Nursing & Midwifery. An interventional design was employed for this study. A total of 30 cancer patients, that is 15 in the intervention group and 15 as controls were recruited. The project was initiated as an academic requirement (started in Jan 2015) and last for four months (Apr 2015). Patients planned for their first chemotherapy cycle were selected in both groups. A self-developed questionnaire was used to assess the patient satisfaction level regarding the chemotherapy process before and after the standardized and video-based educational intervention. An independent T-test was used to analyze the data.

Results: The overall mean score of patient satisfaction level after the intervention was 18.80; whereas, it was 11.93 for another group. The patient's mean satisfaction level was higher for the intervention group.

Conclusion: This study indicates video-based intervention for pre-chemotherapy teaching as an effective educational mode to assist patients throughout the treatment process. It can also facilitate in reducing treatment-related stressors and enhance patients' satisfaction levels.

Keywords: chemotherapy, patient satisfaction, quality of life, patient education, video mode.

INTRODUCTION

The burden of non-communicable diseases is escalating worldwide with its devastating effects on an individual's wellbeing. Malignant diseases come under those conditions which unfortunately have embedded their roots both in the developed and developing countries. The distressing nature of the disease does not only impact a person's health but also impairs the overall quality of life (QOL). Treatment modalities are available to control the spread of disease and assume to increase the life expectancy of patients. Often, patients receive chemotherapy as the basic treatment of choice to combat cancer. The intense and complex nature of chemotherapeutic agents and their requirements (in terms of continuity of treatment/cycles) results in multiple adverse effects [1]. These side effects produce enormous physical and emotional distress in cancer patients which ultimately influence their level of satisfaction with the course of treatment [2-4]. Patient satisfaction is considered a core component in the overall treatment journey and it is one of the quality assessment criteria's in organizations worldwide. In addition to this, it also

affects patients' clinical outcomes, patient influx and overall institutional status in the health care setting.

It has been seen that when cancer patients and accompanied caregivers come for their chemotherapy treatment are worried due to the complex treatment process and drug-related side effects [5]. They have several queries and questions arising in their minds [6]. Moreover, this usually happens at the initial phase when major decisions need to be taken regarding the treatment process. Literature suggests that early patient education enhances comfort and satisfaction level throughout the treatment duration. Customarily, patient education is the responsibility of nurses. However, in our Pakistani context where time is a major constrain due to the increasing number of cancer patients in contrast with the number of nurses, quality patient education is not a surety.

It is not always possible for nurses to provide proper time for guidance and treatment-related patient education which results in dissatisfaction [7]. Patients and families also approach different websites and TV shows which focuses only generic information which is not always helpful with all clients situation. Eventually, misguides patients and their families. It further worsens their therapy-related anxieties and rises to another issue of non-compliance with the treatment [7-11]. Standard

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written informational pamphlets are utilized for patient teaching which includes chemotherapy side effects and administration process. Written material is not always sufficient and applicable to all the customers. Multiple factors like learning style, medium of instructions and readability of clients, etc. make it more difficult for the patients and their families to deal with the situation [12]. Alternative means of patient education strategies need to be employed for effective preparation of patients and their families to deal with the treatment process.

One of the observations in our clinical setup is that when cancer patients come for their first treatment cycle they were mostly unaware of the hospital structure. Factors like difficulty in locating the buildings, contacting the required services and long waiting hours for appointments were few non-clinical elements experienced by these patients and families. Particularly, these all waste patients' time as well as impose extra physical pain, stress and eventually impacts the patient satisfaction level [11]. In the recent era, patient satisfaction is the primary indicator for the assessment of quality care provided by the health care professionals in any organization [13, 14]. It facilitates in improving patient care delivery system and simultaneously values for institutional accreditations.

To overcome both the issues of quality patient education and awareness of infrastructure results in patient dissatisfaction, an educational video was made.

This video intent to answer queries related to the chemotherapy treatment in our context. Moreover, it also demonstrates steps as an orientation guide for patients and families, so that they can easily locate desire departments on their first arrival. The video aimed to raise awareness about chemotherapy's effects and its administration process among cancer patients coming to our setting. In addition to this, it will potentially lessen patient misconceptions, worries regarding chemotherapy treatment and enhance satisfaction level [15]. Literature also supports the effectiveness of visual learning; however, limited resources in the Pakistani health care system made it difficult to apply. Considering all these aspects, this academic project aimed to evaluate the satisfaction level among cancer patients utilizing a pre-chemotherapy video-assisted patient education program. The satisfaction level among cancer patients is related to the knowledge and process involved in chemotherapy treatment. So far in Pakistan, none of the studies is conducted in this area, therefore; this piece of work may help other institutes in enhancing cancer patient awareness about chemotherapy treatment and administrative formalities relevant to their context. This project hypothesized that patient who was given video-based chemotherapy education demonstrates high satisfaction levels as compared to those received standard teaching material only.

METHODS

Ethical Review Process:

This academic project is a mandatory assignment of

clinical practicum course (for the degree of Masters in Nursing Sciences, Aga Khan University School of Nursing & Midwifery, therefore, official permission was not required and the preceptor was facilitating as a lead person for administration issues, departmental permission was taken). Also, this academic project was for a very limited time *i.e.* two months only; therefore, it would not be possible to run a complete ethical review process. Moreover, to keep the process fair, the mentor for this (Dr. Adnan Abdul Jabbar, Medical oncologist and section head oncology medicine section, AKUH) has granted permission to collect data from his patients who were recruited from his routine clinics. In addition to this, we have taken consent from all the participants involved in this pilot project.

Study Design and Sampling Strategy:

An interventional design that is randomized control trial with two groups (interventional and control) was utilized in the current study. Participants were recruited using a consecutive sampling strategy from the oncology daycare clinic of a tertiary care hospital in Karachi, Pakistan. The clinics accommodate patients from various ethnic, educational and social backgrounds. Therefore, the data generated from these populations would be of diverse nature.

Eligibility Criteria:

Eligible participants were approached via clinics nurses. Participants willing to participate were recruited after explaining the project purpose, procedure and all potential risks and benefits. Participants were selected on the following criteria (a) all cancer patients aged 19 years and above (regardless of cancer site) (b) cancer patients who have the awareness about their diagnosis (checked through patient file or family member) (c) cancer patients who planned for their first chemotherapy cycle (in the coming weeks) (d) cancer patients who could understand and speak English or Urdu language. Patients who were (a) known case of psychiatric illness (b) not fully conscious (low scores of Glasgow Coma Scale levels) (c) not willing to participate in the study were excluded from the study.

Data Collection Process:

Data was collected between January to April 2015 (allocated time for course project completion). Among several cancer patients who were visiting the oncology clinics, 36 patients were found eligible for the study project in the given time frame. Among those 30 patients agreed to participate in the study. Thus, fifteen participants were randomly assigned to the standard education (group A) and video-based education groups (group B), respectively. Patient appointment sheets were reviewed on daily basis ten minutes earlier before the clinic starts. Patients who came for the follow-up visits (oncologist visit before their first cycle of chemotherapy) were randomly assigned to one of the groups (for example, if three eligible patients were there each one is assigned through paper balloting in either group).

Written informed consent was signed by all individuals participating in this study. As this project is an academic degree requirement ethical review committee was not required; however, approval from the departmental head was taken before starting up the project. Facilitation was provided by the course preceptor (medical oncologist) on every single step of the project.

Standard Written Pre-chemo Education:

As soon as the patient planned for the first cycle of therapy, pre-chemotherapy education was given by any member of the nursing team. The written material explains the chemotherapy administration process commencing from admission till discharge. Further, it includes chemotherapy side effects such as nausea/vomiting, diarrhea, neutropenia, fever, oral sores and their management, special instructions regarding food and fluid consumption during chemotherapy, alarming signs and contact numbers in the case of an emergency.

Video-based Pre-chemotherapy Education:

This educational video was developed to help cancer patients in order to access correct information regarding chemotherapy treatment and its actual process in the current project setting. A thorough assessment was done before developing the video. Cancer patients who were already in their treatment phase were randomly approached (after telling the purpose of a project and taking verbal consent) and asked for their experience about their initial chemotherapy cycle. Several responses were given by the patients and all the similar queries (named as frequently asked questions) were assembled under one heading. Following this, we categorized all responses into six main categories (1) admission process (2) financial assistance (3) chemotherapy drugs side effects (4) nutrition (5) activity (6) discharge & follow-ups. Based on the data identified, negotiations were made with the team of content experts (medical oncologists). Different authentic literature/websites were scrutinized together with the help of oncologists and expert ideas were employed before finalizing the content of the video. Amendments were made back and forth according to the feedback provided by the group of oncologists. After finalizing the content a tentative video draft was carried out. The video consists of two parts. The first section is an orientation phase displaying the process from admission till discharge which includes how to get an admission, approach to laboratory tests, what will happen once admission is done, administration of chemo drugs and discharge process. This systematic approach potentially guides patients/families for the first day of therapy. The second section comprised of "frequently asked questions (FAQs)". The most common questions were gathered and answered by a team of experts (medical oncologists). The intention of clarifying these patient probes was to lessen the treatment-related fears and increase their satisfaction level. The answers for FAQs were authentic and validated. Moreover, they were taken and confirmed by reliable

agencies such as The National Institute Cancer (NIH), The American Cancer Society, *etc.* The first draft was shared with the experts and editing was done based on their feedback. The edited draft was shared again and upon their approval, it was shown to the selected project participants. This visual mode of intervention was unique in itself because it captures the specific process and familiarization from the environment prior to chemotherapy transfusion. Moreover, the queries were answered by department medical oncologists who were treating these participants. Hence, both these aspects were designed to satisfy cancer patients within their whole treatment journey.

Implementation of Intervention:

After completion of educational material (video) the intervention was planned to implement in the out-patient oncology clinics. Patients were approached with the help of clinic nurses and they were earlier informed about the project work. Patients intended for chemotherapy treatment were captured as soon as their consultation completes with the doctor. Once the educational video showed to the patient/family, they were invited to ask questions if any and were entertained at the same time. Furthermore, a checklist was developed which contained line-wise steps regarding what needs to be done before and on the day of chemotherapy administration. The purpose of this specification is to reinforce the steps shown in the movie. Patients were requested to go accordingly with the mentioned steps and check each task done and move towards the other.

The other group was given the standardized teaching material by the nursing team. Both the groups were assessed for satisfaction level on the day of their second chemotherapy cycle. A self-developed questionnaire was used to collect the post-intervention data. The questionnaire was developed in English (as per the university course project requirement) and its translation was also done in Urdu language and again translated into the English language for accuracy. It was comprised of 20 questions categorized into six main categories such as (1) admission process (2) financial assistance (3) chemotherapy drugs side effects (4) nutrition (5) activity (6) discharge & follow-ups. Each category has two to three related questions and is measured on five-point Likert scale (1 = below average, 2 = average, 3 = between average & good, 4 = good, 5= very good). These categories were extracted out through observation and literature review. The questionnaire score ranges from 0-100 and the higher the score, the better the satisfaction level. This questionnaire was applied through the interview. The questionnaire was validated by the group of experts (consist of medical oncologists and specialist nurses) before administering it to the patients. The content validity index for the tool was 0.84 for both relevance and clarity. The value of the reliability coefficient (Cronbach's alpha) for the total scale was found to be 0.88.

For data analysis, a statistical package for social sciences (SPSS) version 19 was used. Means and standard deviations were carried out for normally distributed continuous variables and proportions were taken for categorical variables. Independent samples t-test was used to identify the mean difference among satisfaction levels of both the groups.

RESULTS

Demographic and Clinical Characteristics:

Overall, 30 cancer patients participated in this study. 70% of the participants were females in both groups. The mean age of the participants was 48 years respectively. The majority of the patients were married (90%). Most of the participants were educated up to the level of intermediate (40%), others were graduates and matriculate passed. Almost all patients (90%) except a few (10%) were managing their treatment expenses by their own pockets. Out of thirty

patients, only (17%) patients were self-employed and others were dependent on their families (Table 1).

Half (50%) of the individuals were diagnosed with breast cancer followed by abdominal and ovarian carcinomas.

Table 1: Demographic profile of cancer patients.

Characteristics	Group A (Standard Education) (n=15)	Group B (Video) (n=15)
Gender		
Male	5 (33.3)	4 (26.6)
Female	10 (66.6)	11(73.3)
Age		
19-35 years	3 (20)	2 (13.3)
36-50 years	4 (26.6)	5 (33.3)
51-65 years	8 (53.3)	5 (33.3)
>65 years	0	3 (20)
Marital Status		
Married	14 (93.3)	13 (86.6)
Unmarried Separated/Divorced /Widowed	1 (6.6)	2 (13.3)
Educational Status		
Below primary	0	3 (20)
Primary	2 (13.3)	0
Matric	2 (13.3)	3 (20)
Intermediate	7 (46.6)	5 (33.3)
Graduation and above	3 (20)	4 (26.6)
Occupational Status		
Employed	3 (20)	2 (13.3)
Unemployed	12 (80)	13 (86.6)
Financing of Chemotherapy Cost		
Self-financed	13 (86.6)	14 (93.3)
Sponsored	0	1 (6.6)
Donors	2 (13.3)	0

Values are n (%).

Neo-adjuvant chemotherapy type is the most common (73%) in the target population. Spouses (50%) and Friends (34%) were recognized as the major support system for these patients. In response to the question of referring to other sources for chemotherapy information, all participants (100%) agreed that at some point in time during the planning phase they opt for various sources (books, websites & new paper articles, etc) to clarify treatment related queries (Table 2).

Table 2: Clinical characteristics of cancer patients.

Characteristics	Group A (Standard Education) (n=15)	Group B (Video) (n=15)
Cancer Type		
Breast	7 (46.6)	8 (53.3)
Ovarian	3 (20)	1 (6.6)
Colon/rectum	4 (26.6)	2 (13.3)
Head and Neck	0	3 (20)
Others	1(6.6)	1 (6.6)
Type of Chemotherapy		
Neo-Adjuvant	10 (66.6)	12 (80)
Adjuvant	5 (33.3)	3 (20)
Referred Other Sources		
Yes	15 (100)	15 (100)
No	0	0
Support System		
Spouse	4 (26.6)	3(20)
Parents	1 (6.6)	2 (13.3)
Friends	8 (53.3)	10 (66.6)
Others	2 (13.3)	0

Values are n (%)

Patient Satisfaction Level and Video-Assisted Education Intervention:

Participants in the interventional group who received pre-chemotherapy education through video mode compared to the group given education through standard mode, demonstrated a significantly better mean satisfaction level among both the groups. The mean difference found was 18.80 for the interventional group; whereas, it was 11.93 for the control group. The 15 participants who received the video-based intervention compared to the 15 participants in the control group demonstrated significantly improved satisfaction level scores, t (10.64), p (<0.001). Thus, it proves the initial project hypothesis that patients who were given video-based chemotherapy education demonstrate high satisfaction levels as compared to those who received standard teaching material only (Table 3).

Table 3: Mean satisfaction level using independent sample t-test.

Intervention	n	Mean	SD
Standard education	15	11.93	2.01
Video education	15	18.8	1.47

DISCUSSION

Treatment options for oncology diseases are limited. Unfortunately, despite new technologies and advancements in the recent era, no definite cure is found yet to battle these diseases with medical treatments. The Patients and their families were in a high anxiety state when planned for these treatment modalities. Therefore, patient/family education is an extremely vital component to consider.

Educational material and the way they are delivered play an immense role in reducing treatment-related worries and enhance patients' satisfaction. With the modest inventions and increase accessibility to electronic media visual learning seems to be the most understandable and reliable form of information retention. Accurate knowledge empowers patients in managing their symptoms when going through the critical phase of chemotherapy.

Our study reported a significant mean difference of 18.80 in the satisfaction level of the intervention group. This signifies the importance of the visual mode of learning in patient teachings. Consistent with other studies conducted on breast and colorectal cancer patients, the researchers compared video educational programs with the standard mode of patient education (verbal and written). They also reported a higher satisfaction level of 83.33% for video teaching versus 10% satisfaction with the written material. In addition to this, patients in the intervention group were able to recall and report treatment-associated medical problems more frequently than those who received standard teaching mode [16].

Another study conducted in a cancer center located in the USA added visual educational material for cancer patients to their standard ways of teaching. The primary objective was to assess the effectiveness of an eleven-minute DVD. They stated that the inclusion of video in pre-chemotherapy teaching has enhanced patients' satisfaction and it also enables patients to manage their symptoms more precisely. Moreover, it also facilitates reducing the fear of treatment [17].

A thorough literature review was conducted to assess the usefulness of different modes of pre-chemotherapy education. Sixteen articles were reviewed by the authors, out of which four have suggested that video intervention was very useful in that particular group than other traditional modes of teachings (audiotapes, group teachings & written material, etc) [18]. On the other hand, a systemic review (nine studies) revealed no such benefit for multimedia devices on patients' anxiety or depression levels. This is probably due to the diagnosis in the later stages of the disease [19].

Participants in our control group discouraged the standard written and verbal instructions as most of the participants were not above matriculation. Hence knowledge retention would be a great problem for

them. Similarly in a systemic review, verbal teachings and discussions were considered as the least effective teaching strategy whereas illustrations in terms of videos or some other computer technology seem to have a positive impact on patient's anxiety and satisfaction level. Other studies conducted on cancer patients also recommended the use of different teaching modalities rather than relying on anyone option specifically [20].

Another study conducted in Iran explored the knowledge and practices for chemotherapy complications. Based on their results, researchers recommended that clear quality and understandable manuals with pictures or simple movies explaining chemotherapy and its related concerns need to be part of this therapy process. Moreover, they also emphasized that this education must be done by nurses, as in their study only 18% of the patients were receiving knowledge from nurses whereas the rest of the subjects (82%) were obtaining it from different other resources (sample size: 40) [21].

At the time of evaluation, the majority of the participants in the intervention group considered video mode as helping in the management of many of the therapy-related side effects without making the situation panic. In line with this finding, a study conducted in the United States also used a DVD-based approach in order to educate people to overcome chemotherapy-related side effects. They also concluded that most of the people felt empowered in dealing with chemotherapy adverse effects [22-24].

LIMITATIONS

This current academic project has certain limitations which need to be considered. Patients were recruited from a single private health care setting, therefore; the findings of the study have limited generalizability and are applicable only to similar settings. In our project, the sample size was small which may have affected the findings of this study. As this was a course project which needs to be completed within time (two months); therefore, a lesser number of participants were recruited in the given time frame. Keeping in mind the time limitation for this project, only a quantitative design was employed in this study. However, subjective feelings and comments from patients could have given a better understanding of the concept of satisfaction in cancer patients receiving chemotherapy for the first time.

CONCLUSION AND RECOMMENDATIONS

This current project indicates that the inclusion of an educational video to standard chemotherapy education significantly improves the patients' satisfaction level and worth in eliminating chemotherapy-related myths.

In order to improve and maintain patient satisfaction level continuous amendments and suggested ideas for video intervention (at the institutional capacity) needs to be incorporated. A small CD of this video could be given to patients/families planned for chemotherapy prior and

instruct them to write their queries. These queries will be responded to in the upcoming clinic visit by doctors and nurses respectively. Moreover, patients can also appreciate their feedbacks.

SUSTAINABILITY

Patient family education is an important aspect in reducing their fears and treatment-related anxieties. Therefore, constant application of this educational video intervention is essential. Continuation of this program is ensured with the help of nurses. They were told to teach patients, plan for their initial chemotherapy treatment by utilizing this educational video. For this purpose, video is installed on different computers in the oncology clinics. This will ultimately save their time as they could show it immediately after doctor consultation and entertain patients' queries.

ETHICS APPROVAL

This academic project is a mandatory assignment of clinical practicum course (for the degree of Masters in Nursing Sciences, Aga Khan University School of Nursing & Midwifery, therefore, official permission was not required and the preceptor was facilitating as a lead person for administration issues, departmental permission was taken).

CONSENT FOR PUBLICATION

Approval for publication of data (maintaining all anonymity) was taken at the time of signing of a consent form.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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