Chemotherapy at home: Keeping patients in their “natural habitat”

by Nicole Crisp, Priscilla M. Koop, Karen King, Wendy Duggleby, and Kathleen F. Hunter

Abstract
Escalating cancer rates and an increase in the complexity and duration of chemotherapy regimens have brought the issue of cancer treatment at home to the forefront. For the participants of this study, home chemotherapy was offered as a potential treatment choice. Ten patients who accepted home chemotherapy were interviewed using the methodology of interpretive description. They shared their experiences of receiving chemotherapy at home, and identified home as being a “natural habitat” in which they were better able to adapt to their circumstances. Patients were able to redistribute their resources including time, energy, and finances in ways that were meaningful to them. They felt the care provided was enhanced and they were more receptive to teaching. Lastly, participants viewed themselves as being less ill and better able to cope with their treatments. Given the results of this study and other research available, chemotherapy at home should be considered an option for patients with cancer.

Introduction
Recent reports have shown a major shift in medical care and have identified home care as the fastest growing service delivery model in industrialized nations (Boothroyd & Lehoux, 2004). Advances in cancer treatment and knowledge of toxicities, improvements in supportive medications, and technological changes have now made it possible for chemotherapy to be given in the home. Escalating cancer rates, changes to treatment, and earlier diagnosis raise a number of significant concerns and implications for health care professionals and patients. Home chemotherapy is currently being proposed as one possible solution to this crisis. The provision of chemotherapy to patients at home or at work may potentially free up hospital space and allow some patients to continue paid work and to manage their families. On the other hand, there is worry that the costs of home-based care may be shifted from the health care system to family and friends who may not be able to afford it (King, Hall, Caleo, Gurney, & Harnett, 2000). Research is needed to determine the extent to which home chemotherapy resolves the problems currently experienced by the health care system without placing undue pressure on patients and families.

Studies of home chemotherapy programs have focused on cost-effectiveness, safety, and patient compliance with a limited focus on the concerns of the health care system and health care professionals (Appelin & Bertero, 2004; Bakker, DesRochers, McChesney, Fitch, & Bennett, 2001; Borras et al., 2001). Little research has been conducted to explore patients’ own views about the strengths and potential problems of home chemotherapy.

Purpose
The purpose of this study was to explore the perspectives of adult patients receiving home chemotherapy.

Objectives
The objectives of this study were to:
• Identify patients’ perceptions of their experiences with home chemotherapy
• Identify patients’ perceptions of their family members’ experiences with home chemotherapy
• Explore insights into how chemotherapy treatments might be improved
• Generate hypotheses for future quantitative and qualitative research

Methodology
The study was qualitative in design, utilizing interpretive description (Thorne, Reimer-Kirkham, & MacDonald-Emes, 1997). This method is particularly useful for exploring clinical situations in which the research results can be applied to improving clinical practice in a timely manner. Interpretive Description is grounded in an interpretive orientation that acknowledges the constructed and contextual nature of the health illness experience, yet also allows for shared realities.

After the ethics review was obtained, patients were contacted by telephone and approached during clinic visits by nurses. If the patient expressed interest in participating, they were contacted by the primary author to provide further details about the study and to arrange a time for an interview.

Interviews were completed in the patients’ homes and at a large cancer care facility in western Canada, using semi-structured questions. The primary author conducted all interviews. Interviews were audio taped and transcribed verbatim. There was no restrictive time limit for the interview. The interviews took an average of one hour to complete. The guiding questions for the interview were as follows:
1. Please tell me about the experience of receiving chemotherapy in your home. What are the advantages? What are the disadvantages?
2. How do you think your family is affected by your getting chemotherapy at home? How do you think you or your family would be affected if you received your chemotherapy at the hospital instead?
3. Tell me about your decision to receive chemotherapy at home; how did you come to make that choice?
This study was part of the “Cancer Treatment at Home” program, a pilot project that was conducted by a large cancer care facility in western Canada. This pilot project ran for approximately one year and received 117 referrals. Eighty-nine patients were accepted to receive chemotherapy at home. Patients declining participation accounted for 14 of the individuals who did not enter the program. Patients’ reasons for declining to participate in the pilot project included: having small children and wanting a break by going to the cancer centre, family members not being comfortable with home-based chemotherapy, fear of negative reactions to chemotherapy at home, fear of losing long-term disability coverage, having friends that lived near the cancer centre, easier justification of time away from work, concern about the home being too crowded, and concern about the lack of social interaction (Rocchio, 2010). Randomization into the program was not used and participation in the pilot project was strictly voluntary. Patient selection criteria and a treatment protocol list, consisting of basic infusional chemotherapy, were developed with the input of medical oncologists. A full assessment of the patient and his/her home was completed before the patient was admitted to the program in order to ensure the safety of both the patients and staff. The treatment was administered by oncology nurses who had been given additional home care education. Patients attended the outpatient clinics at the cancer care centre for blood work, assessment, and to see the clinicians. In addition, all patients received their initial chemotherapy treatment at the cancer centre. On completion of the pilot project, patients who required further chemotherapy treatments received them at the cancer care centre. Please see Appendix A for a complete list of inclusion and exclusion criteria for the pilot program. The pilot project was completed on July 31, 2010.

### Participants

Using a combination of convenience and theoretical sampling, 10 patients who were receiving home chemotherapy and were participants in the pilot program described above were recruited to this qualitative study. The sample size was chosen to investigate as many perspectives as possible within the confines of a master’s thesis. Participants ranged from 36 to 78 years of age and included colorectal, breast, pancreatic, peritoneal, gastric and unknown primary cancer diagnoses (see Table 1). Approximately half of the patients were receiving treatment for palliation, and half for curative intent. All drugs were administered intravenously. Cytotoxic drugs/agents included: Topotecan, FUFA, ELF, Herceptin and Gemcitabine.

### Data analysis

Constant comparative analysis and ongoing engagement with data were used to confirm and explore conceptualizations. The information was analysed by the primary author, focusing on inductive rather than deductive analysis. This researcher used field notes, in-progress diagrams and audio recordings to ensure that all concepts were identified and developed throughout the process of research. After each interview, key concepts were taken from the field notes and audio recordings and added to a whiteboard diagram. If concepts were repeated, expanded, or uniquely identified in future interviews, this was also noted in the diagram. When all ten interviews were completed, they were transcribed verbatim and reviewed a final time to ensure that valuable information was not disregarded. Research was conducted in pursuit of a master’s thesis, and therefore, there was a partnership between the student and the supervisor to ensure thorough identification of concepts and accurate description in theme headings.

### Findings

The major theme that emerged from the data was that of home as a natural habitat, in which patient adaptation was facilitated and care was personalized. Sub-themes included the realignment of resources with values, adapting to the experience of illness, and improved care provision and reception. All names used are pseudonyms.

#### Primary theme: Chemotherapy in a “Natural Habitat”

One patient, Diane, in trying to explain her experience of home chemotherapy, spoke of her recent attendance at a seminar by Dr. Jane Goodall, the noted British primatologist, ethologist, anthropologist, and UN Messenger of Peace. Diane spoke of the fact that society works very hard to protect animals by keeping them in their natural habitat, yet, this is something that is not valued in the treatment of illness in humans.

*You know, we went to listen to Dr. Jane Goodall speak.*

*Amazing. Amazing woman. Worked for years with the chimps and all that. What do they want to do? They want to keep (the animals) in their natural habitat. She travels the world to maintain that integrity for her animals and yet, they don’t kind of get that for people.*

Other patients, such as Helen, talked about how being in the home setting kept them thinking positively.

*I think (treatment location) plays a part in your frame of mind.*

*The more positive you are, the better you are going through treatments.*

Others did not want to be exposed to the potentially traumatic circumstances of others in the hospital and wanted to move forward with their normal daily routines.

*I think (treatment environment) is, in a way, you almost don’t want to see the people who are really, really sick, because then you think, “Oh my gosh, is that the (situation) I’m going to be in? Is that where I’m heading?”*

### Table 1: Patient demographic characteristics

<table>
<thead>
<tr>
<th>Patient</th>
<th>Gender</th>
<th>Age</th>
<th>Marital Status</th>
<th>Occupation</th>
<th>Diagnosis</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>f</td>
<td>60</td>
<td>Married</td>
<td>Seamstress</td>
<td>Peritoneal Cancer</td>
<td>Topotecan</td>
</tr>
<tr>
<td>B</td>
<td>m</td>
<td>70</td>
<td>Married</td>
<td>Civil Engineer</td>
<td>Colorectal Cancer</td>
<td>FUFA*</td>
</tr>
<tr>
<td>C</td>
<td>f</td>
<td>36</td>
<td>Married</td>
<td>Retail Sales Associate</td>
<td>Breast Cancer</td>
<td>Herceptin</td>
</tr>
<tr>
<td>D</td>
<td>f</td>
<td>40</td>
<td>Married</td>
<td>Administrative Assistant</td>
<td>Unknown Primary</td>
<td>Gemcitabine</td>
</tr>
<tr>
<td>E</td>
<td>f</td>
<td>40</td>
<td>Married</td>
<td>ESL Instructor</td>
<td>Breast Cancer</td>
<td>Herceptin</td>
</tr>
<tr>
<td>F</td>
<td>m</td>
<td>45</td>
<td>Married</td>
<td>Heavy Duty Mechanic</td>
<td>Pancreatic Cancer</td>
<td>FUFA*</td>
</tr>
<tr>
<td>G</td>
<td>m</td>
<td>72</td>
<td>Married</td>
<td>Retired</td>
<td>Colorectal Cancer</td>
<td>FUFA*</td>
</tr>
<tr>
<td>H</td>
<td>f</td>
<td>78</td>
<td>Married</td>
<td>Retired</td>
<td>Colorectal Cancer</td>
<td>5-Fluorouracil</td>
</tr>
<tr>
<td>I</td>
<td>f</td>
<td>58</td>
<td>Married</td>
<td>Dental Hygienist/Instructor</td>
<td>Breast Cancer</td>
<td>Herceptin</td>
</tr>
<tr>
<td>J</td>
<td>m</td>
<td>74</td>
<td>Married</td>
<td>Retired</td>
<td>Gastric Cancer</td>
<td>ELF**</td>
</tr>
</tbody>
</table>

*FUFA refers to a combination of 5-fluorouracil and leucovorin

**ELF refers to a combination of etoposide, 5-fluorouracil and leucovorin*
You know, it just kind of makes you worry more than you need to, right? You just need to focus on me. This is my medicine and I’m getting it and moving forward with my life. The treatment at home program allows you to do that. The whole idea—it’s so nice and comforting that people don’t have to know... and you get a little bit of privacy back in your life. You’re able to just do what needs to be done and get through it.

Many of the participants in this study talked about feeling empowered by maintaining their personal identities. Being offered cancer treatment at home protected the participants’ capacity to make choices. Home was seen as a place of comfort, security, and normalcy. It was also described as a “natural habitat” and a key factor in helping patients adapt to the stress of receiving chemotherapy at home. This is consistent with previous research relating to preference, satisfaction and quality of life, although the actual description of “natural habitat” has not previously been expressed. The concerns in a study by Stevens, McKeever, et al. (2006), regarding an increase in emotional distress after three months of treatment at home, were not reproduced. In fact, several participants talked about their disappointment in having to return to hospital when the pilot project finished. One patient experienced anxiety-related vomiting on his way back to hospital—something that he did not experience at home.

Secondary themes

Linked to the central concept of home as a “natural habitat”, several other sub-themes were commonly described as part of the experience of receiving home chemotherapy (See Table 2).

Realignment of resources with values

Realignment of resources with values outlined what the participants found to be significant in their lives. By receiving chemotherapy at home, participants described their ability to spend more time with family members and dependent children, focus on paid or unpaid work, or preserve physical strength for activities that were meaningful to them. They also appreciated the reduced financial burden associated with travel, parking and childcare expenses. The majority of participants described a combination of all these elements. Individuals or activities that were valued by the patient were kept as priorities, and the patients perceived they had greater freedom in terms of how they wanted to spend their time, energy and money. Participants were also able to see, as one patient stated it, a “ripple” effect of these benefits onto their caregivers.

Realignment of resources with values and effects on caregivers

Woven into the experience of the participants receiving cancer treatment at home, was mention of the effects this had on their caregivers. This is a crucial element in the delivery of cancer treatment at home from the patients’ perspectives. It has been suggested previously by health care professionals that shifting services from hospital to home may increase the level of caregiver strain or burden. While describing their experiences of home chemotherapy, participants in this study did not feel there was a negative impact on caregivers but, rather, a “rippling” effect of reduced stress and responsibility. Participants described their experience of home chemotherapy as being less stressful for caregivers.

Although the caregivers were not formally included in the study, their experiences are described through the eyes of the patient themselves. Research regarding palliative home care by Appelin and Bertero (2004) described the guilt that some patients felt by asking their family or friends to assist with care at home. In contrast, the participants of this study describe a reduced sense of burden, as treatment at home often relieved caregivers of the tasks they were assisting with, such as transportation and childcare.

Adapting to the experience of illness

In this study, patients reported feeling greater sense of privacy and enhanced ability to manage aspects of their treatment when at home. Examples included using their own bathrooms for vomiting or diarrhea or taking steps to make intravenous insertion easier. One patient described having a hot shower prior to his appointment to improve venous access. They were also able to use their home treatments as contrasting opportunities to teach and withhold information. A participant with a pre-school aged daughter used the opportunity to teach her about anatomy and goals of treatment. In contrast, she chose not to share her diagnosis with her mother, who had cardiac issues, due to concern that the news would be stressful. All of these experiences provided the patients with a greater ability to adapt to their treatment. They had greater privacy and, therefore, could control the flow of information to family members.

Throughout the course of interviews, several participants described how having chemotherapy at home changed their self-image and left them feeling better able to deal with the diagnosis of cancer. Participants actually viewed themselves as less ill. Participants in this study thought they were better able to cope with cancer by not having constant reminders of illness dominating their lives. “The concept of engulfment provides an apt description of the overwhelming impact imposed by cancer and the transformation of self-concept over the course of the disease, its treatment, and the subsequent period of survivorship.” (Beanlands et al., 2003). According to Beanlands et al. (2003), because cancer is associated with social stigma, “a cancer diagnosis thus distinguishes one from others in ways that redefines the self as devalued and compromises the sense of self-worth.” Reduced engulfment and fewer reminders of illness were described as key components in the experience of receiving cancer treatment at home. This feeds back into the theme of home as a “natural habitat” and a place of peace for participants.

Although patients had fewer reminders of illness at home, there was some suggestion that participants might risk becoming too secluded. One patient mentioned that social interaction might be missed by some patients, but was clear to identify that this was not an issue for herself. Should home chemotherapy become a future model of care delivery, nurses must address this need in their patients and encourage them to continue to seek interaction outside the home.

Improved care provision and reception

Throughout the interviews, several terms recur, including: “one-on-one” and “personalized care”. The participants’ experiences of receiving treatment at home were affected by the additional care that the nurse was able to provide during the visit. This included teaching about the side effects of medications and emotional support. Participants were able to ask “embarrassing questions”. They believed they retained information better and were not overwhelmed by the hospital setting. Due to the nature of the pilot project and small number of staff who were involved in the home visits, there was a high level of trust that developed between the nurse and the participant.

Understanding a particular patient’s situation is vital in providing care and, according to the participants of this study, by providing treatment in the home, nurses were able to better understand who they were, as individuals.

Discussion

Overall, the concept of home as a “natural habitat”, in which the patient was more adaptable and care was personalized, emerged as a powerful message from the participants. Natural habitat is the environment in which we exist and interact, including the home. Currently, when patients are diagnosed with cancer, they are displaced from their homes to a contrived, heavily scheduled setting such as a hospital. Routines are lost, and the patient becomes
### Realignment of Resources with Values

- “I think, especially because my kids are so young... I wanted to spend every waking minute with them. As much as sometimes when they're having their tantrums or whatever and you're okay, okay! ...I'm just happy that I'm there to hear the tantrum. You know... it's completely taken on a new perspective.”
- “I'd rather take good care of my daughter than have my daughter taken care of by my friends. Although they were very nice.”
- “I operate my business at home and the (nurses) save a lot of time for me because I don't have to spend probably more than one hour for travel to the (hospital) and waiting in line. Sometimes I'm very busy with meetings and the service at home saves me a lot of time to do the great job that I have to do.”
- “My husband—now that we only have one income in this family, has not had to, you know... he's in construction in his own business. He had to put his customers to the side in order to take me to the (hospital) because I was not able to drive myself when I was at my worst.”
- “When my husband worked out of town, I had to cab it. For winter months I had to cab it. So the money was (long pause)... it's costly.”
- “I found even driving (to the hospital) and getting my chemo, by the time I got home, I'd have to have a nap. I found myself getting tired from it really quick. And then after I had the first week of (home chemotherapy), I found it really convenient, you know? They come to your house and get it all done. I get to stay in a warm environment, especially winter time. Yeah, it was nice. I looked forward to having that.”

### Realignment of Resources with Values and its Effects on Caregivers

- “It’s made a huge difference for (my children). I think when you get diagnosed with this it just throws everything that you know for a loop, right? I mean, we have such a close family. And we’re so involved with each other and I think for my children to see me happy and settled is a gift for them. It just ripples. Right? It just ripples.”
- “My family shifting their work load... of course, they didn’t mind. You know, I’m a lucky person to have the family I have. But it still bothers a person (to think), who's going to take me today or who's going to take me next week?”
- “Generally, with my parents for sure, it’s just less stressful for them and it’s less involvement for them, which again I think, helps them deal with my situation, as well.”

### Adapting to the Experience of Illness

- “When you’re diagnosed with cancer there’s a big adjustment period where you have to get it through your head okay, this is happening to me. This isn’t a dream or a nightmare. This is really happening to me. So once you get through that, and once you accept that, I think then you want to do whatever you would in your regular life. So every time I came to (the hospital), every time I had to lie in the bed, I felt I was sicker than I really was, right? Because of the atmosphere...”
- “I kind of find (the hospital) quite depressing. Whereas here in the home environment, it’s a little better. I view myself as a happy-go-lucky guy, and like to joke around a bit. There are so many sick people (in the hospital) that it kind of brings you down. I don’t see myself as being sick anymore. I’m more on the healthy side now.”
- “I think when you’re home, it doesn’t remind you or it doesn’t; how can I say this? Receiving your treatment at home, it sort of feels more natural. When you have to go (to the hospital), to me, it just keeps reminding you that you’re still sick. And I try to live my life as if I'm not.”
- “I think cancer is a mental need in a lot of ways. If you think about something and you continue to think about it, it starts to disrupt your life and it starts to take over and it starts to eat at you. If you're not able to think about it, but still realize that it’s part of your life I think it’s a healthier way to be, and that will ultimately help you live a better life for however long you have left.”

### Improved Care Provision and Reception

- “I didn’t have a lot of energy and did not deal with the cold well. Even at zero, I was getting chilled really badly. So in that sense, (home chemotherapy) was really good. I could be in my home staying warm and getting it done. My veins are pretty internal. [Laughs] They have difficulty sometimes finding a vein for me. Whereas sometimes in a warm environment, they said it was better for them too.”
- “It was the best that I've had and I've had a few treatments; because I do have irritable bowel syndrome. On a bad day, it’s hard for me to get from point A to point B without having to look for a public washroom on the way. There was a time when my legs were like tree trunks because of the swelling. It was very difficult for me to travel from home to the (hospital).”
- “(My daughter) was very curious. She would ask ‘what’s that, mama?’ When we’re in (the hospital); when she’s in that different kind of situation, she would just observe. But when we were at home, she would keep on asking, 'What was that thing they did to you?'”
- “Instead, I would say, ‘Oh I have a dentist’s appointment and my tooth’s bothering me.’ And they were a lot happier with that. So, with the treatment at home, it was excellent because I didn't have to worry about any of that (stress on the children), right? I could just have my treatments done and then I would go pick up my son from pre-school with a band-aid on my hand. So that’s why the dentist helped a little bit. I'm sure they kept thinking 'Mom has really bad teeth!' [Laughs]”
- “I found out that when I went to the (hospital) in the beginning, it was really overwhelming. They give you a lot of information. And probably a lot of it went over my head. I might have had a question, and I might have had several questions. But I think I only asked one. And I don’t even remember what the question is now. I felt a little better being able to do it at home. One on one. And so, that was important because it made my next sessions easier. I think it was no fault on the (hospital) at all, but with the one on one here at the house, the questions were asked and answered and remembered.”
- “There’s such professionalism to them and there’s a fine line between knowing they’re the nurse and knowing I'm the patient. But it’s total respect and total care. Total care. I can’t say enough about those girls. It’s knowing who’s there and trusting them with all my heart.”

<table>
<thead>
<tr>
<th>Table 2: Quotations from sub-themes</th>
</tr>
</thead>
</table>

**Adapting to the Experience of Illness**

- “When you’re diagnosed with cancer there’s a big adjustment period where you have to get it through your head okay, this is happening to me. This isn’t a dream or a nightmare. This is really happening to me. So once you get through that, and once you accept that, I think then you want to do whatever you would in your regular life. So every time I came to (the hospital), every time I had to lie in the bed, I felt I was sicker than I really was, right? Because of the atmosphere...”

**Improved Care Provision and Reception**

- “I didn’t have a lot of energy and did not deal with the cold well. Even at zero, I was getting chilled really badly. So in that sense, (home chemotherapy) was really good. I could be in my home staying warm and getting it done. My veins are pretty internal. [Laughs] They have difficulty sometimes finding a vein for me. Whereas sometimes in a warm environment, they said it was better for them too.”

**Realignment of Resources with Values**

- “I think cancer is a mental need in a lot of ways. If you think about something and you continue to think about it, it starts to disrupt your life and it starts to take over and it starts to eat at you. If you're not able to think about it, but still realize that it’s part of your life I think it’s a healthier way to be, and that will ultimately help you live a better life for however long you have left.”
bound by “the system”. Although health care professionals strive to promote patient independence and care, there are still aspects of treatment that seem to pull the patient back into the traditional sick role. For many, cancer can be an all-consuming illness.

By keeping patients in their homes, there is a strong focus on adaptation. Adaptation generally refers to a feature that is especially important for an organism’s survival, and in this study, refers mainly to the ability to cope with cancer and cancer treatment. Being at home for treatments held great significance for some patients. The meaning of home has been studied by other researchers and has been described as a “therapeutic landscape” (Williams, 2002). Williams’ research beckons us to recognize that home not only represents a dwelling, but also a multitude of meanings, including: personal identity, security, and privacy.

Implications

The demand for quality cancer care continues to grow. Traditionally, many people argue that chemotherapy is best given in the hospital setting, but this research demonstrates that there are several reasons why we should consider moving cancer treatment into patients’ homes. Patients are often forced to fit the current health care system, rather than being permitted flexibility. Cancer can be a chronic illness, one that can take years of treatment. The loss of control that patients experience is often frustrating, depressing and wearsome for them. As healthcare providers, we must keep maximum focus on meeting the needs of our patients. By keeping daily life as normal as possible, and creating that “natural habitat”, we allow individuals to enjoy the life that is extended or preserved by receiving chemotherapy. This promotes the goals of quality that most health care providers possess.

Patient safety is a primary concern in home-based chemotherapy. Fortunately, the participants of this pilot project experienced no adverse events at home. One should also consider the risks of receiving treatment in hospital and hospital-acquired infections. According to Zoutman et al. (2003), we can expect that 220,000 occurrences of nosocomial infections will result in nearly 8,000 deaths in Canada in one year. By treating patients at home, we might avoid this potential complication. However, the option of returning to hospital should always remain if chemotherapy at home becomes troublesome for the patient. Patients should be offered opportunities to interact with other cancer patients if this is a need they are experiencing. Further investigations into the issues with home chemotherapy should be undertaken.

Another part of the debate about treatment at home relates to cost. Participants of this study spoke not only of the financial benefits of home chemotherapy, but also of their ability to redistribute time and energy to activities they valued. The literature in this area shows great disparity, and appears to be based on a variety of direct or indirect costs. It is often applicable only to the program under study. The question we need to ask ourselves as a society is, what are we willing to pay for quality cancer care? How would moving services from the hospital to the community impact the way in which we fund our health care system?

A recent article published by the Cancer Support Community (2010), an American organization, discussed the vulnerability of patients with financial strain and the potential for development of post-traumatic stress disorders. The report found that 81 per cent of patients experienced “moderate to severe” stress levels from the monetary burdens associated with care. These findings are echoed in Canadian research. Longo, Fitch, Deber, and Williams (2006) found that “a sizeable minority of cancer patients find the burden of out of pocket costs to be significant or unmanageable, even in a health care environment where much of the care falls within the public funding envelope.” Reduced financial costs were clearly described by patients in this study as an advantage to receiving chemotherapy at home. It would be useful, although complex, to measure the economic complexities of this service delivery model in future evaluations.

The concept of better adaptation to treatment or improved coping was a second concept described by participants. Some patients viewed themselves as less ill when they received treatment at home. There were fewer reminders of illness at home. Critics might argue that this is fostering an environment of denial. However, it is not that participants did not acknowledge their illness or take the appropriate actions to care for themselves, but rather, avoided the constant bombardment of their diagnosis. Suzanne Miller (2009) published an article on “healthy denial” and describes this as, “being able to acknowledge the diagnosis, communicate with the family, discuss a plan with the health care team, and then having processed it, move on to other life tasks. While it might look to others that we’re in denial, what we’re really doing is blunting the impact of the diagnosis so that it has the least psychological effect on our life and our psyche. This is actually a positive way to deal with the challenges of needed medical procedures, office visits and other interventions.” (Miller, 2009)

Anxiety and depression rates among cancer patients remain shockingly rampant, and it could be hypothesized that home chemotherapy might improve these figures. This is an area to be addressed by future research.

Improved care provision and reception was also described as a key component of the experience of receiving treatment at home. Participants thought they were more likely to remember to ask questions and to remember the answers provided than if they had been in the clinic setting. The participants felt better prepared to receive treatment, knew what to expect, and knew when it was important to seek help. It is possible that this may have resulted in fewer calls to triage nurses, saving time and hospital resources. These would be valuable indicators to measure in future evaluations of home chemotherapy programs.

Limitations

Although the experiences described provide much information for consideration, several limitations should be kept in mind. Recruitment for this research study was conducted by the nurses working on the pilot home chemotherapy project and, therefore, the potential for bias in patient selection must be acknowledged. Nurses may have chosen patients they felt were very satisfied with the program rather than those who had more negative views about home chemotherapy. An external evaluator, however, was also involved in this pilot project, and found similar positive results using Likert scale questions (Rocchio, 2010).

Some of the participants may have had difficult treatments in hospital prior to participation in the pilot project and, therefore associated fewer side effects with being at home, when this was not necessarily the case. Nonetheless, although the majority of the treatments given in the home had low risk of anaphylaxis or extravasation, they had the same risk as treatments given in the hospital for neutropenia, nausea, vomiting, and alopecia. Furthermore, patients would have received at least one treatment in hospital prior to being accepted into the pilot study.

Patients with multiple co-morbidities were not accepted into the program and, therefore, results are limited to this population. Recruitment of patients who declined home chemotherapy for this study was unsuccessful. There should be recognition that home chemotherapy may not be appropriate for all patients.

There is a great deal of controversy surrounding the topic of home chemotherapy, and many health care professionals are questioning the potential for success of such a program. By offering chemotherapy in the home, we are providing patients with choice in a situation where they are often left feeling vulnerable and powerless. As a society, we require qualitative research to add to our understanding whether the potential benefits outweigh any potential harm, and what we are prepared to accept in return for this choice.
Conclusion

In summary, the experiences described in this research were positive. For some participants, the option of having home chemotherapy allowed realignment of resources, adaptation to the experience of illness and improved care provision and reception. They received this treatment in a “natural habitat”; an idea that is strongly promoted amongst animal conservationists, but rarely among health care professionals. With the right level of care in the home, we can promote adaptation, or coping, to cancer treatment. This research suggests that the provision of treatment at home improves the experience of receiving chemotherapy for some patients. As the rates of cancer escalate, and the demand on the health care system increases, there will be pressure to shift services from the hospital to the community. There will always be situations where the provision of chemotherapy in hospital is necessary. But alongside this, home chemotherapy should remain an option for some patients with cancer.

REFERENCES


---

**Appendix A: Eligibility and Exclusion Criteria for the Cancer Treatment at Home Program**

<table>
<thead>
<tr>
<th>Eligibility Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient agrees to have home chemotherapy</td>
<td>1. Previous anaphylactic reaction to currently prescribed chemotherapy</td>
</tr>
<tr>
<td>2. Patient has a caregiver willing to participate in patient’s care</td>
<td>2. Severe physical or mental disability</td>
</tr>
<tr>
<td>3. Patient is medically stable</td>
<td>3. Patient has multiple, chronic or unstable health conditions</td>
</tr>
<tr>
<td>4. Patient and caregiver agree with treatment plans</td>
<td>4. Patient is on clinical trial protocol</td>
</tr>
<tr>
<td>5. Home is suitable for safe administration of chemotherapy</td>
<td>5. Patient is receiving home care/palliative care service from other providers</td>
</tr>
<tr>
<td>6. Home has phone, electricity and running water</td>
<td>6. Patient has poor venous access and is unwilling or unable to have a central line inserted</td>
</tr>
</tbody>
</table>

Note: The Cancer Treatment at Home program staff has the right to decline a referral if deemed necessary due to patient/nurse ratio.