Quality of Informed Consent: Measuring Understanding Among Participants in Oncology Clinical Trials

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Purpose/Objectives: To describe newly enrolled clinical trial subjects' knowledge and understanding of the oncology clinical trials in which they were participating.

Design: Descriptive, correlational.

Setting: The oncology center of a small community hospital in New England.

Sample: 8 patients who consented to enroll in oncology clinical trials.

Methods: The Quality of Informed Consent questionnaire was sent to 17 potential participants who recently had consented to participate in oncology clinical trials.

Main Research Variables: Knowledge of the basic elements of informed consent and participants' understanding of the clinical trials in which they were enrolled.

Findings: Scores on the Quality of Informed Consent questionnaire indicated that participants had a good overall understanding of the basic elements of informed consent as well as the clinical trials in which they were enrolled. However, half of the sample failed to understand that clinical trial treatment is not standard treatment and may involve additional risk when compared with standard treatment.

Conclusions: The results of this investigation provide valuable feedback regarding participants' understanding of the informed consent process. The Quality of Informed Consent questionnaire may be a useful tool for monitoring the quality of the informed consent process and contributing to patients' understanding of clinical trials and the research process.

Implications for Nursing: The Quality of Informed Consent questionnaire may provide valuable feedback regarding clinical trial participants' understanding of clinical trials and the research process. Individual responses to questions on the questionnaire may be used to aid personalized patient education and validation of the informed consent throughout trial enrollment. Future research efforts need to focus on the development of reliable tools to measure participants' understanding of informed consent and nursing interventions that improve the informed consent process as well as enhance patients' understanding of the research process.

Key Points . . .

- Current methods of obtaining valid informed consent from potential participants in oncology clinical trials may be insufficient to ensure patients' understanding of information about the proposed trial.
- The ability to assess individuals' understanding is essential to ensure the validity of the informed consent process.
- The Quality of Informed Consent questionnaire may be a useful tool for assessing and enhancing patients' understanding of clinical trials.
- Nurses are challenged to develop strategies that provide clinical trial patients with a better understanding of the clinical trial they are considering, identify areas of misunderstanding and correct them, and assess the outcomes of the informed consent process.

Clinical research is a necessary step in the process of translating scientific discovery and technical advancement into procedures and products that offer the prospect of a better life (Koski, 2000). Along with the potential benefits of clinical research come ethical and legal obligations to protect the rights of human participants. Informed consent is one way participants' rights are protected in clinical research. Grounded in the ethical principles of autonomy, beneficence, and justice, a valid consent can be conceptualized best as a communication process (Daugherty, 1999) in which an exchange of information takes place between a patient or participant and a clinician or investigator regarding an investigational or experimental treatment. To give genuine informed consent, potential participants must have access to sufficient, easily understood information and be given the opportunity to consider it thoughtfully and ask for clarification or additional information. Achieving this level of informed consent requires more than just acquiring a participant's signature (Sharp, 2001; Stiffler, 2003).

Several issues relate to obtaining true informed consent from individuals considering participation in oncology clinical trials. Current methods of obtaining valid informed consent may be insufficient to ensure patients' understanding of information about the proposed trial (Daugherty, Kiolbasa, Siegler, & Ratain, 1997; Erlen, 2000; Yoder, O'Rourke, Etnyre, Spears, & Brown, 1997). In addition, the problem of therapeutic misconception may exist among participants. Therapeutic misconception is a phenomenon in which research participants deny the possibility that major disadvantages or risks to participating in clinical research

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Digital Object Identifier: 10.1188/05.ONF.751-755

may exist that stem from the nature of the research process (Appelbaum, Roth, Lidz, Benson, & Winslade, 1987). For instance, even though participants may be told explicitly that scientific goals will have priority over therapeutic ones and the investigators' primary interests are in improving treatment for future patients, participants persist in believing that they will receive some benefit from their involvement in the research. Also, no simple, standard outcome assessment methods exist for the consent process (Joffe, Cook, Cleary, Clark, & Weeks, 2001a), thereby limiting researchers' ability to evaluate and clarify patient understanding of a clinical trial and its accompanying informed consent document.

Hubbard (1982) suggested that although obtaining informed consent may be physicians' legal responsibility, nurses have a moral responsibility to ensure patients' understanding of the entire consent process. As patient advocates and educators, nurses must be able to assess individuals' understanding to ensure the validity of the informed consent process. As the role of nursing in clinical research continues to expand, nurses are challenged to develop strategies that provide clinical trial patients with a better understanding of the trial they are considering, identify areas of misunderstanding and correct them, and assess the outcomes of the informed consent process.

The purpose of this pilot investigation was to describe newly enrolled clinical trial participants' understanding of the oncology clinical trials in which they were participating. The specific aims of the study were to describe (a) participants' knowledge of federally specified elements of informed consent, (b) participants' understanding of the important elements of the clinical trial, (c) which factors, if any, may be associated with greater knowledge scores, and (d) the informed consent process from participants' point of view.

1. A statement that the study involves research, an explanation of the purposes of the research and the expected duration of the subject's participation, a description of the procedures to be followed, and identification of any procedures which are experimental.
2. A description of any reasonably foreseeable risks or discomforts to the subject.
3. A description of any benefits to the subject or to others which may reasonably be expected from the research.
4. A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject.
5. A statement describing the extent, if any, to which confidentiality of records identifying the subjects will be maintained and that notes the possibility that the Food and Drug Administration may inspect the records.
6. For research involving more than minimal risk, an explanation as to whether any compensation and an explanation as to whether any medical treatments are available if injury occurs and, if so, what they consist of, or where further information may be obtained.
7. An explanation of whom to contact for answers to pertinent questions about the research and research subjects' rights, and whom to contact in the event of a research-related injury to the subject.
8. A statement that participation is voluntary, that refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and that the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled.

Figure 1. Basic Elements of Informed Consent

Note. From "Code of Federal Regulations: Title 21, Section 50.25: Elements of Informed Consent" by the U.S. Department of Health and Human Services, 2004, Washington, DC: U.S. Government Printing Office. Reprinted with permission.

Methods

Design

A descriptive, correlational design was used to conduct this investigation.

Sample and Setting

A nonrandom convenience sample of adult patients with cancer was recruited for this investigation. The study took place in the oncology center of a small community hospital in New England. Eligibility criteria included participating in the informed consent process of an oncology clinical trial in the previous two weeks, being older than 18 years of age, having sufficient reading ability to comprehend and answer the questionnaire, and being willing and able to participate in the investigation. All informed consent documents used in this investigation were formatted according to the National Cancer Institute's (1998) template for informed consent forms (see Figure 1).

Instrument

The **Quality of Informed Consent (QuIC) questionnaire** (Joffe et al., 2001a) is a standardized measure for assessing the adequacy of informed consent in research. The questionnaire measures research participants' knowledge and understanding of the clinical trials in which they are enrolling and is based on 13 independent domains derived from the eight basic elements of informed consent specified in federal regulations (U.S. Department of Health and Human Services, 2004). The QuIC questionnaire is written at an eighth-grade reading level and requires an estimated 7.2 minutes to complete. The questionnaire consists of three parts. Part A, which has 20 questions, measures participants' knowledge of the basic elements of informed consent specified in U.S. federal regulations. In part B, composed of 14 questions, participants rate their understanding of the important elements of the specific trial in which they have consented to participate on a five-point scale. Part C covers patients' perceptions of the informed consent process and includes questions regarding the actual consent process, sources of supplemental information, previous participation in research, and participants' demographic characteristics.

Content validity of the questionnaire was established after review by two independent panels of experts in the fields of bioethics, statistics, oncology, and clinical trial design (Joffe et al., 2001a). Test-retest reliability was examined with intraclass correlation coefficients of 0.66 for tests of objective understanding and 0.77 for tests of subjective understanding (Joffe et al., 2001a).

Procedure

Institutional review board approval was obtained, and self-administered questionnaire packets were mailed or hand-delivered to potential participants who recently consented to participate in an oncology clinical trial. A cover letter explaining the purpose of the study and instructions for completing and returning the questionnaire were included in each packet. The letter advised participants that returning the completed questionnaire signified their consent to participate in the

investigation. The name and phone number of the principal investigator were included on the cover letter as a contact if participants required additional information about the investigation. Those who met the study's inclusion criteria, agreed to participate in the investigation, and completed the study questionnaire were enrolled in the study.

Data Analysis

Completed and returned questionnaires were examined for eligibility and completeness before being included in the study. Data were entered into SPSS® 11.5 (SPSS Inc., Chicago, IL). The data were summarized using descriptive statistics, including frequency distributions, measures of central tendency, and dispersion. These statistics were examined to determine whether systematic missing data, outliers, or marked skewness were present.

Scoring the QuIC questionnaire was accomplished in two steps. First, responses to Part A were combined to form a knowledge score (i.e., A score), with a possible range of 0–100. Responses to Part B were averaged and normalized for a possible range of 0–100 to generate a self-assessment score (i.e., B score).

Bivariate correlations were performed on all variables to determine the direction and magnitude of any relationships. Significance for these correlations was set at alpha equal to 0.05.

Results

Participant Characteristics

The study was conducted over a 12-month period, from March 2002–February 2003. During that time, 19 patients consented to participate in an oncology clinical trial. Questionnaire packets were sent to 17 of these patients, inviting them to participate in the investigation. The remaining two patients became too ill to participate in the clinical trial and investigation. Nine (52%) questionnaires were returned to the investigator, and one was excluded from the study because the participant did not complete all of the study questions. Eight (47%) completed questionnaires were included in the final data analysis.

The mean age of the participants was 64.3 years (SD = 11.9), with a range of 39–76 years. The sample was predominantly male (75%), white (100%), and married (50%); had at least a high school or equivalent education (75%); and primarily spoke English at home (100%). A majority (88%) of participants had lung cancer and were enrolled in either an expanded access program (75%) or a phase II study (13%). The remaining subjects (12%) were enrolled in a phase III study of patients with breast cancer. The sample's demographic characteristics are summarized in Table 1.

Table 1. Sample Characteristics

Characteristic	n	%
Gender		
Male	6	75
Female	2	25
Racial background		
White	8	100
Marital status		
Never married	–	–
Married	4	50
Widowed	2	25
Divorced	2	25
Language spoken at home		
English	8	100
Highest grade or level of school completed		
Some high school	2	25
High school graduate or GED	4	50
Graduate or professional school	2	25

N = 8

Understanding of the Informed Consent Process

The mean score on Part A of the QuIC questionnaire was 81.5 (SD = 12.8), with a range of 62–100. All eight respondents stated that they understood they were participating in a clinical trial and that the primary goal of cancer clinical trials is to improve the treatment of future patients. In addition, all respondents stated that they understood that no direct medical benefit was promised as a result of trial participation and that the researchers' primary purpose was to determine the effects (i.e., good or bad) of a new treatment on patients and their cancer. All participants stated that they understood that participation in a clinical trial was voluntary and that they could decline to sign the consent form. Four of the respondents (50%) indicated that they understood that clinical trial treatment is not proven to be the best treatment for their type of cancer and may involve an additional risk when compared with standard treatment.

The mean score on Part B of the QuIC questionnaire was 93 (SD = 8.6), with a range of 77–100. Four of the eight respondents scored 100 on this section. All participants responded that they understood that their treatment involved research, what the researchers were trying to determine, the risks associated with treatment, the trial's effect on the confidentiality of their medical records, who to contact with additional questions, and the voluntary nature of participation in the trial. All respondents stated that, overall, they understood the clinical trial when they signed the informed consent form. A majority (75%) of respondents reported that they understood how long they would be in the study, the treatments and procedures involved (75%), which treatments were experimental in nature (75%), and alternative options to clinical trial participation (63%).

Participants' perceptions of the informed consent process were covered in Part C of the questionnaire. None of the respondents had participated previously in a clinical trial or reported that they felt pressured to participate in the clinical trial. All of the participants agreed that they read the informed consent form carefully and considered it an important source of information about the clinical trial. All participants reported they had enough time to learn about the trial before signing the consent form, had sufficient opportunity to ask questions, and received thorough answers to their questions. All eight participants were satisfied with the overall consent process. In addition, all of the participants considered participating in a clinical trial a way to maintain hope, and half stated that they participated in the clinical trial because they felt they would receive some medical benefit.

Analysis with bivariate correlations revealed a statistically significant ($r = 0.762$, $p = 0.028$) relationship between two study variables: participants' knowledge of the basic elements of informed consent specified by federal regulations and using

other physicians in addition to their oncology doctors as sources of information to make decisions regarding clinical trial participation. No other statistically significant relationships were noted between study variables.

Discussion

The results of this investigation suggest that participants had a good overall understanding of the federally specified basic elements of informed consent and the important elements of the trials in which they were participating. Participants also were satisfied with the informed consent process and reported that the consent document was a valuable source of information about the clinical trial. A discrepancy was present, however, among half of the sample in understanding that clinical trial treatment is not standard treatment and may involve an additional risk when compared with standard treatment. These findings support those of previous studies in which some patients, who thought of themselves as well-informed about their clinical trials, did not understand fully the experimental nature of clinical trial treatment (Daugherty et al., 1997; Joffe et al., 2001b). The severity of a patient's illness may contribute to this misunderstanding (Schaeffer et al., 1996); individuals with a serious diagnosis who are considering participation in an oncology clinical trial may not accurately process or retain all of the information given by researchers during the informed consent process.

All individuals in this study considered participation in a clinical trial a way to maintain hope. Therapeutic misconception may be influenced by patients' need to maintain hope. The seriously ill patients in this study may have wanted to believe that the experimental treatment would cure their illness even though they reported that they understood the purpose of the investigation. These results concur with those of Yoder et al. (1997), who suggested that hope and optimism may influence the extent to which patients accurately understand information in the consent form.

Implications for Nursing

The clinical trial nursing role involves many challenging dimensions, one of which is involvement in the informed consent process. Clinical trial nurses must communicate information about the nature and goals of clinical research, explain the details of the specific study, and assess subjects' understanding of the consent information (Ehrenberger & Lillington, 2004). Several authors have suggested that the contribution of nurses to the informed consent process may result in meaningful gains in research patients' understanding of their clinical trials (Aaronson et al., 1996; Berry, Dodd, Hinds, & Ferrell, 1996; Joffe et al., 2001b; Rosse & Krebs, 1999; Sadler, Lantz, Fullerton, & Dault, 1999; Yoder et al., 1997). Even though the role of clinical trial nurses is critical to enhancing patients' understanding of informed consent, the principal investigator ultimately is responsible for ensuring that informed consent is obtained.

Meade (1999) suggested that the use of supplementary aids and resources, including multimedia presentations and the measurement of literacy and understanding, also may contribute to participants' ability to understand their clinical trials. In this investigation, the QuIC questionnaire was a valuable tool for providing feedback regarding each individual's understanding of his or her clinical trial. Although the scores indicated that participants generally had a good understanding of the basic elements of informed consent and the individual trials, areas of misunderstanding did occur. Misunderstood or unclear areas revealed by the QuIC questionnaire may be addressed during subsequent patient encounters. Individuals' responses to questions on the QuIC questionnaire also may be used to continue personalized patient education and validation of consent throughout trial enrollment.

Future research efforts should focus on the development of reliable tools to measure participants' understanding of informed consent and nursing interventions to improve the informed consent process and enhance patient understanding of the research process. Customized interventions that address patients' learning needs and continue throughout trial enrollment may be most effective. In addition, research that examines the fragile balance between supporting patients' hope as a coping strategy and presenting the reality of clinical trial participation is necessary.

Conclusions

The results of this investigation provided valuable feedback about participants' understanding of the informed consent process; however, the study was limited by its very small and homogeneous sample. In addition, the length and complexity of the QuIC questionnaire may have contributed to the low percentage of returned questionnaires. Despite these limitations, the QuIC questionnaire may be a useful tool for monitoring the quality of the informed consent process and contributing to patients' understanding of clinical trials and the research process.

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