

A Patient Orientation Program at a Comprehensive Cancer Center

Amy M.B. Deshler, MSW, Kelliann C. Fee-Schroeder, RN, Jill L. Dowdy, MLIS,
Teresa A. Mettler, RN, Paul Novotny, MS, Xinghua Zhao, MS,
and Marlene H. Frost, PhD, RN, AOCN®

Purpose/Objectives: To determine which method of delivery of a cancer orientation program contributed to higher levels of satisfaction and lower levels of anxiety for newly diagnosed patients with cancer and each patient's support person.

Design: A randomized study of patients with cancer and caregivers into one of three delivery methods for an orientation program or a control arm.

Setting: A National Cancer Institute–designated comprehensive cancer center in the midwestern United States.

Sample: Newly registered patients with cancer diagnoses and their identified support people.

Methods: The intervention consisted of an orientation video and booklet delivered by three separate methods: class, drop-in sessions, or information mailed to homes. Participants completed questionnaires before the intervention and three weeks after the intervention.

Main Research Variables: State and trait anxiety, satisfaction, understanding of the organization, awareness and use of resources, and stress and coping.

Findings: The most successful accrual arms were the mailed intervention and control groups. The mailed intervention group compared to the control group reported higher levels of satisfaction with the cancer center, satisfaction with resources, understanding of the cancer center's structure, and satisfaction with healthcare professionals' communication with them. Fewer intervention group participants reported a lack of awareness of specific resources, and a larger percentage of the intervention group used available resources. Fewer benefits were noted with caregivers.

Conclusions: The mailed intervention was successful in improving several patient outcomes. It was shown to be especially helpful to those with high trait anxiety.

Implications for Nursing: A mailed orientation program can be a useful approach for increasing satisfaction with services.

Many patients newly diagnosed with cancer who receive treatment at a National Cancer Institute–designated comprehensive cancer center may be visiting the facility for the first time. Because of their unfamiliarity with the organization and the size of the institution, the experience can be overwhelming for patients and their support people. The authors wanted to explore the impact of providing a cancer orientation program for patients and caregivers to determine which method of delivery would contribute to higher levels of satisfaction and lower levels of anxiety.

Literature Review

Only one group of researchers has reported on the benefits of an orientation program (McQuellon et al., 1998; Wells,

Key Points . . .

- ▶ Participants who received a mailed orientation program prior to their medical oncology visits reported higher levels of satisfaction with the cancer center, satisfaction with resources, understanding of the cancer center's structure, and satisfaction with healthcare professionals' communication with them.
- ▶ The mailed orientation program was shown to be especially helpful for patients with high trait anxiety, a vulnerable group at high risk for poor psychosocial outcomes.
- ▶ Oncology nurses can play a key role in the development, implementation, and evaluation of successful orientation programs for patients with cancer and their support people.

McQuellon, Hinkle, & Cruz, 1995). Their orientation program was comprised of healthcare professionals meeting one-on-one with patients. Wells et al. reported that an orientation program was effective in reducing anxiety and distress associated with patients' (N = 33) initial outpatient clinic appointments. Patients in the intervention group demonstrated substantially more knowledge about clinic operations and higher satisfaction with care. McQuellon et al. reported on a larger study of 150 patients. The 90-minute individual orientation program decreased anxiety, distress, and depressive symptoms and enhanced knowledge and satisfaction with care. Because of a dearth of research in the area, the current researchers conducted an expanded review of the literature.

Amy M.B. Deshler, MSW, is an administrator in the Department of Development, Kelliann C. Fee-Schroeder, RN, is an educator in the Cancer Education Program, Jill L. Dowdy, MLIS, is a librarian in the Cancer Education Program, Teresa A. Mettler, RN, is a research study coordinator in the Department of Gastroenterology and Hepatology, Paul Novotny, MS, is a biostatistician in Foundation Health Services Research, Xinghua Zhao, MS, is a statistical programmer analyst in Foundation Health Services Research, and Marlene H. Frost, PhD, RN, AOCN®, is a professional associate in research in the Women's Cancer Program, all at the Mayo Clinic in Rochester, MN. (Submitted May 2005. Accepted for publication October 3, 2005.)

Digital Object Identifier: 10.1188/06.ONF.569-578

Desire for Information

Mohide et al. (1996) concluded from their review of research that, in addition to information specific to their cancer types, patients were interested in information about resources, including emotional support services. Chelf et al. (2001), in a review of 176 studies, concluded that patients with cancer diagnoses benefited from detailed information across the continuum of care. In fact, patients reported that they wanted the maximum amount of information about their diseases.

Reduction of Anxiety and Distress With Information

An initial oncology visit can be especially distressing. Factors that contribute to distress include unfamiliarity with the cancer care system (Mohide et al., 1996), specifically unfamiliarity with the environment and not knowing medical providers (Wells et al., 1995). Rawl et al. (2002) found that a computer-based nursing intervention that provided information about disease, treatment, symptom management, emotional counseling and support, and coordination of services significantly reduced depression and anxiety and improved mental and emotional health. The researchers concluded that acquiring and using information can promote coping, resulting in reduced anxiety and less overall distress. Information that reduces unfamiliar circumstances can be especially helpful in reducing psychological distress in people confronted by unfamiliar circumstances (Gallant & Coutts, 2003; Wells et al.).

Other Benefits of Information

Information reduces distress by enhancing patients' sense of control. An enhanced sense of control, in turn, relieves anxiety and enhances management of illness (Chelf et al., 2001). Active participation in decision making has been shown to increase with access to information (Juvonen & Lauri, 1996).

Informational Interventions

The researchers found four reviews of interventional studies. The first was a meta-analysis by Devine and Westlake (1995) involving 116 intervention studies. They concluded that the literature established the beneficial effects of various types of psychological educational care on adults with cancer. The beneficial effects included diminished anxiety, depression, distress, and physical symptoms, as well as increased knowledge.

The second review of 25 studies (Gagliano, 1988) concluded that video instruction programs increased short-term knowledge and decreased anxiety, pain, and sympathetic nervous system arousal. Chelf et al. (2001) concluded that use of print media during patient teaching increased satisfaction, reduced psychological distress, and increased knowledge and retention. Chelf et al. also concluded that orientation programs resulted in increased knowledge and decreased anxiety.

Krouse (2001) reviewed 18 studies involving video instruction that focused on modeling desired behaviors as a means to build self-efficacy. Krouse concluded that video modeling had a positive effect on enhancing knowledge, reducing anxiety, and reducing physiologic arousal during stressful situations. In a subgroup of studies, Krouse found that a video preparing women for breast cancer risk counseling resulted in women who were more satisfied, had a better understanding of relevant issues, and spent significantly less time at medical visits.

Conceptual Framework

Lazarus and Folkman (1984), in their work on stress and coping, asserted that people's appraisals of their situations influence their health outcomes. Psychological stress in Lazarus and Folkman's model is defined as people's appraisal that a given situation is taxing or exceeding their resources and endangering their well-being. Appraisal is influenced by the resources individuals perceive they have to deal with their given situations. The authors proposed that providing individuals with information about the team approach to their care, the philosophy that the needs of patients come first, familiarity with the physical setting, and available resources will provide the support needed to decrease psychological stress and favorably influence satisfaction with health care.

Methods

The study process involved determining eligibility of the target population and randomizing eligible patients to one of four arms consisting of a control group and three separate study groups, each providing a different method of delivery of the study intervention: class, drop-in session, or information mailed to homes. All participants in each arm were required to read a letter of invitation and sign a Health Insurance Portability and Accountability Act (HIPAA) release and an informed consent document. They also were required to complete preintervention questionnaires regarding awareness of resources and services available at the cancer center as well as demographic information and trait and state anxiety. Participants, excluding the control arm, received a video and booklet delivered by one of three separate methods. Three weeks after completion of the intervention, participants were asked to complete postintervention questionnaires measuring awareness, use, and satisfaction with services and resources available at the cancer center, as well as trait and state anxiety (see Figure 1).

Subjects

The target population consisted of patients who were newly registered in the Division of Medical Oncology, which included patient referrals from physicians working outside the clinic as well as patients who referred themselves. The patient population included those with patient registration numbers who may have been patients at the clinic previously for noncancer health issues. Participants could present with any nonhematologic cancer and at any stage of the disease treatment continuum. A secondary target population consisted of the primary support people for the patients with cancer.

To be eligible to be randomized to the study, patients had to be at least 18 years of age, had to be able to read and write English, had to be making their first visits as patients to the Division of Medical Oncology, had to have a biopsy-proven diagnosis of cancer, and had to have a minimum of 72 hours between patient registration and physician consultation.

Some patients who met the criteria for randomization were not able to participate in the study because of factors beyond the researchers' control (e.g., patient death, cancelled appointments, appointment conflicts). For support people to be eligible to be randomized to the study, they had to be at least 18 years of age, had to be able to read and write English, and had to be identified by the respective patients as the primary support people accompanying them to their appointments.

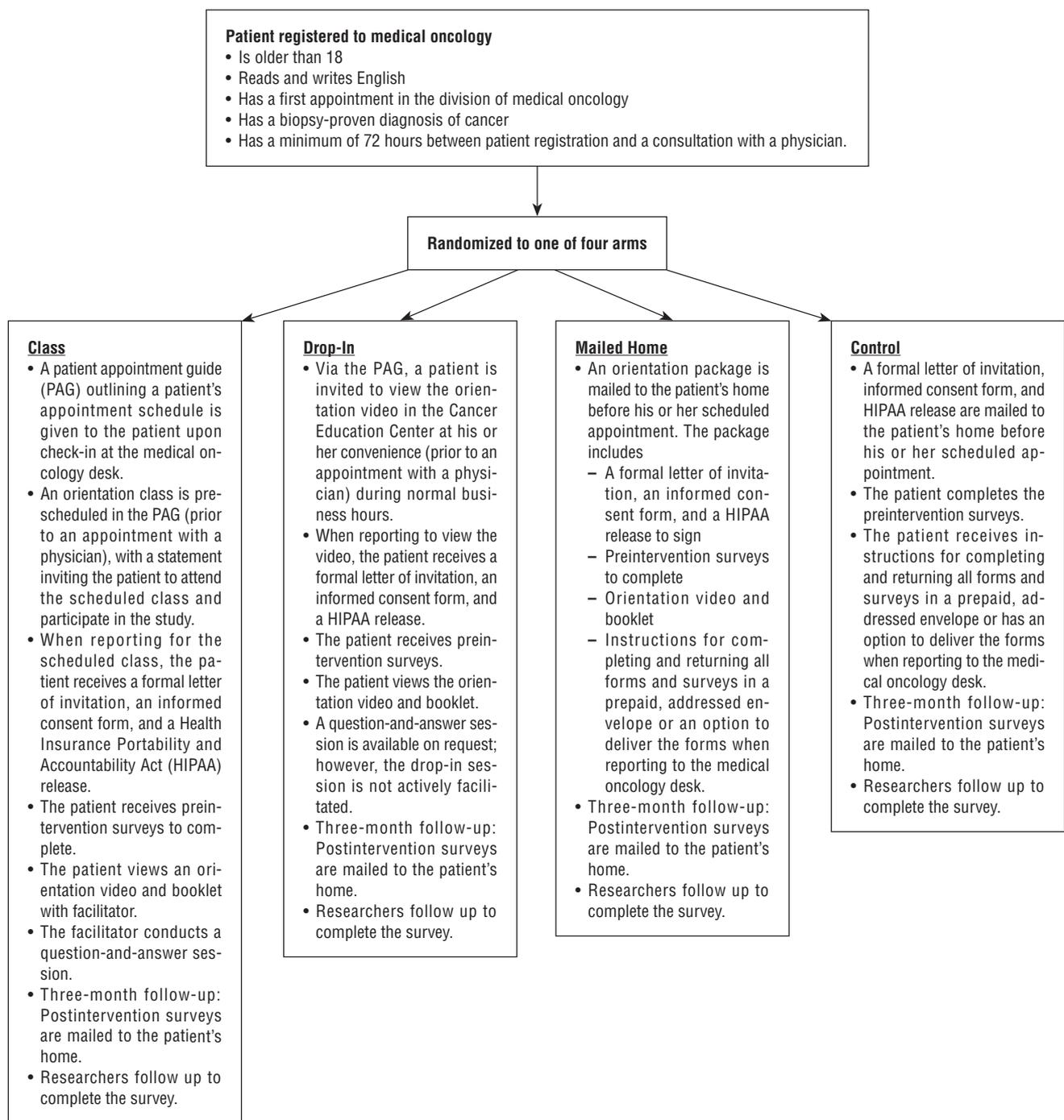


Figure 1. Schema of Methods and Participation Accrual Process

Patients were able to participate in the study despite the nonavailability of a support person. However, support people could not be accrued to the study without corresponding patients.

Approach

Traditionally, randomization of patients to study arms occurs after accrual to a study. However, because of the short timeframe between patient registration and consultation time

and the need to contact patients prior to any cancer center experience, patients and their support people were randomized before being invited to participate in the study. A list of random assignments prepared by a statistician was created at the start of the study. When patients first were registered for a medical oncology appointment and met all eligibility requirements, they were assigned randomly to one of four study arms. Each arm was assigned an equal number of participants.

A letter of invitation was mailed to the mailed-home and control arms and handed to participants in the class and drop-in arms. Informed consent was obtained by providing patients and support people with documents that explained the purpose of the study, discussed minimal risk, and allowed individuals to indicate their desire to not participate. Individuals were informed that they would not be penalized or lose healthcare services for refusal to participate.

After accrual, each participant completed preintervention questionnaires. The intervention then was administered. About three weeks after the intervention, postintervention questionnaires were mailed to each study participant for completion.

Intervention

The intervention consisted of patients receiving an orientation video and booklet delivered by three separate methods. The content for the videotape and booklet was developed through review of the literature and previous cancer center studies about informational needs identified by patients. A panel of educators and communication experts then met to discuss the key content. The video and booklet content was developed by a panel of educators and then critiqued by the Cancer Education Program's advisory panel, which included professional staff and patient advocates. The video and booklet were produced in conjunction with various institutional committees (Section of Patient Education, Cancer Education Program, Video Communication, and Department of Communications) to ensure that institutional standards were met. Although the method of delivery differed among the three study groups, all participants used the same video and booklet. The fourth study group (control arm) did not receive the orientation video and booklet.

The 12-minute video provided an overview of the cancer center. It included a welcome and introduction statement highlighting the philosophy of care at Mayo Clinic, as well as the cancer center. Patients were introduced to the concept of a matrix cancer center by hearing and seeing an explanation of possible locations where they might receive their cancer care, including appointment desks, examination and consultation rooms, and various diagnostic and treatment locations. The video encouraged patient participation with the multidisciplinary team approach of care and illustrated examples of interactions with various disciplines such as physicians, nurses, dietitians, pharmacists, chaplains, social workers, and educators. The Cancer Education Center also was identified as a source for obtaining education and support information. Patient vignettes regarding personal experiences were included. The overall intent of the video was to provide patients with an overview of the cancer center, orient them to the philosophy of care, and acquaint them with the many resources available.

The orientation booklet expanded on the concepts introduced in the video and was intended as a companion piece, providing more detail and information about the various resources and services available. The sections of the booklet were Welcome Statement, Mayo Clinic Philosophy, Introduction to the Cancer Center, What Is Cancer?, Preparing for Your Visit, Cancer Center Resources and Services, Clinical Trials, Frequently Asked Questions, Summary, Glossary of Cancer Terms, and Telephone Numbers.

The four study arms were

- **Class instruction:** This group of patients had a scheduled appointment to attend an orientation class facilitated by an

educator in the Cancer Education Center. The scheduled class was added to the Patient Appointment Guide and was provided to patients prior to their initial medical oncology appointments. Each patient and an accompanying support person were invited to participate in the study. Each was asked to complete the preintervention questionnaires, view the orientation video, receive the orientation booklet, and feel free to ask questions.

- **Drop-in:** This group of patients received instructions via the Patient Appointment Guide to drop by the Cancer Education Center at their convenience, prior to their initial appointments, Monday–Friday, 8 am–5 pm, to view the orientation video and receive the orientation booklet. On arrival at the Cancer Education Center, patients and accompanying support people were invited to participate in the study. Each was asked to complete the preintervention questionnaires, view the orientation video, and receive the orientation booklet. An educator did not facilitate the session, but participants could use the Cancer Education Center resources after the drop-in session.
- **Mail home:** For this group of patients, orientation packages were mailed to their home addresses prior to their initial medical oncology appointments. Each package included an invitation to participate in the study, preintervention questionnaires, and instructions for patients and primary support people to complete the questionnaires prior to viewing the orientation video and orientation booklet, which also were included. The participants were asked to return the preintervention questionnaires in an enclosed prepaid and addressed envelope prior to their appointments or to return the questionnaires when they arrived for their initial medical oncology appointments.
- **Control:** This group of patients had a package mailed to their homes that included an invitation to participate in the study, the preintervention questionnaires, and instructions for patients and primary support people. The participants were asked to return the preintervention questionnaires in an enclosed prepaid and addressed envelope prior to their appointments or to return their questionnaires when they arrived for their initial medical oncology appointments. They did not receive the orientation video or booklet. The resource information they received as part of routine care was determined by the healthcare professionals they saw. No institutional resources are available that would have described the organizational structure of the cancer center.

Instruments

Anxiety: Anxiety was measured using the **Profile of Mood States (POMS)** anxiety subscale (McNair, Lorr, & Droppelman, 1971). The 30-item measurement taps a variety of mood states, including anger, anxiety, depression, vigor/activity, fatigue/inertia, confusion, and total mood disturbance. Reliability and validity testing has been carried out successfully in patients with cancer (Curran, Andrykowski, & Studts, 1995). The POMS has been used extensively in research studies. High scores reflect high levels of anxiety.

Spielberger's Trait Anxiety Inventory (STAI) measures anxiety-proneness intrinsic to a person's personality. The STAI has demonstrated reliability and validity. Reliability has been substantiated by means of test-retest correlations ($r = 0.65-0.86$) and Cronbach's alpha (median coefficient of 0.90). Validity has been demonstrated by contrasting group

comparisons and correlations with other trait anxiety measurements (Spielberger, 1983).

Awareness and use of resources: The researchers developed three single items to address awareness of, level of comfort accessing, and satisfaction with cancer center resources. Additional items asked respondents to reflect on whether they found what they needed in the education center, whether they reviewed the video, whether they found the video and booklet to be helpful (with room for comments), what information and services they found to be particularly helpful, and what they would have found to be helpful. The items were reviewed by a panel of experts from nursing, education, and statistics. The items were pilot-tested on a group of patients and volunteers for clarity and representativeness. Suggested revisions were incorporated. Each item was scored independently. Low scores reflect high levels of satisfaction.

Coping: A one-item question was used to measure coping. The item has been used in previous research performed by one of the investigators and was found to provide valuable information (Frost et al., 2000). High scores reflect good coping.

Understanding of the cancer center: This concept was measured using a single item developed by the researchers. A panel of experts from nursing, education, and statistics reviewed the item. The item was pilot-tested on a group of patients and volunteers for clarity and representativeness. Suggested revisions were incorporated. High scores reflect high levels of understanding.

Statistical Analysis

Descriptive statistics, including means, frequencies, and percentages, were used to report findings. T tests and Fisher exact tests were used to determine statistically significant differences among groups. A 10% difference was used to determine clinical significance among groups (Norman, Sloan, & Wyrwich, 2003). All interval scores were changed to a 100-point scale, with high scores reflecting favorable aspects of the concept (e.g., high scores reflect less anxiety and better coping).

Results

A total of 498 patients were randomized to the study: 125 to each of the drop-in and mail arms and 124 to each of the class and control arms. Table 1 provides specific details about participation. Many individuals were categorized as “no shows,” “no response,” or “no presurvey returned” (n = 265). Some formally declined to participate (n = 36). Many (n = 90) were unable to participate because they had ap-

pointment conflicts, opted to cancel their appointments, or died prior to their appointments. A few individuals declined or forgot to sign the HIPAA form (n = 5). Some participants (n = 48) completed the required forms and participated in the intervention but did not complete the postintervention surveys. The authors followed up with each participant to enhance completion of the questionnaires; however, it had limited benefit.

Therefore, the final breakdown of individuals who successfully completed all required aspects of the study were 23 mail, 18 control, 7 drop-in, and 6 class. The authors elected not to report findings on the class (n = 6) and drop-in (n = 7) groups because each group had fewer than 10 participants.

Demographics

Most patients and participating caregivers in the mailed home and control arms were Caucasian, male, and married. Types of cancer diagnoses were varied, with lung cancer (30%) representing the single most common cancer type. Fewer than 25% of the patients or caregivers previously had been patients at the institution, and fewer than 25% had accompanied others to the institution. Most people were accompanied by their spouses. No significant demographic differences existed between the groups (see Table 2).

Satisfaction With the Cancer Center

The primary aim of the intervention was to increase satisfaction with the cancer center experience. More individuals in the patient mail group reported that they were very satisfied or completely satisfied (96%) with the cancer center experience compared to those in the control group (82%). Similar numbers of individuals in the caregiver mail group reported that they were very satisfied or completely satisfied (79%), compared to those in the control group (76%). When examining whether they believed that their care involved a team of professionals working together to meet their needs, similar numbers in the patient mail group (74%) and patient control group (71%) reported that they agreed to a large degree. However, more of the caregiver mail group (79%) than the caregiver control group (56%) reported that they agreed to a large degree that care involved a team of professionals working together. More individuals in the patient and caregiver mail groups agreed to a large degree that the cancer center staff lived up to the Mayo Clinic core value that the needs of patients come first (91% and 79%, respectively) compared to the patient and caregiver control groups (79% and 56%, respectively). Although the differences are at a clinically significant level, the small sample size does

Table 1. Participant Data Summary

| Group Assignment | Total Patients (N = 498) | No Response, No Show, No Presurvey Returned | Formal Decline | Death, Appointment Conflict, Cancellation | No Signed HIPAA Release | Presurvey Returned but No Postsurvey Returned | Completed All Aspects of Study |
|------------------|--------------------------|---|----------------|---|-------------------------|---|--------------------------------|
| Class | 124 | 40 | 2 | 65 | 1 | 10 | 6 |
| Drop-in | 125 | 106 | 4 | 8 | — | — | 7 |
| Mail | 125 | 53 | 16 | 7 | 3 | 23 | 23 |
| Control | 124 | 66 | 14 | 10 | 1 | 15 | 18 |

HIPAA—Health Insurance Portability and Accountability Act

Table 2. Demographics for Mailed Home and Control Groups

| Variable | Patients (%) | Caregivers (%) |
|--|--------------|----------------|
| Gender | | |
| Male | 63 | 31 |
| Female | 37 | 69 |
| Marital status | | |
| Married | 85 | 94 |
| Widowed | 5 | – |
| Divorced | 5 | – |
| Single | 5 | 6 |
| Partnered | – | – |
| Race | | |
| White | 90 | 94 |
| Black | 1 | – |
| Hispanic | 2 | – |
| Native American | 5 | 6 |
| Other | 2 | – |
| Cancer diagnosis | | |
| Lung | 30 | – |
| Colon, rectal | 7 | – |
| Breast | 6 | – |
| Gynecologic | 9 | – |
| Kidney, bladder | 3 | – |
| Prostate | 9 | – |
| Pancreatic | 3 | – |
| Other | 33 | – |
| Relationship to patient | | |
| Spouse | – | 74 |
| Family | – | 20 |
| Friend | – | 6 |
| Previously a patient at the institution | 22 | 9 |
| Previously accompanied someone to an appointment at the institution | 22 | 20 |

Patients N = 41, caregivers N = 35

not provide enough power to find a statistically significant difference.

Satisfaction With Specific Resources

More patients (10% or more) in the mail group compared to those in the control group were satisfied or completely satisfied with the specific cancer center resources that provided spiritual support, financial support, nutritional support, information about medicine, and emotional support (see Table 3). The control group was more satisfied with one area, the Cancer Education Center, with which 100% of the control group and 87% of the mail group were satisfied or completely satisfied. Although the differences are at a clinically significant level, they are not statistically significant. No statistically or clinically significant differences were found between groups in satisfaction with resources related to disease or information about treatment and side effects.

In contrast, the researchers found fewer significant differences between the caregiver mail group compared to the caregiver control group. More caregivers in the mail group compared to those in the control group (10% or more) reported satisfaction with the Cancer Education Center and information about medication. In contrast, a higher percentage of caregivers in the control group reported satisfaction with emotional support than those in the mail home group (see Table 3).

Understanding of the Cancer Center

More individuals in the patient mail group reported that their understanding of the organization was good or very good (81%) than people in the patient control group (53%). The difference, although clinically significant, was not statistically significant. However, a lower percentage of caregivers, which was comparable between groups (mail, 53%; control, 55%), reported their understanding of the organization as good or very good (see Table 4).

Satisfaction With Communication

More individuals in the patient mail group (91%) compared to the patient control group (70%) reported that they were very satisfied or completely satisfied with physician communication. Likewise, more individuals in the patient mail group (96%) compared to the patient control group (82%) reported that they were very satisfied or completely satisfied with healthcare team communication. In contrast, similar numbers of individuals in the caregiver mail group (79%) and caregiver control group (73%) reported that they were very or completely satisfied with physician communication. More of the caregiver mail group (74%) than the caregiver control group (65%) reported that they were very satisfied or completely satisfied with healthcare team communication. Although the differences are clinically significant, only healthcare team communication was statistically significant (see Table 4).

Awareness of Available Resources

Three weeks after their appointments, a lower percentage (by 10% or more) of the patient mail group compared to the patient control group reported that they were not aware of the following resources: Cancer Education Center, social service, dietary, pharmacy, and psychiatry and psychology. Additionally, a smaller percentage (by 10% or more) of the caregiver mail group compared to the control group reported that they were not aware of the following resources: chaplain and social services. Although the differences are at a clinically significant level, none is at a statistically significant level (see Table 5).

Use of Resources

On follow-up three weeks after their appointments, a larger percentage (by 10% or more) of the patient mail group compared to the patient control group used the following resources: information about disease, financial support, information about treatment, information about side effects, information about medications, and emotional support. No significant differences existed in patient use of the Cancer Education Center, spiritual support, and nutritional support. In contrast, fewer of the people in the caregiver mail group than those in the caregiver control group (by 10% or more) reported using the following resources: the Cancer Education Center, spiritual support, financial support, nutritional information, emotional support, information about disease, information about treatments, and information about side effects (see Table 6).

Anxiety

Trait anxiety reflects the stable personality of anxiety-proneness. In contrast, state anxiety reflects an emotional reaction to a particular situation. STAI trait anxiety scores were similar between the patient and caregiver mail and

Table 3. Satisfaction With Resources: Comparison Between Mail and Control Groups

| Resource | Patients Reporting That They Were Satisfied or Completely Satisfied ^a | | | Caregivers Reporting That They Were Satisfied or Completely Satisfied ^a | | |
|---|--|--------------------|------|--|--------------------|------|
| | Mail % (n = 23) | Control % (n = 18) | p | Mail % (n = 17) | Control % (n = 18) | p |
| Overall service and care at cancer center | 96 | 82 | 0.10 | 79 | 76 | 0.35 |
| Cancer Education Center | 87 | 100 | 0.31 | 90 | 77 | 0.28 |
| Information about disease | 95 | 92 | 0.95 | 93 | 87 | 0.54 |
| Spiritual support | 73 | 50 | 0.60 | 72 | 67 | 0.45 |
| Financial support | 100 | 71 | 0.10 | 50 | 58 | 0.46 |
| Nutritional information | 64 | 50 | 0.39 | 70 | 67 | 0.75 |
| Information about treatment | 100 | 91 | 0.33 | 92 | 93 | 0.32 |
| Information about side effects | 75 | 76 | 0.53 | 93 | 88 | 0.31 |
| Information about medication | 89 | 70 | 0.42 | 93 | 64 | 0.04 |
| Emotional support | 69 | 50 | 0.43 | 55 | 62 | 0.59 |

^a Percentages were figured on the individuals who noted that they used a specific resource; options were completely satisfied, satisfied, neither satisfied nor dissatisfied, and dissatisfied.

control groups, ranging from 55–59 on a theoretical 100-point scale in which high scores are favorable. Likewise, previsit and postvisit mean POMS state anxiety scores were similar between patient and caregiver mail and control groups, ranging from 70–79 on a theoretical 100-point scale in which high scores are favorable. This revealed a minimal level of state anxiety.

When examining individual responses in those with trait anxiety scores below and above the group mean, a pattern emerged. Patients in both the control and mail groups with high levels of trait anxiety, as indicated by scores below the group mean (high scores being favorable), reported more baseline state anxiety than patients who had a low level of trait anxiety as indicated by scores above the group mean ($p = 0.003$ and 0.02 , respectively). The mailed intervention appeared to have beneficial effects for those with high trait anxiety. Specifically, the mail group had follow-up state anxiety scores that were not significantly different between those with high and low trait anxiety ($p = 0.18$), whereas the control members with high levels of trait anxiety continued to experience more state anxiety on follow-up than those with a

low level of trait anxiety ($p = 0.005$) (see Table 7). Additionally, statistically significant differences based on trait anxiety included 88% of the patients in the control group with high trait anxiety scores reporting that they did not use spiritual, nutritional, or emotional services compared to 22% with low trait anxiety scores ($p \leq 0.05$) (see Table 8). Thus, the patients with high trait anxiety were using fewer resources. The difference between those with high and low trait anxiety was not seen in the mail group. Again, the data support the benefits of the mailed intervention.

Level of trait anxiety did not affect the caregiver mail group state anxiety at baseline. However, those with low levels of trait anxiety (scores above the group mean) experienced lower levels of state anxiety on the three-week follow-up than participants with high levels of trait anxiety ($p = 0.01$). In contrast, high levels of trait anxiety were strongly associated with high levels of state anxiety in the caregiver control group. Specifically, caregivers in the control group with high levels of trait anxiety reported more state anxiety at baseline ($p = 0.05$) and on follow-up ($p = 0.03$) compared to those with low levels of trait anxiety.

Table 4. Satisfaction With Healthcare Provider Communication, Care, and Understanding of Organization: Comparison Between Mail and Control Groups

| Variable | Patients Reporting High Levels of Satisfaction | | | Caregivers Reporting High Levels of Satisfaction | | |
|--|--|--------------------|------|--|--------------------|------|
| | Mail % (n = 23) | Control % (n = 18) | p | Mail % (n = 17) | Control % (n = 18) | p |
| Physician communication ^a | 91 | 70 | 0.12 | 79 | 73 | 0.46 |
| Healthcare team communication ^a | 96 | 82 | 0.05 | 74 | 65 | 0.47 |
| Understanding of organization ^b | 81 | 53 | 0.17 | 53 | 55 | 0.22 |
| Felt care involved a team of professionals working together to meet patients' needs ^c | 74 | 71 | 0.61 | 79 | 56 | 0.14 |
| Felt cancer center staff lived up to the institutional core value: "The needs of the patient come first." ^c | 91 | 77 | 0.14 | 79 | 71 | 0.83 |

^a Options were completely satisfied, very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, and completely dissatisfied.

^b Options were very poor, poor, neutral, good, and very good.

^c Options were to a large degree, somewhat, and not at all.

Table 5. Awareness of Resources: Three-Week Follow-Up

| Resource | Patients Reporting That They Were Not Aware of a Resource | | | Caregivers Reporting That They Were Not Aware of a Resource | | |
|---------------------------|---|--------------------|------|---|--------------------|------|
| | Mail % (n = 23) | Control % (n = 18) | p | Mail % (n = 17) | Control % (n = 18) | p |
| Cancer Education Center | 5 | 17 | 0.48 | 11 | 18 | 0.90 |
| Chaplain | 19 | 28 | 0.38 | 33 | 12 | 0.09 |
| Social service | 29 | 44 | 0.67 | 39 | 53 | 0.32 |
| Dietary | 29 | 39 | 0.92 | 28 | 29 | 0.40 |
| Pharmacy | 14 | 28 | 0.46 | 28 | 24 | 0.57 |
| Psychiatry and psychology | 24 | 39 | 0.44 | 44 | 41 | 1.0 |

Coping Ability

Participants in the mail and control groups had mean scores that indicated that they were coping fairly well or well, and the scores did not change significantly. Caregiver mean coping scores reflected that they were coping fairly well at baseline and follow-up. Level of trait anxiety only affected the mail group at follow-up, when caregivers with high levels of trait anxiety experienced higher levels of state anxiety than those with low levels of trait anxiety ($p = 0.04$).

Stress

Participants in the mail and control groups had mean scores that indicated slight to moderate stress levels. Levels of trait anxiety in the mail group did not influence levels of stress reported in the prior four weeks or levels of current stress at baseline or follow-up. However, in the control group, participants with high trait anxiety scores experienced more stress over the prior four weeks and currently compared to those with low trait anxiety scores at both the baseline ($p = 0.02$ and 0.05 , respectively) and follow-up ($p = 0.009$ and 0.07 , respectively) measurements. Levels of trait anxiety did not influence caregivers' levels of stress.

Discussion

The intervention was designed for newly registered patients with cancer and their identified support people. A significant limitation to the study was the low participation rate. Low participation was particularly evident in the class and drop-in arms. The mailed orientation allowed the most flexibility; if time did not permit patients to view the intervention before travel to their

medical appointments, they could watch the video in identified areas located at the cancer center. The low participation rate limited the statistical analyses that could be conducted.

The authors acknowledge that the period after cancer diagnosis often is a stressful time, and patients may have numerous medical appointments, as well as personal matters that need their attention. Participation in a voluntary project may have been unimportant during that time. Additionally, the required paperwork, including the HIPAA form, consent form, and questionnaires, may have been perceived as overwhelming.

All medical appointments and procedures were given priority, which often conflicted with the class schedule. Additionally, the Mayo Clinic model of care is efficient and left a limited amount of free time for participants randomized to the drop-in arm to complete the intervention. Additional delivery methods that could be considered for future study are an Internet-based option or personal video players available in waiting areas for patients and caregivers to use to watch the orientation program while waiting for their appointments. Both options may provide more efficient ways to plan around patients' medical appointments.

The mail group compared to the control group reported higher levels of satisfaction with the cancer center, satisfaction with resources, understanding of the cancer center structure, and satisfaction with healthcare team communication. The findings are consistent with the only other orientation interventions identified (McQuellon et al., 1998; Wells et al., 1995).

Fewer people in the intervention group reported a lack of awareness of specific resources, and a larger percentage of

Table 6. Use of Resources: Comparison Across Mail and Control Groups

| Resource | Patients Reporting Use of Resources | | | Caregivers Reporting Use of Resources | | |
|--------------------------------|-------------------------------------|--------------------|------|---------------------------------------|--------------------|------|
| | Mail % (n = 23) | Control % (n = 18) | p | Mail % (n = 17) | Control % (n = 18) | p |
| Cancer Education Center | 68 | 65 | 0.82 | 56 | 77 | 0.22 |
| Information about disease | 91 | 77 | 0.24 | 78 | 88 | 0.41 |
| Spiritual support | 52 | 47 | 0.74 | 44 | 71 | 0.12 |
| Financial support | 95 | 80 | 0.15 | 47 | 71 | 0.16 |
| Nutritional information | 52 | 47 | 0.74 | 53 | 71 | 0.29 |
| Information about treatment | 91 | 65 | 0.05 | 81 | 94 | 0.29 |
| Information about side effects | 60 | 50 | 0.55 | 83 | 94 | 0.32 |
| Information about medication | 86 | 59 | 0.06 | 78 | 82 | 0.74 |
| Emotional support | 62 | 47 | 0.36 | 56 | 77 | 0.22 |

Table 7. The Effect of Trait Anxiety on Mail and Control Groups' Scores for State Anxiety, Coping, and Stress

| Variable | Patients With Trait Anxiety Scores Below and Above Group Mean of 55.8 | | | | | | Caregivers With Trait Anxiety Scores Below and Above Group Mean of 56.1 | | | | | |
|---|---|----------------------------|-------|------------------------|----------------------------|--------|---|---------------------------|------|------------------------|---------------------------|------|
| | Mail | | | Control | | | Mail | | | Control | | |
| | < \bar{X} (n = 12) | $\geq \bar{X}$ (n = 11) | p | < \bar{X} (n = 8) | $\geq \bar{X}$ (n = 10) | p | < \bar{X} (n = 9) | $\geq \bar{X}$ (n = 9) | p | < \bar{X} (n = 8) | $\geq \bar{X}$ (n = 9) | p |
| State anxiety^a | | | | | | | | | | | | |
| Baseline | 57.8 | 80.5 | 0.003 | 61.9 | 78.5 | 0.02 | 69.3 | 71.9 | 0.77 | 65.0 | 77.5 | 0.05 |
| Follow-up | 65.6 | 75.6 | 0.18 | 68.8 | 88.8 | 0.005 | 66.4 | 83.9 | 0.01 | 66.4 | 87.8 | 0.03 |
| Level of coping^b | | | | | | | | | | | | |
| Baseline | 3.1 | 3.6 | 0.11 | 3.1 | 4.0 | 0.0004 | 3.2 | 3.6 | 0.33 | 3.3 | 3.4 | 0.54 |
| Follow-up | 3.1 | 3.8 | 0.03 | 3.1 | 3.9 | 0.02 | 2.9 | 3.7 | 0.04 | 3.3 | 3.4 | 0.54 |
| Level of stress^c in the past four weeks | | | | | | | | | | | | |
| Baseline | 3.6 | 3.1 | 0.24 | 3.6 | 2.2 | 0.02 | 3.9 | 2.9 | 0.05 | 3.3 | 3.1 | 0.82 |
| Follow-up | 3.1 | 2.6 | 0.42 | 3.4 | 2.1 | 0.009 | 3.6 | 3.2 | 0.49 | 2.9 | 2.9 | 0.98 |
| Level of stress now^c | | | | | | | | | | | | |
| Baseline | 3.6 | 2.9 | 0.13 | 3.4 | 2.3 | 0.05 | 3.9 | 3.4 | 0.31 | 3.4 | 3.2 | 0.79 |
| Follow-up | 3.1 | 2.5 | 0.34 | 3.4 | 2.3 | 0.07 | 3.9 | 3.2 | 0.23 | 3.3 | 3.1 | 0.82 |

^a Scores on a scale from 0–100, with high scores being favorable (low levels of anxiety)

^b Scores: 1 = not coping at all, 2 = barely coping, 3 = coping fairly well, 4 = coping well, 5 = coping extremely well

^c Scores: 1 = not stressful, 2 = slightly stressful, 3 = moderately stressful, 4 = very stressful, 5 = extremely stressful

the intervention group used available resources. The intervention seemed to be particularly useful for those with high trait anxiety. Specifically, the intervention resulted in those with high trait anxiety experiencing lower levels of state anxiety at the three-week follow-up compared to those with high trait anxiety in the control group. This is of particular importance in that those with high trait anxiety have been identified as at risk for poor adjustment (Frost et al., 2000) and poor performance (Lazarus, 1991). Early communication of information helps to establish relationships with patients, decreases the number of unknowns about the setting, and provides an increased sense of control. The intervention probably allowed healthcare providers more time to discuss medical concerns during consultations rather than answering questions about informational resources available throughout the center. Ad-

ditionally, the orientation should have reduced the demands on patients to actively seek resources and, in turn, made visits more satisfying.

The fact that the participants experienced higher levels of satisfaction with the institution and had a better understanding of the resources available suggests that they would be more likely to return to the same institution for medical care in the future. Additionally, the individuals likely would recommend the center to others and share their positive experiences with friends, family members, coworkers, and acquaintances.

Fewer benefits were noted with the caregivers. This might be related to the fact that only 74% of the caregivers in the mail group reported that they watched the video compared to 91% in the patient group. Perhaps the identified caregivers

Table 8. The Effect of Trait Anxiety on Mail and Control Groups' Use of Services

| Service | Patients With Trait Anxiety Scores Below and Above Group Mean of 55.8 Reporting No Use of Services ^a | | | | | | Caregivers With Trait Anxiety Scores Below and Above Group Mean of 56.1 Reporting No Use of Services | | | | | |
|--------------------------------|---|------------------------------|------|--------------------------|------------------------------|------|--|-----------------------------|------|--------------------------|-----------------------------|------|
| | Mail | | | Control | | | Mail | | | Control | | |
| | < \bar{X} % (n = 12) | $\geq \bar{X}$ % (n = 11) | p | < \bar{X} % (n = 8) | $\geq \bar{X}$ % (n = 10) | p | < \bar{X} % (n = 9) | $\geq \bar{X}$ % (n = 9) | p | < \bar{X} % (n = 8) | $\geq \bar{X}$ % (n = 9) | p |
| Cancer Education Center | 46 | 18 | 0.36 | 38 | 33 | 0.85 | 33 | 57 | 0.61 | 25 | 22 | 0.89 |
| Information about disease | 20 | – | 0.21 | 38 | 11 | 0.29 | 11 | 33 | 0.58 | 13 | 11 | 0.92 |
| Spiritual support | 60 | 36 | 0.39 | 88 | 22 | 0.02 | 44 | 71 | 0.36 | 13 | 44 | 0.29 |
| Financial support | 10 | – | 0.48 | 25 | 14 | 0.60 | 44 | 63 | 0.64 | 13 | 44 | 0.29 |
| Nutritional information | 60 | 36 | 0.39 | 88 | 22 | 0.02 | 33 | 63 | 0.35 | 13 | 44 | 0.29 |
| Information about treatment | 20 | – | 0.21 | 50 | 22 | 0.33 | 11 | 29 | 0.55 | 14 | – | 0.43 |
| Information about side effects | 50 | 30 | 0.65 | 75 | 25 | 0.13 | 11 | 22 | 0.53 | 13 | 11 | 0.47 |
| Information about medications | 30 | – | 0.09 | 63 | 22 | 0.15 | 22 | 22 | 1.0 | 13 | 22 | 0.60 |
| Emotional support | 50 | 27 | 0.39 | 88 | 22 | 0.02 | 22 | 71 | 0.13 | 13 | 33 | 0.58 |

^a Scores on a scale from 0–100, with high scores being favorable (low levels of trait anxiety)

lived at different residences than where the materials were mailed, or perhaps the support people may have perceived that the materials were only for patients. Thus, the study limitation may have reduced the benefits found for caregivers.

The mailed intervention was successful in improving several outcomes. The intervention was shown to be especially helpful to those with high trait anxiety. An orientation program mailed to patients' homes can be a useful approach to increase satisfaction and use of services and to decrease anxiety.

The implications for nursing practice are profound. Nursing practice has a long tradition of identifying and providing for the psychosocial support of patients and families. Nurses are uniquely positioned to assess, develop, and implement strate-

gies that may alleviate some of the initial anxieties and uncertainties of patients and families as they experience unfamiliar medical facilities and practices. The intervention in the current study demonstrated that nurses can complement traditional healthcare teams in an educational and informational role to orientate individuals to their medical centers and describe the availability of resources in a proactive manner, even prior to patients arriving at their institutions. Such innovation provides the best care possible for patients and their families and is the type of care that will distinguish institutions.

Author Contact: Amy M.B. Deshler, MSW, can be reached at deshler.amy@mayo.edu, with copy to editor at ONFEditor@ons.org.

References

- Chelf, J.H., Agre, P., Axelrod, A., Cheney, L., Cole, D.D., Conrad, K., et al. (2001). Cancer-related patient education: An overview of the last decade of evaluation and research. *Oncology Nursing Forum*, 28, 1139–1147.
- Curran, S., Andrykowski, M., & Studts, J. (1995). Short form of the Profile of Mood States (POMS-SF): Psychometric information. *Psychological Assessment*, 7(1), 80–83.
- Devine, E.C., & Westlake, S.K. (1995). The effects of psychoeducational care provided to adults with cancer: Meta-analysis of 116 studies. *Oncology Nursing Forum*, 22, 1369–1381.
- Frost, M.H., Vockley, C.W., Suman, V.J., Green, M.H., Zahasky, K., & Hartmann L. (2000). Perceived familial risk of cancer: Health concerns and psychosocial adjustment. *Journal of Psychosocial Oncology*, 18(1), 63–82.
- Gagliano, M.E. (1988). A literature review on the efficacy of video in patient education. *Journal of Medical Education*, 63, 785–792.
- Gallant, M.D., & Coutts, L.M. (2003). Evaluation of an oncology outpatient orientation program: Patient satisfaction and outcomes. *Supportive Care in Cancer*, 11, 800–805.
- Juvonen, S., & Lauri, S. (1996). New patients with cancer: Access to information, need for information, and participation in decision-making. *European Journal of Cancer Care*, 5, 155–161.
- Krouse, H.J. (2001). Video modeling to educate patients. *Journal of Advanced Nursing*, 33, 748–757.
- Lazarus, R.S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- McNair, D., Lorr, M., & Droppleman, L. (1971). *Profile of Mood States manual*. San Diego, CA: Educational and Testing Service.
- McQuellon, R.P., Wells, M., Hoffman, S., Craven, B., Russell, G., Cruz, J., et al. (1998). Reducing distress in cancer patients with an orientation program. *Psycho-Oncology*, 7, 207–217.
- Mohide, E.A., Whelan, T.J., Rath, D., Gafni, A., Willan, A.R., Czukur, D., et al. (1996). A randomised trial of two information packages distributed to new cancer patients before their initial appointment at a regional cancer centre. *British Journal of Cancer*, 73, 1588–1593.
- Norman, G.R., Sloan, J.A., & Wyrwich, K.W. (2003). Interpretation of changes in health-related quality of life. The remarkable universality of a half a standard deviation. *Medical Care*, 41, 582–592.
- Rawl, S.M., Given, B.A., Given, C.W., Champion, V.L., Kozachik, S.L., Kozachik, S.L., et al. (2002). Intervention to improve psychological functioning for newly diagnosed patients with cancer. *Oncology Nursing Forum*, 29, 967–975.
- Spielberger, C.D. (1983). *State-Trait Anxiety Inventory (STAI) (Form Y)*. Palo Alto, CA: Consulting Psychologists Press, Inc.
- Wells, M.E., McQuellon, R.P., Hinkle, J.S., & Cruz, J.M. (1995). Reducing anxiety in newly diagnosed cancer patients. *Cancer Practice*, 3(2), 100–104.