Original Article

Perceived Well-Being, Social Support, and Self-Management Behavior among Women Experiencing Chemotherapy-Related Nausea and Vomiting in A Tertiary Hospital in Lahore, Pakistan

Muqaddas Sarwar[1], Rita Ramos[2], Rehana Elahi[1], Muhammad Yousaf[1], Farhana Badar[1], Muahammad Abu Baka[1]

[1]Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan, [2]Chemotherapy Unit, University of the Philippines Open University, The Philippines

Corresponding Author: Muqaddas Sarwar, RN, RM, DION, Post RN BScN, MAN

Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan

Tel: +923074548015; Fax: +924235945198

E-mail: mahdho@gmail.com

Received: June 10, 2019, Accepted: January 26, 2020, Published: March 30, 2020

ABSTRACT

Objective: The basic objective is to determine the level of the self-management behaviors (SMB), perceived well-being, and social support of patients in the outpatient settings at tertiary care hospital at Lahore Pakistan. It also explores if there is any significant relationship among all three variables. **Methods:** A descriptive-correlational study design has been used. The data have been collected at single setting of 32-bedded chemotherapy unit of a tertiary care hospital of Pakistan. The purposive sampling method has been employed. The IBM SPSS version 20 (IBM Corp., Armonk, NY, USA) has been utilized for statistical analyses. **Results:** A total of 317 patients' data were analyzed. The average age of patients was 42 years, and they received chemotherapy for different cancers. It was revealed that the SMB, for example, taking anti-emetics on time, and applying physical and cognitive distractions, have strong association with psychological, social, physical, and emotional dimensions of the perceived well-being. Similar self-managing strategies have associations with the provision of social support from the health-care team, personal, and family side. **Conclusions:** To conclude, the most common self-care methods

Access this article online

Quick Response Code:

Website: www.apjon.org

DOI: 10.4103/apjon.apjon_7_20

Cite this article as: Sarwar M, Ramos R, Elahi R, Yousaf M, Badar F, Baka MA. Perceived Well-Being, Social Support, and Self-Management Behavior among Women Experiencing Chemotherapy-Related Nausea and Vomiting in A Tertiary Hospital in Lahore, Pakistan. Asia Pac J Oncol Nurs 2020;7:209-17.

of women receiving chemo are pharmacological management, applying physical and cognitive distraction, executing relaxation measures to control chemo-induced nausea.

Key words: Perceived well-being, self-management behaviors, social support

Introduction

Chemotherapy is an important cancer treatment modality which is used to treat different types of cancers, but it does have side effects.[1,2] According to the study findings,[3] nausea and vomiting are the one of the most feared symptoms among other chemo side effects. Despite having advances in antiemetics, unmanaged nausea and vomiting is still significantly diminishing the patients' quality of life.[4,5] As feeling of nausea and vomiting is subjective and complex in nature, it requires patients' involvement in managing it. Especially the patients, who receive their chemo at outpatient setting, cannot expect readily available support of expert professionals at home in Pakistan as there is no such health-care services available. Although there are female health visitors who visit to home for some community health-related issues such as dengue preventions and administration of oral polio vaccination to children, they are not supposed to address post-chemo side effects complaints as they are not trained for it. There are some patient-related factors as well which affect person abilities to get and use necessary skills and knowledge to manage themselves such as patients' educational level, their level of perceived well-being, the availability of social support, their financial status, and other demographics.

Problem statement

Although there are studies available about self-management strategies adopted by patient in different chronic diseases, there is not any significant study reported on national level. Therefore, the first purpose of the present study is to add something in the body of knowledge regarding self-management behaviors (SMB) of female Pakistani cancer patients especially what they adopt to deal with treatment-related nausea and vomiting by investigating it in detail. Second, this study will investigate the relationships between the SMB and other individual factors as types of chemo, disease, their chemo protocols, past chemo-related experience, and some individual factors. These factors include patient age, education their perceived well-being, and some environmental factors such as the area of residence, the location of chemotherapy, and social support system at home.

Research questions

Keeping in view the above-mentioned questions among the sample of Pakistani cancer patients, this research purposefully answers the following questions:

1. What is the level of SMB of patients post chemo?
2. Is there a significant relationship between SMB and the following variables?
   A. Perceived Well-being
   B. Social Support.

Conceptual framework

Cancer symptoms management framework had already been used[6,7] in multiple studies related to chronic diseases such as cancer, diabetes, and musculoskeletal diseases. This framework provides a better explanation of key factors affecting SMB of patients and families.[8] There are number of factors which affect the cancer patients' SMB such as personal/individual factors, environmental factors, and health status. In the present study, age, educational background, current employment status, marital status, perceived well-being, patients' routine dietary habits, and SMB are considered as person-related factors. The particular chemotherapy drugs and the number of cycles they are receiving are important. Their experience of having nausea and vomiting are considered as the health status of the patient. Some other factors, for example, the location of chemotherapy drugs administration, social support, and area of residence, are the environmental factors in the present study. Its relation with common SMB in the context of their available social support and perceived well-being is also studied in the present study [Figure 1].

Methods

Study specific objectives

This study aimed to determine the level of SMB, perceived well-being and social support, and it explores if there is any significant relationship between SMB and perceived well-being, social support, and chemo-induced nausea and vomiting. This study is limited to adult patients at the Chemotherapy Unit of Shaukat Khanum Hospital Lahore, Pakistan.

Inclusion and exclusion criteria

The criteria for inclusion were planned to take female patients only diagnosed with any type of cancer at any disease stage, age of 18–65 years. Having received any cycle of chemotherapy, patients should have the ability to respond the questionnaire independently/with the help of attendant or translator, to understand and communicate

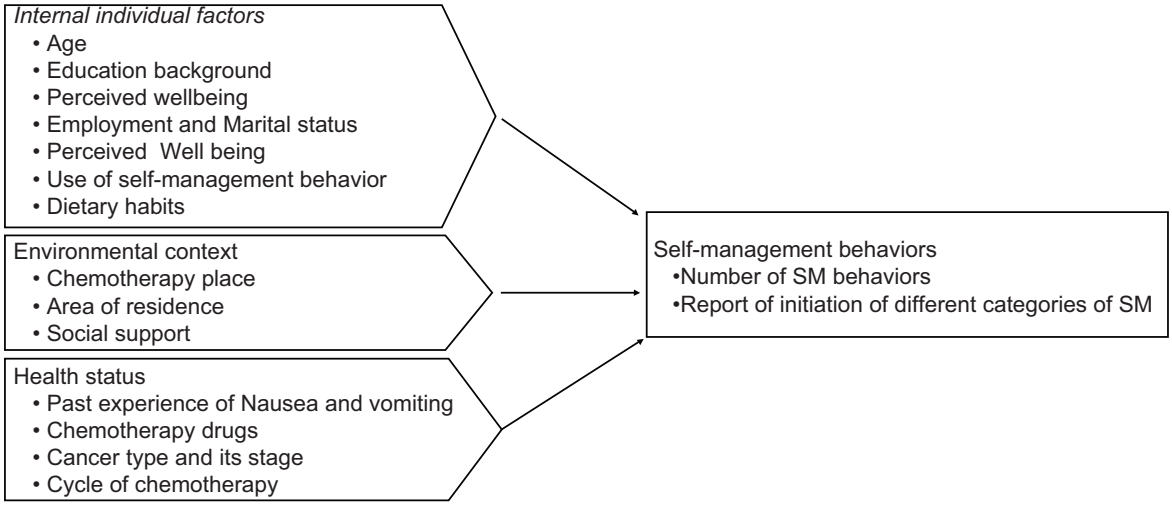

Figure 1: Conceptual framework

well and physical and mental coherence at the time of interaction and thought-to-be competence in the opinion of treating team.

The patients, physically or mentally disabled or receiving or having received chemotherapy at some other hospital/health-care agency were excluded. Noncancer patients for blood transfusion or immunoglobulin therapies or intra ethical chemotherapy were also exempted. To add, the inpatient patients were also spared.

Study design

Descriptive-correlation study design has been used.

Sampling techniques

The study utilized purposive sampling method in the determination of its sample count from the target population.

Sampling size and research setting

The data collection of the research has been taken in only from a specialized cancer hospital (Shaukat Khanum Cancer Hospital and Research Center) located at Lahore, the major city of Pakistan. Every month, on average, 4000 patients receive chemotherapy at chemo bay department. Of these, 3000 are adults and in these patients, 60% are female, on average. That makes it 1800 female patients in a month. With a population size of 1800, a confidence level of 95% and a margin of error of 5%, the sample size needed to conduct the study was 317. If 25% of these patients refuse to participate in the study (as an estimate), a total of 425 patients was needed for the study. Therefore, the suggested sample size was 425 patients. Patients are screened for potential participation by reviewing electronic medical records (chemotherapy).

Research instruments

A demographic and medical information sheet was developed and used. It included items that assess age, gender, education, employment status; area of residence, language, onset of nausea and vomiting, number of completed chemotherapy cycles, and cancer type and stage.

The Multinational Association Supportive Care in Cancer (MASCC) antiemetics tool was used which was developed by MASCC for the assessment of nausea and vomiting.

This free accessed tool suggested a sensitive scale to collect information regarding chemo-induced nausea and vomiting.[9] This instrument includes nine subscales specific to reported nausea and vomiting. The translation and back translation of this tool into the Urdu language has been done as per guidelines available on the MASCC website and its equivalence with English has been ensured.

A semi-structured questionnaire called The Chronic Illness Resources Survey (CIRS) has been used for patients to elicit Pakistani culture, specific social support from persons, neighboring community, and media overall. CIRS has already been used by different studies to elicit the social support during their illness. Likert scale 1–6 was used as 1 score means strongly disagree and 6 were strongly agreed.[10]

This questionnaire perceived well-being scale was adopted for understanding the perceived well-being of patients under this study. It was also a Likert scale with 1–6 scores, 1 means strongly disagreed, and 6 means strongly agreed. Its validity was already verified by different sources.[11]

The modified instrument of SMB has been used to investigate common SMB of Pakistani patients.[12] This scale has 0–100 score and patients were asked to mark score as per their use of specific inventions as home management.

Depending on the response of the patient, responses have been rated as categorized already, for example, 0–40 (can do sometimes), up to 70 (moderately, can do), and >70–100 (highly certain, can do).

Ethical approval

Ethical approval was granted by Ethical Review Board of Shaukat Khanum Hospital Lahore Pakistan. The written and orally informed consent was obtained from all eligible participants.

The introduction of the tools does not carry any actions that pose threat to the health, welfare, and being of all concerned. This study has been intended to make a positive contribution toward patient care. Throughout the study, the rights and dignity of its participants and target populace have been respected and protected. The consent process ensured that individuals voluntarily participated in the research with full knowledge of the study's purpose, scope, risks, and benefits. Nonparticipation of patients in this study never altered the care that they were receiving. To protect the confidentially of participants the identity of the participants was not disclosed and data handling and storage was kept well-protected as per policy.

Data collection

The following steps have been taken for data collection.

Phase 1: Gaining entry. A formal letter requesting evaluation of the research manuscript had already been sent to the scientific review committee, departmental head, and superiors of the Chemotherapy Department of Shaukat Khanum Memorial Cancer Hospital and Research Centre. The approval of the research methodology was again followed up in later months.

Phase 2: Pretesting. After the approval of the Head of Department and institute review board, Pre-testing has been done to evaluate the construct and comparability of the Urdu translation of tools. The tools have been administered to selected patients non inclusive to a certain set of criteria of the study. Above-mentioned participants of the pretest were invited for in-depth remarks about the tools. No major alteration was required at that point.

Phase 3: Identification and screening. The researcher checked the patients' records in the hospital to verify the inclusion criteria of the study. Initial interview and establishment of rapport were done to check the patient for other potential concerns such as the ability to read, write, and understand the research language.

Phase 4: Informed consent. Sample respondents, who qualified in the study's inclusion criteria, were provided written consent. Included in the mutual agreement, there was the introduction of the research employer, purpose, and timing of the study; and responsibilities of both parties. Sample respondents were assured that the data provided would remain confidential.

Phase 5: Data collection. Self-administered structured questionnaires were used to collect data.

Results

The data have been described in the form of percentage, means, and standard deviation (SD) for all variables. Moreover, results answer the research questions regarding sociodemographic factors and level of patient SMB, social support, and perceived well-being. It further explains the SMB association with perceived well-being and social support.

The data analysis has been calculated with IBM Statistical Software Package for Social Scientists version 20 IBM Corp., Armonk, NY, USA. Mean ± SD were employed to summarize quantitative data, whereas frequencies and percentages were used to organize qualitative data. The association of SMB in relation to perceived well-being parameters was determined by Chi-square with $P < 0.05$ were taken as statistical significance.

The demographic details in Table 1 illustrate that there are number of women 85 (26.8%) who are uneducated and very few women 28 (8.8%) have reached to masters level education. The majority of them was married 276 (87.1%) and has children 269 (84.9%). Large number of patients belonged to major province, Punjab 249 (78.5%) and many of them have Punjabi as their mother tongue. Daily use of cooked vegetables was reported majorly 162 (51.1%) by patients. A major proportion 266 (83.9%) of women were not working. Many patients 242 (76.3%) had women cancer including breast cancer and gynecological cancers. The majority of patients came for Taxol group chemotherapy 90 (28.4%) followed by women who came to receive AC and AC dose dens 78 (24.6%) chemotherapy.

The self-management techniques tool was used to measure SMB of patients to control chemotherapy-induced nausea and vomiting on 18 different parameters. The data were analyzed and grouped it as per its type of questions, for example, pharmacological management, dietary measures, and physical and cognitive distractions for the purpose to measure the correlation overall.

Table 2 shows that there is strong association established in pharmacological measure self-management behavior with psychological, emotional, social, and physical perceived well-being by $P = 0.01$, $P = 0.01$, $P = 0.02$, and $P = 0.01$, respectively. There is marginal association seen in spiritual and pharmacological management ($P = 0.06$) and no significant relationship between intellectual well-being and pharmacological well-being.

Table 3 defines that there is a strong relationship between self-management dietary measures and physical

Table 1: Sociodemographic characteristics of the participants (*n*=317)

Variables	*n* (%)
Age (years), mean±SD (range)	42.5±10.7 (18-65)
Education	
Uneducated	85 (26.8)
Primary	45 (14.2)
Middle	27 (8.5)
High school	65 (20.5)
Higher secondary	35 (10.1)
Bachelor	32 (10.1)
Masters	28 (8.8)
Marital status	
Unmarried	27 (8.5)
Married	276 (87.1)
Divorced	4 (1.3)
Widows	10 (3.2)
Having children	
Yes	269 (84.9)
No	48 (15.1)
Language	
Punjabi	222 (70.0)
Pashto	38 (12.0)
Urdu	28 (8.8)
Other language; Suraki or Hindko	29 (9.1)
Area of residence	
KPK	49 (15.5)
Punjab	249 (78.5)
Sind	4 (1.3)
Afghanistan	8 (2.5)
Baluchistan	4 (1.3)
AJK	3 (0.9)
Most frequent use in diet	
Meat	36 (11.4)
Vegetable	162 (51.1)
Milk	82 (25.9)
Curd	9 (2.8)
All items	28 (8.8)
Employment	
Un-employed	266 (83.9)
Working but on leaves	13 (4.1)
Part-time	12 (3.8)
Full-time	25 (7.9)
Diagnosis	
Gastrointestinal cancers	33 (10.4)
Women cancers	242 (76.3)
Lymphomas	31 (9.7)
Head and neck cancers	6 (2.0)
Lung cancer	3 (1.0)
Neurological tumor	1 (0.3)
Ewing sarcoma	1 (0.3)
Chemotherapy	
Taxol	90 (28.4)
AC and AC dose dens	78 (24.6)
ABVD	19 (6.0)
Carboplatine + paclitaxol	27 (8.5)
Carboplatine gemcitabin	9 (2.8)
CTD	4 (1.3)
EOX	4 (1.3)
FAC	6 (1.9)
CAPOX	6 (1.9)
Herceptin	11 (3.5)
TC	14 (4.4)
Miscellaneous	49 (11.4)

Contd...

Table 1: Contd...

SD: Standard deviation; KPK: Khyber Pakhtunkhwa; AJK: Azad Jammu Kashmir; AC: Adriamycin Cyclophosphamide; ABVD: Adrimycine; Bluemeycine, Vincristine, Dacarbazine; CTD: Cyclophosphamide Thalidomide Dexamethasone; EOX: Epirubicine Oxaliplatin Xeloda; FAC: Fluorouracil Adriamycin Cyclophosphamide; CAPOX: Capecitabine plus Oxaliplatin; TC: Taxol Cyclophosphamide

Table 2: Relationship between pharmacological management and perceived well being

Variables	Up to 70 (*n*=40; 12.6%), *n* (%)	Above 70 (*n*=277; 87.4%), *n* (%)	*P*
Psychological			
Low	18 (22.9)	61 (77.2)	0.01
High	22 (9.2)	216 (90.8)	
Emotional			
Low	20 (20.0)	80 (80.0)	0.01
High	20 (9.2)	197 (90.8)	
Social			
Low	14 (20.9)	53 (79.1)	0.02
High	26 (10.4)	224 (89.6)	
Physical			
Low	21 (20.0)	84 (80.0)	0.01
High	19 (8.6)	193 (91.4)	
Spiritual			
Low	15 (18.5)	66 (81.5)	0.06
High	25 (10.6)	211 (87.4)	
Intellectual			
Low	8 (17.0)	39 (83.0)	0.32
High	32 (11.9)	238 (88.1)	

perceived well-being (P = 0.04). However, there is no statistically significant relationship between emotional, social, psychological and spiritual (perceived well-being), and dietary management.

A significant relationship was established between self-management behavior relaxation and psychological, physical, and spiritual perceived well-being by having (P = 0.01) in all three parameters. There is a marginal relationship between emotional well-being and relaxation self-management by having P = 0.91. There is no statistical significant relationship between social and intellectual well-being with relaxation self-management.

There is a statistically significant relationship between self-management in physical activities with physical perceived well-being by having P = 0.04 [Table 4]. There is marginal significant relationship between psychological and spiritual (perceived well-being) and SMB with physical activity. However, there is no statistical relationship between

self-management physical and emotional, social, and intellectual well-being.

No any patient rated the social support related parameters up to 40% as all responses were >40 so association was measured with up to 70% and >70%, as shown in Table 5. The relationship between SMB and social support parameters has been measured. *P* value (0.002) has shown that there is a relationship between pharmacological (SMB) management and health-care team support. Furthermore, shown results indicate that family and relative support ($P = 0.026$) and personal support ($P = 0.026$) has statistical significant relationship with pharmacological SMB. There is no statistical relationship between pharmacological self-management and work and media support.

There is a statistical significant relationship among healthcare ($P = 0.042$) and family and friends support ($P = 0.004$) in SMB. There is significant relationship between family and friends ($P = -0.03$) and personnel related support ($P = -0.01$) and relaxation self-management techniques.

The data [Table 6] illustrates an overview of results. The perceived well-being of patients such as psychological, emotional, social and physical well-being have significant relationship with caring themselves by using regular anti-emetics (pharmacological help). However, having positive spiritual wellness has marginal association with adopting the doctor's instruction for taking medicine on time. Relaxation techniques, for example, watching TV, reading books, or listening holy verses chanting have significant relationship with psychological, physical, and spiritual well-being, whereas emotional well-being has marginal association with relaxation self-care methods. Very interestingly, dietary and relaxation self-measures have significant relationship with physical well-being only.

In the terms of social support and self-management activities, healthcare-related support, family and friends support and personal support has significant association with pharmacological measures. The data reveal that family and relative support and personal support has

Table 3: Relationship between dietary measures versus perceived well being

Variables	Up to 40 (*n*=20; 6.3%), *n* (%)	41-70 (*n*=74; 23.3%), *n* (%)	Above 70 (*n*=223; 70.4%), *n* (%)	*P*
Psychological				
Low	4 (5.1)	25 (31.6)	50 (63.3)	0.14
High	16 (6.7)	49 (20.6)	173 (72.7)	
Emotional				
Low	6 (6.0)	28 (28.0)	66 (66.0)	0.41
High	14 (6.5)	46 (21.2)	157 (72.3)	
Social				
Low	3 (4.5)	20 (29.8)	44 (65.7)	0.32
High	17 (6.8)	54 (21.6)	179 (71.6)	
Physical				
Low	4 (3.8)	33 (31.4)	68 (64.8)	0.04
High	16 (7.6)	41 (19.3)	155 (73.1)	
Spiritual				
Low	4 (4.9)	24 (29.6)	53 (65.5)	0.29
High	16 (6.8)	50 (21.2)	170 (72.0)	
Intellectual				
Low	1 (2.1)	13 (27.7)	33 (70.2)	0.32
High	19 (7.0)	61 (22.6)	190 (70.4)	

Table 4: Relationship between physical cognitive measures and perceived well being

Variables	Up to 40 (*n*=15; 4.7%), *n* (%)	41-70 (*n*=47; 14.8%), *n* (%)	Above 70 (*n*=255; 80.5%), *n* (%)	*P*
Psychological				
Low	4 (5.1)	18 (22.9)	57 (72.0)	0.07
High	11 (4.6)	29 (12.2)	198 (83.2)	
Emotional				
Low	5 (5.0)	21 (21.0)	74 (74.0)	0.10
High	10 (4.6)	26 (12.0)	181 (83.4)	
Social				
Low	4 (6.0)	15 (22.4)	48 (71.6)	0.11
High	11 (4.4)	32 (12.8)	207 (82.8)	
Physical				
Low	5 (4.8)	23 (22.0)	77 (73.2)	0.04
High	10 (4.7)	24 (11.3)	178 (84.0)	
Spiritual				
Low	4 (5.0)	18 (22.2)	59 (72.8)	0.09
High	11 (4.7)	29 (12.3)	196 (83.0)	
Intellectual				
Low	1 (2.1)	9 (19.2)	37 (78.7)	0.47
High	14 (5.2)	38 (14.1)	218 (80.7)	

Table 5: Relationship between pharmacological management and social support

Variables	Up to 70 (*n*=40; 12.6%), *n* (%)	Above 70 (*n*=277; 87.4%), *n* (%)	*P*
Healthcare team support			
Low	23 (20.5)	89 (79.5)	0.002
High	17 (8.3)	188 (91.7)	
Family and friends support			
Low	24 (17.6)	112 (82.4)	0.026
High	16 (8.8)	165 (91.2)	
Personal support			
Low	24 (17.5)	113 (82.5)	0.026
High	16 (8.9)	164 (91.1)	
Work place related support			
Low	3 (8.6)	32 (91.4)	0.59
High	37 (13.1)	245 (86.9)	
Media support			
Low	17 (10.3)	148 (89.7)	0.24
High	23 (15.1)	129 (84.9)	

Table 6: Correlational snapshot: perceived wellbeing & social support vs. SMB

Variables	Pharmacological self-management	Relaxation measures	Dietary management	Physical and cognitive distractions
Perceived wellbeing				
1. Psychological	$P=0.01$	$P=0.01$	Not significant	$P=0.07$
2. Emotional	$P=0.01$	$P=0.09$	Not significant	Not significant
3. Social	$P=0.02$	Not significant	Not significant	Not significant
4. Physical	$P=0.01$	$P=0.01$	$P=0.04$	$P=0.04$
5. Spiritual	$P=0.06$	$P=0.01$	Not significant	Not significant
6. Intellectual	Not significant	Not significant	Not significant	Not significant
Social support				
1. Physician and health care related Support	$P=0.02$	Not significant	$P=0.089$	Not significant
2. Family and Relatives support	$P=0.026$	$P=0.03$	Not significant	$P=0.004$
3. Personal Support	$P=0.026$	$P=0.01$	Not significant	$P=0.001$
4. Media and policy support	Not significant	Not significant	Not significant	Not significant
5. Workplace support	Not significant	Not significant	Not significant	Not significant

significant relationship with helping themselves with relaxation measures and adopting physical and cognitive distractions.

Discussion

The respondents of this study have established that they managed nausea and vomiting by following the instructions of nurses to take post chemo antiemetic regularly, lots of fluids, physical and cognitive distractions. Relaxation and regular prayers are their strengths to cope with post chemo side-effects of nausea and vomiting.

A cross-sectional study conducted by[7] on personal most effective method to relieve chemo-induced nausea vomiting (CINV) in Chinese patients also favored that modification in diet, taking anti-emetics and using distraction therapy is helpful.

Evidences[7] consistent with the results of the present study in which patient reported that using prescribed medication was helpful for preventing or minimizing chemo-induced nausea and vomiting. Research studies[13,14] supported the findings of having better perception of wellness and leads a person toward searching and adapting better self-management strategies for relieving the uncomfortable symptoms related to chronic illness itself and its treatment.[14] Shares the finding of her study regarding the relationship between perceived health state and psychological well-being and found that if one thinks higher self-health state, he may have more positive approach to others and their social well-being will also be good and their psychological, emotional well-being will be high.

The previous studies[15] on different patients reported that the use of music as relaxation therapy has association with sense of well-being across a range of contexts, but, in the present study, patients do not use music but using recitation of particular verses of holy Quran, watching TV or playing small games with children for relaxation and found it boosting their morale and had good effects on them,[16] a study on students through their Pilates classes, strengthen their psychological well-being through their perceived health state.

Similarly, SMB has a strong relationship with social support such as health-care team-related support, family and friends' support, self or personal support, workplace colleagues and from internet sites, for example, American Cancer Society and Chemo care etc.[17] reported that social support from family and friends facilitate chronically ill patients to enhance knowledge and skills to do goal setting, good expectation from treatment outcomes, dietary measures and decision-making. Many patients remained regular employees during their treatment and appreciated their colleagues' help in sharing of the workload. Almost every patient had strong family ties with their siblings, children and spouse and openly acknowledged their continued help and support during this crucial time of their life. In fact, many women shared having children, and it was equal to having motivation to live more and undergo each treatment cycle.[17]

The research study[16] also revealed that family role in case of sick family member is very crucial. Almost all patients in this study were accompanied with some of their family member all the time, especially close blood relations do not leave their relative alone, this thing were appreciated by patients.

Conclusion

Frequently used SMB by women to minimize the CINV were pharmacological management, taking lots of fluids, applying physical and cognitive distraction, and do relaxation by offering regular prayers. SMB for instance, pharmacological, physical and cognitive distraction and relaxations have strong association with psychological, physical, social, spiritual, and emotional well-being. Same SMB have significant relationship with

social support parameters as healthcare team, family and friends and personal support and work and media support.

Practical implications

The present study is beneficial for chemotherapy patients to prevent or control chemo-induced nausea and vomiting by applying simple methods of taking antiemetic, using lot of fluids or diet, resting in cool place, reciting the Holy Quran or praying regularly. It will help to devise the improvement in current patient education material.

Patients having chemotherapy-related Nausea and vomiting

Findings of this study help to understand the common self-managing cultural practices to improve or have better control over signs and symptoms of chemotherapy-related nausea vomiting.

Nursing practice

Oncology nurses are expected to play substantial role in minimizing chemotherapy-related side-effects by educating and counseling of patients. This study encourages nurses to be more resourceful by understanding the usefulness of appropriate patient interventions for themselves and understanding the less helpful attitudes to manage chemo-induced nausea and vomiting.

For future researchers

This study will help future researchers to provide source of information regarding SMB relationship with other factors as perceived well-being, social support, financial status, and cultural difference of patients.

For health-care setting

If patients are provided specific information related to the use of correct SMB, social support and importance of positive sense of well-being, they may have fewer visits to emergency assessment room and have better quality of life as they may not have developed nutritional deficiency, dehydration and electrolytes imbalance. It can further reduce burden on health-care team as outpatient department will have also lesser visits of patients which will ultimately reduce unnecessary use of resource utilization.

Limitations

This study will focus on the determination of SMB of the women only who have nausea and vomiting after receiving chemotherapy. Women have been chosen because of the following reasons:

1. Total adult patients visiting for chemotherapy are 1800 and among them, 60% are female patients
2. Many studies[9,18] reported that being female is the one risk factor of developing and sustaining post chemo nausea and vomiting
3. Apparently, many of our female patients were reported unmanaged post-chemo-induced nauseas and vomiting. However, present study shows that they are managing well. The inclusion of male patients and pediatric patients may produce different results.

Acknowledgments

There are many colleagues and patients who have influenced and inspired me during this journey. I feel so much gratitude for my patients who showed great courage and accepted the challenge to fight with not only cancer but with chemotherapy side effects bravely and positively. I would like to express my gratitude from the core of my heart to Assistant Professor Rita Ramos, a very nice human being who guided and supported me throughout the process. My special thanks to Dr. Farhana Badar for her enormous patience in planning the statistical analysis and writing answers raised by scientific review committee members. I am thankful to Ms. Rehana Elahi and Mr. Yousaf for their motivating and encouragement. My special thanks to Mr. Abu baker for extending his help in statistical analysis, guidance from time to time and support.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Cancer.net; Side Effects of Chemotherapy; 2017. Available from: https://www.cancer.net/navigating-cancer-care/how-cancer-treated/chemotherapy/side-effects-chemotherapy. [Last accessed 2019 Jul 31].
2. American Cancer Society. Cancer A-Z Cancer basics; 2017. Available from: URL https://www.cancer.org/cancer/cancer-basics.html. [Last accessed on 2017 Mar 20].
3. de Boer-Dennert M, de Wit R, Schmitz PI, Djontono J, v Beurden V, Stoter G, *et al*. Patient perceptions of the side-effects of chemotherapy: The influence of 5HT3 antagonists. Br J Cancer 1997;76:1055-61.
4. Ryan JL. Treatment of Chemotherapy-Induced Nausea in Cancer Patients. (2010). European oncology, 6(2), 14–16. Available from: URL https://doi.org/10.17925/eoh.2010.06.02.14. [Last accessed on 2017 Mar 20].
5. Bloechl-Daum B, Deuson RR, Mavros P, Hansen M, Herrstedt J. Delayed nausea and vomiting continue to reduce patients' quality of life after highly and moderately emetogenic chemotherapy despite antiemetic treatment. J Clin Oncol 2006; 24:4472-8.
6. Grey M, Schulman-Green D, Knafl K, Reynolds NR. A revised Self- and family management framework. Nurs Outlook 2015;63:162-70.
7. Lou Y, Yates P, McCarthy A, Wang HM. Self-management

of chemotherapy-related nausea and vomiting: A cross-sectional survey of Chinese cancer patients. Cancer Nurs 2014;37:126-38.

8. Boger E, Ellis J, Latter S, Foster C, Kennedy A, Jones F, *et al*. Self-management and self-management support outcomes: A systematic review and mixed research synthesis of stakeholder views. PLoS One 2015;10:e0130990
9. Multinational Association of Supportive Care in Cancer (MASCC). MASCC Antiemesis Tool; 2017. Available from: https://mascc.memberclicks.net/mat. [Last accessed on 2019 Jul 12].
10. Glasgow RE, Toobert DJ, Barrera M, Strycker LA. The Chronic Illness Resources Survey: cross-validation and sensitivity to intervention. Health Edu Res 2005;20:402-9.
11. Linton MJ, Dieppe P, Medina-Lara A. Review of 99 self-report measures for assessing well-being in adults: Exploring dimensions of well-being and developments over time. BMJ Open 2016;6:e010641.
12. Lee AA, Piette JD, Heisler M, Janevic MR, Langa KM, Rosland AM. Family members' experiences supporting adults with chronic illness: A national survey. Fam Syst Health 2017;35:463-73.
13. Hicks S, Tinkler L, Allin P. Measuring Subjective Well-Being and Its potential Role in Policy: Perspectives from the UK Office for National Statistics; 2013. Available from: URL https://www.springerprofessional.de/en/measuring-subjective-well-being-and-its-potential-role-in-policy/5756190. [Last accessed on 2017 Mar 31].
14. Roh SY. The influence of physical self-perception of female college students participating in pilates classes on perceived health state and psychological wellbeing. J Exerc Rehabil 2018;14:192-8.
15. MacDonald R. A. Music, health, and well-being: A review. International journal of qualitative studies on health and well-being, 8, 20635. (2013). Available from: URL https://doi.org/10.3402/qhw.v8i0.20635. [Last accessed on 2020 Feb 17].
16. Lai CC, Ma CM. The mediating role of social support in the relationship between psychological well-being and health-risk behaviors among Chinese university students. Available from: URL https://www.ncbi.nlm.nih.gov/pubmed/28070409 [Last accessed on 2020 Feb 13].
17. Prutipinyo C, Maikeow K, Sirichotiratana N. Self-care behaviours of chemotherapy patients. J Med Assoc Thai 2012;95 Suppl 6:S30-7.
18. Sekine I, Segawa Y, Kubota K, Saeki T. Risk factors of chemotherapy-induced nausea and vomiting: Index for personalized antiemetic prophylaxis. (2013). Available from: URL https://www.ncbi.nlm.nih.gov/pubmed/23480814. [Last accessed on 2020 Feb 17].