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Patient perceptions and willingness to participate in clinical trials

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HIGHLIGHTS

- Minority participation in gynecologic oncology randomized clinical trials is poor.
- Neither race, age, stage nor disease status impacted a patient's willingness to participate in a randomized clinical trial.
- A large minority population showed interest in participating in randomized clinical trials.
- Education about randomized clinical trials increased willingness to participate.

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ABSTRACT

Objective. To evaluate gynecologic oncology patients' perceptions and willingness to participate in randomized clinical trials (RCT) among an inner city population.

Methods. Informed consent was obtained. Demographics were collected and willingness to participate in a RCT was measured by the Attitudes on Randomized Trials Questionnaire (ARTQ). The Hospital Anxiety and Depression Scale estimated levels of anxiety and depression. A Perception Survey was created and tested as a screening tool for patients considering RCTs. Standard statistical tests were used.

Results. One hundred and one women participated, 54 (53.5%) were black, 31 (30.7%) were white, non-Hispanic and 15 (14.9%) were Hispanic. Screening for anxiety and depression revealed an 18.8% rate of moderate to severe anxiety and an 11.9% rate of moderate to severe depression. Willingness to participate in a RCT as measured by ARTQ scores was not significantly associated with race, levels of anxiety or depression. Twenty-eight percent of women would agree to participate in a clinical trial at baseline. An additional, 33 (32.7%), for a total of 61.4%, indicated agreement after targeted education with no statistical differences by race or psychological stressor. However, sixty-one percent of these women were black. The Perception Survey approximated the results of the ARTQ with reasonable accuracy (AUC 0.758, $p < 0.001$)

Conclusions. Neither race nor psychological stressor were significant indicators of willingness to participate in a RCT. Targeted education resulted in a majority of patients indicating willingness to participate in trials, especially among black women. Additionally, a novel screening tool was tested and performed well in this setting.

1. Introduction

Cancer, as a main cause of death in the developed world, will affect one out of every three women. Approximately 80,000 gynecologic malignancies are diagnosed and result in over 25,000 deaths in the US annually [1,2]. Standards of cancer care are established in the setting of clinical trials, and leading oncologic organizations, such as the National Comprehensive Cancer Network, recommend that clinical trials should be offered to all cancer patients [3]. Despite this, in North America, oncologic clinical trial enrollment is approximately less than 3%, with representation from minority ethnic and elderly groups even lower [1,2]. Scalici et al. recently investigated this issue by reviewing Gynecologic Oncology Group (GOG) trials between the years of 1985 to 2013 [4]. One hundred sixty-nine studies were reviewed with 44,820 patients included in clinical trials. They reported that 83% of

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participants were white, non-Hispanic (n = 37,321), 8% black (n = 3574) and 9% other (n = 3925). Between the years of 1985–1999 compared to 2010–2013 there was a 3.2-fold lower proportion of black women enrolled in clinical trials (21% and 6.7%, respectively, $p < 0.01$) [4]. With an already low baseline of minority recruitment, these falling rates have piqued the interest of researchers seeking to understand the alarmingly low representation of minority women in clinical trials [5]. Unfortunately, recent studies have utilized non-validated survey designs and used minimally diverse patient populations, leaving them methodologically ill-equipped to understand this disparity [6,7].

The present study uses a validated tool entitled Attitudes to Randomized Trials Questionnaire (ARTQ) that has been employed in cancer populations to assess a patient's understanding of clinical trials and their willingness to participate in these types of investigations [8,9]. Flessing and co-workers demonstrated validity of this tool in a study with 265 patients invited to join one of 40 different oncologic clinical trials. They found that the majority of patients (77.4%) agreed to enroll in a trial. This outcome was predicted by the ARTQ with 80.4% accuracy [9].

Additionally, stress produced by the psychological states of anxiety and depression has been shown in gynecologic oncology patients to have a significant effect on quality of life. This is particularly relevant as many patients diagnosed with gynecologic cancers have some degree of one or both disorders [10]. As concerns about quality of life such as treatment severity and increased inconvenience are reasons patients have given when opting out of clinical trials, we wished to investigate if there was a direct association between depression and anxiety and willingness to participate in clinical trials [5,6].

In the present study we explored gynecologic oncology patients from an inner city hospital with a robust minority population. We hypothesized that women of minority race would be less willing to participate in clinical trials as measured by the ARTQ and sought to evaluate whether education affected their choice. Additionally, we hypothesized that significant levels of anxiety and/or depression would be associated with a decrease in willingness to participate, regardless of race. Finally, we sought to test a novel short-form survey of patient perceptions about clinical trials that could be used in future studies as a screening tool to predict patient enrollment in clinical trials, and thereby tailor patient education.

2. Methods

2.1. Patient population and data sources

A convenience sample of patients that presented to the gynecologic oncology clinics for an initial intake, follow-up or consultation visit were approached for survey participation and informed consent was obtained. Patient demographics and disease specifics were then obtained from the electronic medical record. It was not necessary for patients to be eligible for any specific clinical trial when approached to take part in this study. The institutional review board at Temple University approved the study. (IRB #21957).

2.2. Surveys

In order to assess each patient's perception of randomized trials along with measures of anxiety and depression, three surveys were completed [9,11]. The ARTQ is a seven item instrument developed to assess patient perceptions of oncologic clinical trials [see Supplemental item 1]. It includes three domains: positive or negative perceptions of medical research in general, willingness to personally participate in research and willingness to personally participate in research involving randomization. The first three questions distinguish people who would consider enrolling in a clinical trial from those who are uncertain or would not want to participate. Respondents are asked to indicate “Yes”, “No”, or “Do not know” to the three questions. Respondents who are uncertain or who would not want to participate in a trial are then asked to read three statements that provide background information as to why doctors and researchers perform studies. The statements also describe a participant's right to withdraw from the study at any time, and a statement related to the treatment and side effects associated with the trial. Respondents answer each question consecutively and then answer a seventh and final question that asks whether knowing the extra information contained in the statements would now encourage them to reconsider participation [9]. This document has an estimated Flesch-Kincaid grade level of 6.7.

The Hospital Anxiety and Depression Scale (HADS) [see Supplemental item 2] has been designed and validated to identify possible and probable anxiety and depression among patients in non-psychiatric hospital clinics. It is a 14 item scale with statements that can be linked to a global level of anxiety or depression [10]. It is then graded and divided into normal, mild, moderate or severe. This measure has an estimated Flesch-Kincaid grade level of 9.4.

Lastly, a novel Perception Survey (PS) [see Supplemental item 3] was created after review of numerous publications about factors contributing to 1) patients joining oncologic clinical trials; 2) women joining clinical trials; 3) minorities joining clinical trials; 4) minorities joining oncologic clinical trials [1,5,7,11–16]. The PS items were then based on the most common and overlapping themes that patients reported in regards to participation in clinical trials. This un-validated tool is a 12-item questionnaire with responses of “Agree” or “Disagree” to statements about trials. This document has an estimated Flesch-Kincaid grade level of 6.7.

2.3. Data collection and analysis

The details of each patient's demographics and disease course were abstracted from the medical record. The variables assessed included: race, current age, age at diagnosis, cancer stage, location, histology, primary surgery, history of radiation, chemotherapy or clinical trial participation, disease state and whether cancer diagnosis was incidental.

2.4. Statistical analysis

Mean and range values were used to describe continuous data, with discrete variables displayed as totals and frequencies. For univariate analysis, 2-tailed t tests were used to compare continuous data, whereas the chi square test was used for categorical variables. Based on univariate analysis, a 5-question subset of the 12-item perception survey was used to develop our final screening tool. In order to estimate the new tool's efficacy at predicting willingness to participate in a clinical trial, each response was given a numeric value (0 for unwillingness to participate, 1 for willingness) and these were summed to arrive at an overall score for each respondent. The resulting scores were then used to construct a receiver-operator characteristic (ROC) curve comparing ARTQ to PS responses.

3. Results

3.1. Patient characteristics

A total of 132 patients were approached to complete the surveys. One hundred one patients agreed to participate and had full survey completion. The patient characteristics are summarized in Table 1. Greater than half of the population was black (53.5%), with nearly one third white, non-Hispanic (30.7%) and remainder Hispanic/Other (15.9%). The mean patient age was 58.2 years (range, 25–85), and the mean age at diagnosis was 56.5 years (range, 36–84). At the time of data collection, 58.4% of patients had no evidence of disease and had completed therapy, 27.7% were alive with disease and either on therapy or being assessed for recurrence. The remaining 13.9% did not have a cancer diagnosis. Half of the patients had local disease (35.6% stage I