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The benefits of prayer on mood and well-being of breast cancer survivors

Ellen G. Levine,
Public Research Institute, Biobehavioral Research Center, San Francisco State University, 1600 Holloway Ave PP750, San Francisco, CA 94132, USA

Caryn Aviv,
School of Arts, Humanities, and Social Sciences Core Curriculum and the Center for Judaic Studies, University of Denver, Sturm Hall Room 419 2000 E. Asbury Avenue, Denver, CO 80206, USA

Grace Yoo,
Public Research Institute, Biobehavioral Research Center, San Francisco State University, 1600 Holloway Ave PP750, San Francisco, CA 94132, USA

Cheryl Ewing, and
University of California, San Francisco, Box 1710, 1600 Divisadero St., San Francisco, CA 94143-1710, USA

Alfred Au
University of California, San Francisco, Box 1710, 2330 Post St. B639, San Francisco, CA 94143-1710, USA

Ellen G. Levine: elevine@sfsu.edu

Abstract

Objectives—Prayer is becoming more widely acknowledged as a way to cope with cancer. The goal of this study was to compare differences in use of prayer between breast cancer survivors from different ethnic groups and examine how use of prayer is related to mood and quality of life.

Methods—This study used a mixed methods design. One hundred and seventy-five breast cancer survivors participated in a longitudinal study of survivorship. Women completed in-depth qualitative interviews and a battery of measures including quality of life, spirituality, social support, and mood.

Results—Eighty-one percent of the women prayed. There were no significant differences between the groups for any of the psychological, social support, or quality of life variables with the exception of higher benefit finding and spiritual well-being among those who prayed. The data did show that women who prayed were able to find more positive contributions from their cancer experience than women who did not pray. The interviews showed that those who prayed tended to be African American or Asian, Catholic or Protestant. The prayers were for petitioning, comfort, or praise. Some of the women stated that they had difficulty praying for themselves.

Conclusions—While there seems to be few differences in terms of standardized measures of quality of life, social support, and mood between those who prayed and those who did not, the interviews showed that certain ethnic minority groups seem to find more comfort in prayer, felt closer to God, and felt more compassion and forgiveness than Caucasian women.

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Correspondence to: Ellen G. Levine, elevine@sfsu.edu.

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Keywords

Prayer; Spirituality; Breast cancer; Ethnic differences; Quality of life; Psychological

Introduction

For thousands of years, prayer has been used in times of adversity. The act of prayer itself has been associated with good health, quality of life, and lower levels of psychological distress in healthy people [30]. Prayer has been defined as "communication with God as an experience and expression of the human spirit" ([39], pg E3). It allows people to offer praise and thanks, ask for help or guidance, affirm their faith, express hopes and fears, and find solace, closure, and support from other worshippers [48]. Prayer is becoming more widely acknowledged as a way to cope with illness or maintain well-being. Shahabi et al. [45] used data on 1,422 people (54% women) who participated in the General Social Survey and had answered questions on spirituality and religiosity. Prayer rates among this population were high. Twenty-four percent said that they prayed several times a day and 30% once a day. Another survey of 100 people (52 women, 48 men) from across the USA found that 41% of the women and 29% of the men used prayer for health, 75% used prayer for wellness, and 71% used prayer for illness [37]. For those who use prayer, frequency increases with illness [48]. Koenig and his colleagues [29] interviewed 811 older adults admitted to a hospital and followed them for 9 months. Almost all (98%) had a religious affiliation, and 80% used prayer. They found that those with the highest use of prayer and organized religion spent the least number of days in the hospital.

Prayer can be a private or public behavior. People can pray either individually or within a group setting. One can pray or be prayed for by others, and one can pray anywhere. For example, among African-American and Hispanic women, people report praying independently of church membership [42]. There are several types of prayer including petitionary, praise, existential pleas, as a way to express emotion and reduce distress, seeking guidance, forgiveness, inner strength, and feeling closer to God [18, 39, 48]. Use of prayer has usually been assumed to be the result of stress reduction [7] or cognitive reframing [26].

While the effects of prayer on health have been understudied [37], prayer seems to be frequently used by cancer patients to cope with their cancer [1, 25, 37]. In the McCaffrey et al. [37] study, of the people with cancer (n= 27), 34% used prayer for cancer. Of those who used prayer for cancer, 81% found it to be very helpful. Yates et al. [51] surveyed 752 newly diagnosed cancer patients (52% with breast cancer). Prayer was used by 77% of the patients. In California, Goldstein et al. [19] found that of a survey of 55,428 (56% Caucasian) adults, 1,844 had cancer and used complementary therapies including prayer. Cancer patients were more likely to use prayer (58%) than those with other health problems (50%). In two follow-up surveys of this sample, Ambs et al. and Goldstein et al. [1, 20] found that, of 1,777 of the participants in the Ambs et al. study and 1,844 in the Goldstein study with cancer that were re-contacted, 57% and 58%, respectively, used prayer as a way to cope with cancer. Again, this figure was higher than those with chronic illness (49% and 50%, respectively) and healthy individuals (38% and 36%, respectively). Meraviglia [39] found that, in a sample of 84 breast cancer survivors, 71% felt that they had a close relationship with God, and 51% prayed daily. Prayer was significantly correlated with lower education, lower income, and greater psychological well-being but not with symptom distress.

While spirituality is known to be a significant coping strategy in cancer patients overall (e.g., [14, 25, 26]), breast cancer patients in particular make significant and explicit use of

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prayer and other spiritual healing approaches as part of their response to their illness. In a large Canadian study (*n*=300), 81% of women with breast cancer chose to use prayer as a way to help them cope with their illness and treatment [40]. Another study of 112 breast cancer patients found that 76% specifically used prayer as a healing modality [50]. A larger survey of women with breast cancer in American Cancer Society support groups found that 88% felt that spiritual or religious practice was important in coping with their illness [27]. Bloom and her colleagues [8] found that in their sample of 185 young breast cancer survivors, 64% prayed at baseline, and 67% were praying 5 years later. And, a more recent study of 126 women with breast cancer (87% Caucasian) found that 58% used prayer or had a spiritual practice [22]. However, most of the respondent samples in these studies were primarily Caucasian.

Spirituality and prayer are more common among African Americans than Caucasians [1, 34, 42]. Mansfield et al. [34] conducted a random telephone survey of 1,033 households in North Carolina. This study had a larger sample of African Americans than the others cited above (*n*=281 or 27%). They found that 91% of the Caucasians and 97% of the African Americans prayed for guidance, help, or healing self or others sometimes, occasionally, or often, with 66% of the Caucasians and 82% of the African Americans praying for guidance, help, or healing self or others often. Sixty-six percent of the Caucasians and 80% of the African Americans prayed for healing of their own medical problems sometimes, occasionally, or often, with 38% of the Caucasians and 61% of the African Americans praying for healing of their own medical problems often. Seventy-seven percent of the Caucasians and 89% of the African Americans believed that God acted through physicians to cure illness. In another study in the same area as Mansfield et al., Lopez, Eng, Randall-David, and Robinson [33] interviewed 13 breast cancer survivors and found that they also felt that medical treatment is a complement to prayer and that God works through doctors to heal. Ellison [17] examined data from the National Survey of Black Americans. In that sample, 1,344 people could identify a major problem that caused them distress, and 80% (1,299) of them turned to prayer to cope with it. The odds of turning to prayer were five times higher for respondents dealing with illnesses, chronic conditions, or injury of family or friends than for people with problems unrelated to health or bereavement. However, few studies have examined different ethnic groups, and to our knowledge, no study has compared African American, Asian/Pacific Islander, Caucasian, and Latina breast cancer patients in terms of use of prayer.

Prayer is seen as being protective as well as comforting during illness. Prayer, reading the Bible, and the church are a major part of African-American women's lives. African Americans tend to believe in God and that prayer is health-protective [21, 42]. Ang, Ibrahim, Burant, Siminoff, and Kwoh [2] surveyed 596 people seen for chronic knee or hip pain. Forty-four percent of the sample was African American. Eighty-seven percent of the African Americans perceived prayer as being very or somewhat helpful in coping with their pain versus 73% of the Caucasians.

Few studies have examined prayer use among people from other ethnicities. In the Goldstein et al. [19] sample, African Americans were more likely to use prayer than Latinos, Caucasians, or Asian Americans. Asian Americans were the least likely to use prayer. However, Ashing-Giwa et al. [5] noted that Asians and Latinas also emphasized prayer. Among Latinas, the practice of *curanderismo* (involvement of lay health practitioners) involves prayer [42]. Howard, Balneaves, and Bottorof [24] conducted a meta-analysis of 15 qualitative articles examining minority women's (Asian, African American, Hispanic, and aboriginal) breast cancer experiences. All of the groups mentioned an increase in prayer than before their diagnosis.

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This paper focuses on the use of prayer by women with breast cancer from four ethnic groups: African American, Asian/Pacific Islander, Caucasian, and Latina. Our hypotheses were that African-American and Latina women would use prayer more frequently than Asian/Pacific Islanders and Caucasians. In addition, we thought that women who prayed would be less distressed, have more social support, and have a higher quality of life than those who did not pray.

Materials and methods

Participants

Women who were no longer than 4 years posttreatment for primary breast cancer (stages 0–II) were recruited from various sites in the San Francisco Bay Area. Eligibility criteria for study participants were: (1) diagnosed and treated not more than 4 years previously; (2) Over the age of 18 at the time of the diagnosis; (3) stage 0, I, or II disease only; (4) able to read and speak English, Chinese or Spanish; and (5) no prior history of breast cancer. The women were recruited from a number of different sites including major hospitals, ethnic organizations, cancer resource centers, and health fairs. Letters were also sent to women who had their surgery and treatment done at the University of California San Francisco Comprehensive Cancer Center. Data on potential participants were also obtained from the Northern California Cancer Center. All recruitment procedures followed Health Insurance Portability and Accountability Act regulations.

The approach to this study included a mixed method study that incorporated two phases. Mixed methods offer triangulation of the data. Triangulation through multiple methods improves the validity of the research [15, 26, 36]. Mixed methods allowed us to not only look at the relationship between use of prayer and mood, quality of life, and social support but to also examine these relationships in depth. The first phase of this study was to examine quantitatively the relationship between prayer, quality of life, social support, and mood. After we examined quantitative data, we wanted to better understand qualitatively the dynamics of prayer on mood. The qualitative portion allowed us to determine themes underlying the use of prayer that we could not capture quantitatively. Therefore, we conducted in-depth qualitative interviews at the participant's home or a public place convenient to the respondent.

Measures

For the first part of the study, the women were asked to complete the following measures:

1. *Quality of life* was measured using the Functional Assessment of Chronic Illness Therapy-Breast (FACIT-B) [10]. The FACIT-B consists of 28 items designed to assess seven domains common to all cancer patients: physical well-being, social/family well-being, emotional well-being, and functional well-being, with separate additional subscales for different cancers that pertain to specific symptoms of each type of cancer.
2. *Spirituality* was measured using the Functional Assessment of Chronic Illness Therapy-Spiritual (FACIT-Sp) [44], which consists of 22 items measuring such concepts as meaning and purpose, a sense of harmony and peace, and closeness to God or a higher being. It is divided into three subscales: faith/spiritual beliefs, meaning and peace, and additional spiritual concerns (e.g., love, hope, etc.). It has been used in breast cancer studies (e.g., [14, 31]).
3. *Social support* was measured using the Interpersonal Support Evaluation List (ISEL) [13], which is a 12-item measure of the number of social roles regularly engaged in (e.g., spouse, friend, family member, worker) and the number of people

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talked to (in person or on the phone) within these roles in a 2-week period. The scale has three subscales: appraisal, belonging, and tangible support. We also added a subscale on spiritual support.

4. *Social networks* were also measured using the Social Network Index(SNI) [12]. The SNI assesses participation in 12 types of social relationships. These include relationships with a spouse, parents, parents-in-law, children, other close family members, close neighbors, friends, workmates, schoolmates, fellow volunteers (e.g., charity or community work), members of groups without religious affiliations (e.g., social, recreational, or professional), and members of religious groups. One point is assigned for each relationship for which respondents indicate that they speak (in person or on the phone) to someone in that relationship at least once every 2 weeks.
5. *Mood* was measured using the Profile of Mood States [38]. It is made up of 65 items that are divided into six subscales: tension–anxiety, depression–dejection, anger–hostility, fatigue–inertia, confusion–bewilderment, and vigor, with a combined total mood score. It has been used in studies with cancer patients [e.g., 14, 31].
6. *Benefit finding* was measured using the Benefit Finding Scale [49]. It is a 17-item measure assessing perceived benefits as a result of having an illness (e.g., cancer). It has been used in several breast cancer studies [3, 9].

Procedure

Once, a woman contacted us and was found to fit all of the eligibility criteria; a research assistant contacted her to set up an interview. In order to increase compliance, the interview was conducted wherever the participant wished. Many times it was at her home, but interviews were also conducted in coffee shops and other public places. These tape-recorded interviews lasted approximately 90 min. Interviews were conducted in English, Chinese, and Spanish. The interviews were semi-structured, with a series of open-ended questions about types of social support used at diagnosis, during treatment, and after treatment; spirituality; psychosocial impact of breast cancer; general well-being (quality of life); impact of breast cancer on quality of life; reactions of family members; ways of coping; work experiences; advice to other women diagnosed with breast cancer; and recommendations to the community for programs to support breast cancer patients and survivors. We also allowed the participant to go beyond these topics if she wished. The audiotapes were then transcribed and translated if necessary.

Statistical analyses

Analyses of variance with further *t* tests if warranted and chi-squared tests were performed on the continuous and nominal variables, respectively. We also performed Pearson correlations on the continuous variables. To analyze the qualitative interview data, we used a grounded theory approach [28, 47] to guide our interpretations. Grounded theory provided the best methodological fit to develop iterative analyses in order to better understand how and why participants cope with breast cancer through prayer and to code for emergent themes in the data. First, each researcher independently reviewed interview transcripts for content regarding spirituality and prayer. Next, the transcripts were independently coded and analyzed for themes that appeared repeatedly in the text. Coding was iterative, and refinements were made based on weekly project discussions until we reached a consensus on a final definition of each code. Finally, individual textual excerpts within each coding category were evaluated to determine whether they accurately fit the definition of the code and whether, how, and why there were substantive differences and variations across the

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individual textual excerpts within each code. Throughout this coding process, we developed memos to map our emerging analyses. Thus, verification of the accuracy of the coding scheme (conceptual categories, their definitions, and the observations coded within each category) occurred using both inductive and deductive methods [47].

Results

Demographics

We used various methods of recruitment in this study. Initially we sent out 348 letters to women who had been seen at the University of California San Francisco Comprehensive Cancer Center. An additional 1,097 were sent to women who were in the Northern California Cancer Registry. Two hundred and fifty-four women (18% of respondents) responded to the letters. We also recruited from health fairs, local support groups, and others working in the area. The initial sample was 175, representing 50% of the women who contacted the study (total number was 352). Of the 177 women who called but were not eligible for the study, reasons for not being eligible included not being able to contact the woman after she called (16), was diagnosed longer than 4 years previously (7), did not have stage 0, I, or II cancer (10), lived too far away to be interviewed (33), was currently in treatment (12), and did not speak English, Spanish, or Chinese (8). After we stopped recruiting Caucasian women (we had filled our quota), an additional 39 Caucasian women called the study. A further 23 women dropped out of the study after the first interview. Demographics for the entire sample are presented in Table 1. Overall, the number of women in each ethnic group was fairly even, except that there were fewer Latina women than the other ethnic groups (only 13%). The women came from all over the world, but the majority were from the USA or Canada (67%). Thirty-four percent of these women were Protestant, 25% were Catholic, 4% were Jewish, 4% were Buddhist, 4% had other religious traditions, and 18% were not practicing any religion. Almost half (47%) of the women had stage I disease, 45% had stage II disease, and 6% had ductal carcinoma in situ (DCIS)/stage 0 disease. Half of women were married/partnered (50%), and 58% were either a college graduate or had some post-graduate training. Mean age was 58 (range from 31 to 83), and mean time since diagnosis was 24 months (range 4–95 months). Time since diagnosis for Caucasians was significantly lower than Asian/Pacific Islander women (p=0.04). African-American women tended to be older than the others, but this was not significant (p=0.06). Sixty-nine percent of the women felt that their health was good to excellent at the time of enrollment into the study.

Transcripts were available for 155 women. Not all of these women mentioned spirituality or prayer. Although 97 (56%) of the women stated that they had an active spiritual practice, 133 women (76% of the overall total, 81% of the women for whom we had transcripts) stated that they were spiritual in some way. Of those, 71 (48% of the entire sample) said that they prayed. Demographics for the entire sample as well as this subgroup are presented in Table 2.

There were no differences between the groups (prayed versus did not pray) on age (mean overall was 57) or time since diagnosis (mean overall was 23.8 months). The sample was almost evenly split in terms of stage of disease, with 48% having stage I and 45% with stage II disease. The majority of the women were married or partnered. Over half of the African Americans (66%), Asians/Pacific Islander (44%), and Latinas (65%) said that they prayed. In contrast, only 24% of the Caucasians said that they prayed. Over half of the Catholics (57%) and 66% of the Protestants prayed. In contrast, only one of the Jewish and one Buddhist participants (14% for each) prayed. Over half of the women who prayed said that they had an active spiritual practice (68%), while 45% of the women who did not pray had an active spiritual practice. Interestingly, 26% of the women who said that they were non-

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practicing or did not have a religion prayed. There were also differences in prayer rates between women of different educational backgrounds. None of the women who had less than 12 years of education prayed, while 64% of those who were high school graduates, 64% of those with some college, 50% of college graduates, and 27% of those with post gradate education prayed. Women who said that their health was poor were more likely to pray (60%) than women who stated that their health was excellent (27%). As expected, significantly more women who prayed reported that they had an active spiritual practice (p=0.001).

Quantitative data

Differences between those who did and did not pray are presented in Table 3. Since Mann–Whitney tests showed that the variances were unequal for the FACIT-Sp, Fatigue (p=0.02), and Functional Well-Being (p=0.02), analyses of variances were performed instead of t tests. There were no significant differences between the groups for any of the psychological or quality of life variables with the exception of benefit finding (higher among those who prayed, F=5.5, p=0.02), while those who prayed had significantly greater spiritual well-being (F=−5.5, p=0.01) and faith and assurance (F=20.7, p=0.00) as well as for the additional spiritual items (F=4.0, p=0.05). There were no significant differences for meaning and peace. The other subscale (additional items) only approached significance (F=3.4, p= 0.07). Surprisingly, there were no differences on any of the social support measures.

We then examined the relationships between prayer, spirituality, quality of life, mood, and social support for the entire sample. Pearson r correlations are shown in Table 4 for spirituality and non-parametric correlations in Table 5 for prayer. Women who scored highly on meaning and peace, the additional spiritual items, and overall spirituality had significantly higher quality of life, higher social support, and less distress (on the profile of mood states, higher scores indicate higher distress). The only significant correlations for the Faith and Assurance Subscale were with meaning and peace, overall spirituality, and benefit finding. It is interesting to note that there were few significant correlations with use of prayer, although in contrast to the spiritual scales, it did correlate significantly with faith and assurance (r=0.29, p<0.01) as well as with overall spirituality (r=0.22, p<0.01), additional items (r=0.19, p<0.01), and benefit finding (r=0.18, p<0.01).

Qualitative data

Although the quantitative data did not show significant differences in mood among the women who prayed and did not pray, the qualitative data indicates that this practice is important to women from all of the ethnic groups. In this sample of women, prayer helped women from all religious backgrounds cope with their cancer diagnosis. Women received comfort and strength through prayer. For some women, prayer meant a community praying for them, and for some, prayer was a very internal experience.

Petition prayers—Most of the women prayed for healing. For example, a 57-year-old Filipina Catholic woman said that: “I pray for healing, lots of prayers for healing and prayers for forgiveness, joy, hope, faith and love, that is my inner strength now.” She went on a spiritual pilgrimage to a religious site in Portugal:

> “We went to this place it’s called Santorium, it’s where the bleeding host is reposed, where it stays. And when I entered that church, I said oh my God. I said it’s not really the whole host that I received. It’s bleeding. I said oh my God. I said I believe. I said that you’ve changed it from body and blood. Remember He said, “body and blood.” I said oh my gosh, it’s really a flesh. The one, the bread, that we’re taking is really real flesh. And it was bleeding. Wow, amazing. I said oh

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> Lord please, I need your help. I am sick. That's why I saw you. I said, please help me [*whispers*]. And then I went down, and everything was just peaceful. And then we went to Mount Carmelia monastery. We were the only ones who were permitted to enter because we have a priest and we had permission to enter the church. And so, the tour guide said, "make your petitions, because Sister Lucia is always in front of the blessed." What she does is always pray, so you write your petitions and then we'll give them to her. So, this basket was being you know…being pulled down to put our petitions. And then they pulled it up again going to her, so I put my petition and I said, Sister Lucia, please pray for me. I have this cancer and I, I want healing from you. And I want I'll be healed going home. So, please could you show me who are these people who will help me along the way?"

For Catholics, "the fundamental divine miracle is the incarnation, death, and resurrection of Jesus; the church claims that this event had effects on the whole human race" ([16], p. 537). The Church promotes healing through ceremonies, ritual, and liturgy. Prayer is important, as is the belief that one will be healed through the acceptance of the "body" of Christ. For the woman quoted above, being present in a place of miracles, where "the bleeding host" (of Christ) was present, was being in a healing place. She also acted through an intermediary, a sister at the monastery. Her journey is much like that of others who have searched for healing at other pilgrimage sites such as Lourdes in France [41]. This woman had a strong faith in miracles, which is consistent with the teachings of the Catholic Church. She also said: "…strong faith and belief. Belief in miracles. And I have strong family support and I relied on prayers and the prayers of others. So, everything is up to God. Just keep on praying and you'll be fine. So, that's what happened. That's what I did. So, have a strong belief." Catholics also believe that through confession and repentance they will be forgiven. One 69-year-old Filipina woman said that, as a result of her illness, she went to her first confession in many years. However, not only Catholics used petition prayers. A 65-year-old Mexican Protestant woman said: "I did spiritual readings everyday, prayed and just asked God for guidance. I mean that was it and I knew that my family and friends were praying for me and I had a sense of empowerment that, a sense of peace that I know I didn't initiate myself so it was very comfort from the spiritual aspect."

Prayers for comfort—Faith and religion also provide comfort in times of crisis. God is seen as a guiding force that will give them strength [32, 35, 45]. A 34-year-old African Muslim woman from the Caribbean used prayer to help her feel better:

> I started doing visualization and seeing a bright light. So just doing my own meditative ways along with my spirituality. But just being positive and even when I actually feel like exhausted or something aches or just turning it around and saying, 'Oh I feel fine. I…' Even though it's hard and I'm—I'm in pain just saying the opposite of what I may feel, you know, to me I feel is what's going to keep me alive and has kept me alive.

The 39-year-old Mexican Catholic did as well:

> Oh yeah, prayer was very helpful…general meditation was good, but that was more like not necessarily Catholic that was just like trying to calm down the body, trying not feel the pain and all that….

Although she didn't consider that as being spiritual

> …and like I said that has nothing to do with spirituality, but I did used to pray a lot, read the Bible and faithfully. I always do but even more faithfully go to Church every Sunday and it was funny even though there are different parishes. I would choose only one Church.

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A 48-year-old Caucasian New Age Christian woman said prayers before going in to surgery and treatment: “the prayer protection. You know, ‘The love of God surrounds me, the love of God unfolds me, the power of God protects me, and the presence of God watches over me. For wherever I am God is and always shall be.’ So I said that prayer—I said it before I went into surgery then and I said it in the—in the surgery room for breast cancer.”

Prayers of praise—Many religious traditions have prayers of praise as part of their rituals. Some of the women also offered prayers of praise to God about being happy to be alive. A 60-year-old African-American Baptist woman said: “I just hope someday there is a cure. And…I just praise God for each and every one. And blessings for each of us that do suffer with this disease and have this disease, because we never know if its going to reoccur or if its gonna metastasize itself somewhere else, but we just got to keep prayer that God knows best and He’s able to keep us strong.” The 57-year-old Filipina Catholic woman who went on the pilgrimage praised while affirming that she would be healed:

> But then you are still, you are by yourself, by myself I’m already forming something there. I’m going to be healed. I’m going to be healed and I said all of these will be healed and all of this will get out of my body, so help me God. That’s all. And then you know just do your praising. I praise you and I thank you and I praise you and every time thank you Jesus. I praise you Jesus. That’s all. It’s very simple. But then you are still, you are by yourself, by myself I’m already forming something there. I’m going to be healed. I’m going to be healed and I said all of these will be healed and all of this will get out of my body, so help me God. That’s all. And then you know just do your praising. I praise you and I thank you and I praise you and every time thank you Jesus. I praise you Jesus. That’s all. It’s very simple.

Another 57-year-old Mexican Catholic woman encompassed others into her prayers and prayed in various situations:

> Everyday. I said Lord just let me know get through this. Help my mom, help my daughter and you know like that. So, that we could all get through this. No. I just felt that all I had to do was talk to Him Oh yeah, and I say them now even when I’m on the bus.

A couple of the women felt guilty that they had only prayed while they were sick. For example, a 40-year-old Vietnamese-American Buddhist woman said: “You know one thing I did do was during my illness. I was not a religious person I mean not a devoted Buddhist before nor I am now, but this is kind of bad but during my illness though, I pray everyday.”

Difficulty in praying for self—Many times, women are caregivers for others and find it hard to take time for themselves. This is also reflected in the use of prayer. Some women had been used to praying for others and felt uncomfortable praying for themselves. As a 62-year-old Caucasian woman who had been raised Catholic said:

> Yeah. I’ve always been in touch with it, but I…it was always one of those things that was there—I mean I pray daily—but most of my prayers had always gone for others—my children…friends…my father…my mother…people that were in need. I—I seldom really prayed for me, oddly enough! Other than to ask for guidance how to help others, you know, who were struggling. Not that I haven’t had struggles in my life, but nothing that ever felt like—I guess I look at what goes on in our world and I always feel like…the attention needs to go somewhere else—my needs—I’m doing okay! And this time…no…I didn’t ask for things like “I need a cure” or “I want a miracle.” I never asked for that—I never believed that, that’s within God’s plan for us. But I certainly asked for guidance and courage…and…

> um, yah, and it came. Absolutely came. And so yeah, my faith and spirituality have definitely strengthened.

Other spiritual behaviors

The women did other things besides pray. The most common were reading the Bible or other inspirational readings, going to church/temple, listening to music, and walking in nature. For example, one woman walked in the hills, another walked on the beach. Other women did meditation, visualization, chanting, yoga, or chi-gong. One woman (41-year-old Caucasian Catholic) felt that self-affirmations were very helpful after her surgery. For a 39-year-old Mexican Catholic, "And I remember my yoga instructor a um a chant like a Buddhist chant or. It was so meditative. I was such in such a deep sense of relaxation that I visualized angels um kind of just blowing like gold dust on me you know. So I did—did a lot of visualization and spiritual visualization and I did like guided meditation tapes at home, relaxation tapes and. All that really brought me closer to God…." Another 57-year-old Caucasian Hindu woman used a variety of modalities including Chi-Gong and music. She said: "I do a lot of praying and kind of like reaching out, try to connect the spirit in whatever way possible, whether it's through dancing or walking or you know singing, chanting, you know whatever." Chi-Gong is commonly used in China for healing from illness and is also used in the USA [6]. However, none of the Chinese-American women in our study mentioned using it.

Many of the women read the Bible for comfort as well. These were mainly women with Protestant or Catholic backgrounds. As the African/Native American Baptist woman said: "I started to get it and I understood what read the Bible before I read it, but I did not understand what I was reading now I do now. I have a daily read I read and try to everyday…and the spiritual music that keeps me going." A 57-year-old Filipina Catholic woman also read from the Bible: "I believe in prayers. When you read the scriptures that's the word from God. You know, He said, 'Be at peace for I am your God. And whatever you sick, whatever you ask, I will grant you in my time, but not your time.'"

Discussion

While we found that African-American women pray more than other groups, this study has shown that women who pray have both qualitative and quantitative differences from women who do not pray. While we did not ask specifically about prayer, 71 women spontaneously mentioned that they prayed. What is interesting is that 45% of the women who did not pray had a spiritual practice. We had a wide definition of spiritual practice that included meditation, yoga, and other contemplative behaviors as well as church/temple attendance. Meraviglia [39] found that breast cancer patients who prayed tended to be low income and had less education but had higher psychological well-being than women with high income and education. That sample was mostly Caucasian, and there were no data reported for differences by ethnic group. In contrast, in the present study, the vast majority of women who prayed were not Caucasian. This is consistent with other studies (e.g., [1, 2, 5, 19, 34]). However, our finding that Asian Americans/Pacific Islanders prayed more than Caucasians and Latinas is surprising. Ambs et al. [1] found that the lowest percentage of people with cancer or a chronic illness that prayed were Asian Americans/Pacific Islanders. However, Ashing-Giwa and her colleagues [4, 5] found that Asian-American women who participated in focus groups believed in the positive effects of prayer and used prayer to cope with their cancer. We didn't find any differences in terms of income and education in our sample which is consistent with other studies (e.g., [1]) but not with Meraviglia's findings. However, 83% of our sample had at least some college experience, and over half had incomes over $75,000. While over half of the Catholics and Protestants said that they

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prayed, only one of the Jewish women did. This difference may be due to the fact that the number of Jewish women in the sample was very small.

As expected, women who prayed had greater spiritual well-being and faith and assurance than women who did not pray. They also scored higher on the additional items subscale of the FACIT-Sp [44] that examined connection with God and others as well as forgiveness and compassion towards others. Surprisingly, there were no significant differences between the groups in terms of meaning and peace. What was also surprising was that there were no significant differences in mood, quality of life, or social support. This may be a result of the data being skewed sharply toward greater quality of life, positive mood, and spiritual well being as well as the sample being relatively small. Shaw et al. [46] also did not find differences between breast cancer patients participating in online support groups that spontaneously mentioned prayer or religiosity on quality of life and social support. However, they did find that the use of religion-related words predicted emotional well-being, functional well-being, and positive reframing 4 months later. In the Levine and Targ [31] study, use of prayer was not associated with physical or functional well-being. However, spirituality has been shown to be correlated with both physical and functional well-being [14, 31, 44]. Both prayer and spirituality are also associated with positive mood [14, 23, 31, 39]. And in this study, the spiritual items (with the exception of the Faith and Assurance Subscale) were highly correlated with all of the quality of life and distress, social support, and benefit finding measures. Therefore, the question of whether or not spirituality helps to improve mood and quality of life among cancer patients remains unanswered as the findings seem to conflict with each other.

Women in this study who prayed were able to find more positive contributions from their breast cancer experience than women who did not pray. While we did not measure coping styles such as positive reframing, this result suggests that women who pray are able to reframe their cancer experience into more positive growth than women who do not pray. This is consistent with the findings from other studies that people use spirituality and prayer to cope with cancer ([24–26, 50], see [35] for a review). However, these studies have been conducted with mostly Caucasian samples.

To our knowledge, this is the first study to compare use and benefits of prayer for cancer between ethnic groups. Ang et al. [2] and Musgrave et al. [42] wrote that African Americans feel that prayer will protect them from illness, that God is a healing resource, and that prayer helped them to heal. Among African-American breast cancer survivors, having a personal relationship with God was important in their healing [11]. However, the Ang et al. study involved elderly men and women considering joint athroplasty. Oxman, Freeman, and Manheimer [43] found that, among cardiac patients, those who did not feel comforted had higher mortality rates after coronary artery bypass graft surgery. In this study, we found significant differences between ethnic groups in terms of prayer, with more African-American and Asian/Pacific Islander women praying. What is surprising is that a lower number of Latinas prayed. This is inconsistent with the published literature that discusses the importance of prayer for Latinas [34, 42], although Goldstein et al. [19, 20] found that African-Americans were more likely to use prayer than other ethnic groups. We also found that there were significant differences between the religious groups, with more Catholics and Protestants using prayer than other religious groups. However, the number of women from other religious groups as well as Latinas was small. It may be that larger samples will negate that difference.

Few studies have examined the role of social support and prayer. We did not find differences in social support between women who prayed or did not pray. This may be due to the fact that the scores on the Interpersonal Support Evaluation List [13] were skewed in

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the positive direction (towards higher satisfaction), and the variability was small. Also, since prayer is usually an individual behavior, amount of social support might not influence a person's frequency of prayer. However, we did find significant relationships between spirituality and social support. This suggests that one's spirituality influences and is influenced by the amount and satisfaction with one's support systems.

Limitations

The main problem with this study is the relatively small sample size and the fact that the data were skewed towards good quality of life and mood. We did not have adequate power to find significant differences in terms of quality of life, mood, and spirituality. A larger sample may be able to find more differences than we have. A larger sample would also allow for examining differences between ethnic groups in terms of who prayed and who did not. In addition, we did not specifically ask if people prayed. While several themes related to prayer were identified, we did not ask specifically what prayer meant to them. Because of that, we cannot compare meaning between ethnic or religious groups. However, many of the women did say that they expected prayer to comfort them or for God or other higher power to bring them complete healing. Some of the women in this study who did not spontaneously say that they prayed may in fact pray. In their review of prayer and health, Masters and Spielmans [35] found that all of the studies of prayer have been cross-sectional and that longitudinal research is needed. The women in our sample were, on average, 2 years post-diagnosis. Future studies should try to capture use of prayer earlier in the cancer experience and then should be followed longitudinally.

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Table 1

Demographics

Variable	Entire sample		Prayed		Did not pray		*p*
	n	%	*n*	%[a]	*n*	%[b]	
Ethnicity	175		79		86		0.000
African American	41	23	27	34.6	10	11.5	
Asian/Pacific Islander	52	30	23	29.5	29	33.3	
Caucasian	53	30	13	16.7	40	46	
Latina	23	14	15	19.2	8	9.2	
Place of Birth							
USA/Canada	111	63	51	65.4	59	67.8	
Latin America/Caribbean	15	8	9	11.5	5	5.7	
Asia/Pacific Islands	36	20	18	23.1	20	23	
Other	5	3	1	1	3	3	
Stage of Disease							
0 or DCIS[c]	10	6	5	5.7	5	6.4	
I	81	47	40	51.3	38	44.8	
II	78	45	33	42.3	43	49.4	
Religion							0.000
Catholic	44	25	25	32.1	19	22.9	
Protestant	58	33	38	48.7	19	22.9	
Jewish	7	4	1	1.3	6	7.2	
Buddhist	7	4	1	1.3	6	7.2	
Other[d]	8	4	5	6.4	5	6.0	
None/not practicing	31	18	8	10.3	23	27.7	
Has an active spiritual practice	97	55	54	68.4	39	45.3	0.001
Marital status							
Married/partnered	87	50	40	51.9	46	57.5	
Single	27	15	12	15.6	13	16.3	
Divorced	30	17	15	19.5	13	16.3	
Widowed	17	10	10	13	7	8.8	

Variable	Entire sample		Prayed		Did not pray		*p*
	n	%	*n*	%[a]	*n*	%[b]	
Other	1	0.6	0	0	1	1.3	
Education							0.001
Less than 12 years	4	2.4	0	0	4	5.0	
High school graduate	11	6	7	9.5	4	5.0	
Some college	44	25	28	37.8	13	16.3	
College graduate	52	30	26	35.1	24	30.0	
Post graduate	48	28	13	27.1	35	43.8	
Health rating							
Excellent	22	13	6	9.1	15	21.1	
Very good	53	31	28	42.4	25	35.2	
Good	43	28	19	28.8	20	28.2	
Fair	19	11	10	15.2	9	12.7	
Poor	5	3	3	4.5	2	2.8	

[a]Percentage of those who prayed

[b]Percentage of those who did not pray

[c]Ductal Carcinoma in Situ

[d]Other includes one woman who was Jewish but practiced Buddhist practices, one Jewish woman who said that she was pantheistic, one Hindu, one woman who used Both Catholic and Native American practices, one Native American, two Muslim, two Mormons, one Sikh, one woman who said that she was Catholic and Baptist, one who said that she was both Catholic and Christian, one woman who said that she was "Science of Mind," and one Swaminarayan.

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Table 2

Demographics

Variable	Entire Sample			Prayed			Did not Pray		
	x	SD	Range	x	SD	Range	x	SD	Range
Age	57.1	12.2	31–83	58.0	12.1	33–93	56.4	12.4	31–82
Time Since diagnosis	23.8	11.3	5–43	24.4	9.2	4–95	23.2	12.9	4–95

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Table 3

Differences in mood, quality of life and spirituality

Variable	Those who prayed			Did not pray			F	p
	n	x	SD	n	x	SD		
Mood[a]	66			66				
Anxiety		8.7	6.4		8.0	6.2	0.42	ns
Depression		9.4	11.1		12.2	14.2	1.7	ns
Anger		7.4	9.2		9.5	11.4	1.21	ns
Vigor		17.6	7.2		17.5	6.0	0.099	ns
Fatigue		8.3	6.7		8.5	6.5	0.02	ns
Confusion		6.4	4.9		7.6	5.9	1.64	ns
Total mood disturbance		23.1	35.9		28.1	42.5	0.54	ns
Quality of life	75			82				
Physical well-being		22.4	5.5		22.2	5.4	0.06	ns
Social well-being		22.0	5.8		22.3	4.7	0.14	ns
Emotional well-being		18.9	4.6		19.5	4.0	0.74	ns
Functional well-being		21.6	6.3		21.4	4.8	0.04	ns
Breast cancer items		24.4	6.3		25.7	6.7	1.5	ns
Total quality of life		108.7	22.0		111.5	20.5	0.68	ns
Benefit finding[b]		63.0	14.4		57.6	13.3	5.5	0.02
Spirituality	77			82				
Spiritual well-being		76.7	14.9		71.6	12.7	5.5	0.02
Meaning and peace		25.6	6.4		25.2	5.3	0.19	ns
Faith and assurance		13.2	3.5		10.2	4.7	20.7	0.00
Additional spiritual items		38.0	6.8		36.1	5.9	3.4	0.07
Social support								
ISEL Appraisal[c]		13.9	2.6		14.1	2.2	0.23	ns
ISEL Belonging		12.9	2.8		13.4	2.5	1.4	ns
ISEL Tangible		13.8	2.4		14.1	2.1	0.41	ns
SNI People[d]		25.5	17.0		28.8	18.4	1.0	ns
SNI High Contact		5.9	2.0		6.1	2.0	0.33	ns

Variable	Those who prayed			Did not pray			*F*	*p*
	n	*x*	SD	*n*	*x*	SD		
SNI embedded		2.8	1.7		2.8	1.6	0.02	ns

ISEL Interpersonal Support Evaluation List; *SNI* Social Network Index

[a]ISEL

[b]*n*=68 for those who prayed, *n*=76 for those who did not pray.

[c]For *ISEL*, *n*=78 for the prayer group, *n*=86 for the no-prayer group.

[d]For *SNI*, *n*=64 for the prayer group, *n*=75 for the no-prayer group.

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Table 4

Correlations with spirituality

	Spirituality overall	Meaning/peace	Faith/assurance	Additional
Meaning/peace	0.84 **		0.34 **	0.64 **
Faith/assurance	0.69 **	0.34 **		0.54 **
Additional items	0.91 **	0.64 **	0.54	
Physical well-being	0.23 **	0.37 **	−0.004	0.13
Social/family well-being	0.41 **	0.39 **	0.15	0.42 **
Emotional well-being	0.41 **	0.55 **	0.11	0.25 **
Functional well-being	0.46 **	0.57 **	0.14	0.34 **
FACIT-B Breast	0.31 **	0.43 **	0.02	0.25 **
Subscale				
FACIT-All	0.46 **	0.58 **	0.11	0.35 **
ISEL Appraisal	0.26 **	0.28 **	0.07	0.30 **
ISEL Belonging	0.29 **	0.36 **	0.01	0.30 **
ISEL Tangible	0.28 **	0.34 **	0.01	0.29 **
SNI High Contact	0.20 *	0.14	0.06	0.28 **
SNI Total People	0.24 **	0.23 **	0.05	0.27 **
SNI Embedded	0.25 **	0.17 *	0.12	0.30 **
Benefit finding	0.34 **	0.22 **	0.39 **	0.26 **
Anxiety	−0.29 **	−0.44 **	−0.11	−0.16
Depression	−0.35 **	−0.44 **	−0.16	−0.25 **
Anger	−0.24 **	−0.30 **	−0.12	−0.18 *
Vigor	0.26 **	0.36 **	0.07	0.20 *
Fatigue	−0.25 **	−0.39 **	−0.03	−0.18 *
Confusion	−0.33 **	−0.44 **	−0.14	−0.23 *
Total mood disturbance	−0.36 **	−0.48 **	−0.14	−0.25 **

FACIT-B Functional Assessment of Chronic Illness Therapy-Breast; *ISEL* Interpersonal Support Evaluation List; *SNI* Social Network Index

* $p<0.05$;

** $p<0.01$

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Table 5

Correlations with prayer

	Prayer
Spirituality overall	0.22**
Meaning/peace	0.07
Faith/assurance	0.29**
Additional items	0.19**
Physical well-being	−0.03
Social/family well-being	0.02
Emotional well-being	−0.05
Functional well-being	0.07
FACIT-B Breast Subscale	−0.10
FACIT-All	−0.02
ISEL Appraisal	−0.02
ISEL Belonging	−0.07
ISEL Tangible	−0.04
SNI High Contact	−0.02
SNI Total People	−0.09
SNI Embedded	0.02
Benefit finding	0.18**
Anxiety	0.05
Depression	−0.02
Anger	0.00
Vigor	0.02
Fatigue	−0.01
Confusion	−0.07
Total mood disturbance	−0.01

FACIT-B Functional Assessment of Chronic Illness Therapy-Breast; *ISEL* Interpersonal Support Evaluation List; *SNI* Social Network Index

* $p<0.05$

** $p<0.01$