Article

Information and Support Needs of Mothers At-Risk for and Surviving with Breast/Ovarian Cancer: The Role of Patient Navigation in Health Outcomes

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Abstract:

Over 1.5M US cancer survivors are raising children, and many are mothers affected by breast/ovarian cancer. The average woman has a 1:8 chance of developing breast cancer and a 1:87 chance of developing ovarian cancer. Mothers, especially those with minor children, may experience worsening quality of life (QoL) compared to their counterparts without children. That is because mothers with cancer face the dual challenge of parenting and managing their illness, often while maintaining primary caregiving roles. Community-based organizations (CBOs) offer critical patient navigation services to women at-risk for and surviving with breast/ovarian cancer. Yet, little is known about how CBO engagement supports mothers' cancer experience and QoL. We conducted a secondary analysis of a national CBO's cancer control program evaluation data (2021-2023) to address this gap. Among all women who contacted the CBO (N=1,758), a majority were mothers (N=1217, 69.2%): 56% identified as mothers of adult children, 31% were mothers of minor-age (<18) children, and 13% were mothers of both minor and adult children (χ^2=341.46, p<0.001). Among the mothers with children aged <18, 82% were non-Hispanic White, 6% were African American, about 4% were not diagnosed with breast or ovarian cancer, 8% were not diagnosed with breast and/or ovarian cancer but were high risk due to BRCA mutation carriage, 28% were diagnosed with breast and/or ovarian cancer and were high-risk due to BRCA mutation carriage, 68% were diagnosed with breast and/or ovarian cancer and were not high risk BRCA mutation carriers, and 20% were both diagnosed with breast and/or ovarian cancer and carried a BRCA mutation. Regarding QoL of mothers with younger children, 47% were in fair/poor health and 20% experienced frequent mental distress (M=6.8 physically unhealthy days, M=7.4 mentally unhealthy days, and M=5.5 activity-limited days within the prior 30 days). Importantly, 54% of these mothers reported participation in a CBO-led service focused on psychoeducation for children and families about cancer, and 39% engaged with cancer survivorship resources. In the evaluation sample, mothers with young children reported high satisfaction with the CBO's cancer control services, and with well-developed psychosocial empowerment (r=0.47, p<0.001). CBO patient navigation programming for mothers surviving breast/ovarian cancer strongly supports them throughout the survivorship journey, and especially when these programs attend to their parenting role.

Keywords: breast cancer, mothers, quality of life

1. Introduction

The average woman in the US has a 1:8 chance of developing breast cancer (BC) and a 1:87 chance of developing ovarian cancer (OC) in her lifetime [1]. A BC or OC diagnosis interferes with all aspects of a woman's well-being, including employment, social and familial relationships, and childrearing. It is estimated that 12% of BC survivors and 5% of OC survivors live with minor children, and their mothering role while undergoing cancer treatment can be doubly burdensome [2].

Mothers with cancer often face unique challenges given their responsibilities as both a mother and a patient. These mothers may struggle to strike a balance between everyday childrearing and addressing their children's fears and concerns about cancer [3–5]. Reports from patients and survivors, both while undergoing treatment and afterward, underscore how challenging it is to navigate their own health priorities with the needs and well-being of their children. Research suggests that these mothers often reaffirm their commitment first and foremost to their children [6,7]. Additionally, survivors often bear a reduced sense of parental efficacy (i.e., a caregiver's confidence in their ability to raise children) and experience feelings of sadness and guilt since a cancer diagnosis can disrupt how a parent feels they can meet the needs of their children [5,8]. Thus, it is incumbent on healthcare providers to consider how motherhood may influence patient decision-making, feelings of empowerment (e.g., their perceived control over their health decisions), and overall quality of life (QoL) [9,10].

Cancer can have a profound and adverse impact on the QoL of both mothers and their children. Compared to young BC survivors (those diagnosed before age 30) without children, young mothers surviving BC who have children report higher levels of fear of reoccurrence and report that BC disrupts their family dynamics to a greater extent [9,11]. Similarly, young survivors with children report greater distress and lower QoL compared to older survivors, and they frequently report higher levels of depression, difficulty sleeping, and anxiety [12–15]. Mothers often communicate that they feel their survivorship journey is interwoven with the functioning of their family; thus, it is important to consider how motherhood (and the ages of children) influences a survivor's ability to maintain a high QoL.

Research suggests the ages of mothers' dependent children heavily impact survivors' decision-making and psychosocial support needs. Compared to mothers who have adult children (above age 18), mothers surviving cancer who have dependent children often struggle to explain their disease to their children [16]. These mothers see their disease as a significant stressor and burden for both them and their youngsters, and many report seeing affective and behavioral changes in their children throughout the cancer treatment journey. Many BC and OC survivors report the need for additional resources to navigate effectively discussing their disease with youth [17,18]. For example, although mothers surviving cancer who have adolescent-aged children note that they do not want conversations about cancer to dominate their relationships with their children, they seek guidance about engaging in conversations with their children about cancer in a nonthreatening way to help reduce their own uncertainty and psychological distress [19].

Community-based organizations (CBOs) have increasingly recognized and helped address the information and support needs of families affected by cancer. CBOs are integral in connecting BC and OC survivors with psychosocial and other resources, including financial support and childcare [20,21]. For mothers surviving with BC or OC, collaboration with a CBO usually begins when a patient or family member contacts the CBO for assistance. The CBO then provides patient navigation (PN) to help connect mothers to resources and services available from within the CBO itself or allied organizations [10,22]. Research suggests that PN to these support networks offer by and through CBOs promotes the formation of strong social ties among patients with cancer, which have been shown to be associated with survival advantages [23,24]. For example, when OC patients who reported high levels of depression and low levels of social support (high-risk) were compared to those with low depression risk and high levels of social support (low-risk), higher-risk patients demonstrated an upregulation in ovarian tumor progression [24]. For mothers surviving or at-risk for cancer, peer support networks provided by CBOs give survivors an opportunity to ask questions about treatment and share challenges, including those associated with raising children while receiving treatment [25,26]. Post-treatment support administered by and through CBOs could also be beneficial; one study found that following OC surgery, women can engage in community-based occupational therapy to reduce post-surgery distress and manage concerns [27]. However, raising awareness about these services to the populations they aim to assist (including historically marginalized groups with low prevalence of cancer screening) may influence their overall utilization [28,29].

These findings suggest that cancer-focused CBOs fill gaps in cancer prevention, control, and PN that are left unaddressed by the clinical services offered through hospitals and similar settings. Mothers who belong to high-risk and vulnerable populations traditionally face systemic barriers to comprehensive cancer care in the US: CBOs PN can be vital in educating patients and survivors from these populations about cancer screening, and help them schedule appointments and provide opportunities for psychosocial support [22,30] Yet, there has been little research evaluating the efficacy of CBOs in supporting mothers at-risk for, diagnosed with, and surviving BC and OC in this context.

In order to optimize the impact of CBOs service lines, it is important to understand the overall needs and outcomes of the services offered, including mothers' experience with PN and how CBOs empower mothers to make informed health decisions about BC and OC [10,31]. This would include information and support that is applicable to mothers as well as their children (both young and older), and particularly in the case of adult-onset inherited cancer syndromes that may be passed from generation to generation. This is of particular importance to the Ashkenazi Jewish population who, due to founder mutations, possess unique biological risks. It is estimated that 1:40 Jewish women are *BRCA* pathogenic variant carriers compared to the general population where the prevalence is 1:400 [32,33]. For Jewish mothers with identified *BRCA* mutation carriage, CBOs may help them explore options for preventative care and empower them to make the more informed choices for themselves and their families, including increased cancer screening, surgical intervention through mastectomies and/or oophorectomies, and talking with their children about hereditary BC and OC [34]. To the extent that the information and support needs of these and other mothers at-risk for and surviving with BC and OC are met by CBOs, mothers' QoL may improve.

This study examines the utilization and care needs among a large cohort of mothers who engaged with a CBO [35]. Using a secondary data analysis, we sought to examine the impact of child age on mothers' utilization of CBO programs and their associated outcomes. Our analysis consists of both a between-group comparison and within-group investigation; first by comparing the outcomes of mothers according to their child's age, and next by examining mothers with young children only to identify their specific needs.

2. Materials and Methods

2.1. Methodology

This study involves a secondary analysis of self-report surveys collected in 2022 and 2023 by a national not-for-profit CBO that provides no-cost cancer prevention and control PN services to the community. This CBO is headquartered in a northeastern state, has regional offices in four other states, and maintains a toll-free telephone line, has a website, an active online presence to help support women across their journey with BC and OC (from risk screening to diagnosis, to treatment and survivorship). Their confidential, annual evaluations assess women's empowerment, satisfaction with the organization and delivery of PN, QoL, and related outcomes. For the purpose of this analysis, "participation" in PN was defined as at least one completed encounter between mothers and the CBO, including with its trained peer supporters. Encounters include PN delivered over the telephone, as well as two-way correspondences by email and text, hosted webinars, moderated social media groups, and other educational and information-oriented PN programming. Annual surveys were administered beginning in January each year. Surveys were distributed by email to all community members who engaged with the organization, including women at-risk for, diagnosed with, and surviving with BC and OC. Those with incomplete surveys were prompted +7, +14, and +21 days after the initial survey invitation following an established protocol [10,35]. The study was reviewed and approved by the host university's Institutional Review Board.

2.2. Participants and Measures

2.2.1. Sociodemographic and clinical characteristics

Mothers provided self-reported medical histories, including information on cancer survivorship (e.g., familial and/or genetic risks) and survivorship status related to BC, OC, or other cancers. Demographic details, such as marital status, race, ethnicity, Jewish descent, education, employment, household income, number of children, and age of children, were also gathered [36].

2.2.2. Program utilization

Program utilization was determined by women responding to Yes/No items about whether they did or did not participate in one of six core programs or services offered by the CBO, as described below. These services are: (1) Busy Box; (2) Best Face Forward; (3) Thriving Again; (4) Peer Support Network; (5) Genetics for Life; and (6) Embrace [35].

1. <u>Busy Box:</u> Busy Box offers support for survivors facing BC while simultaneously raising young pre-teens. The program takes into account the age and gender of the children, and the survivor’s expressed needs and concerns when curating a Busy Box. Participants in the program receive pamphlets related to coping with a cancer diagnosis and how to engage in family communication about this topic, including speaking with children about cancer in a parent. Age-appropriate toys and games are also provided to help occupy children of survivors undergoing treatment.

2. <u>Best Face Forward:</u> Best Face Forward provides resources and materials addressing the cosmetic side effects of radiation and chemotherapy treatment for women with BC and OC. Informational materials about managing hair loss, changes in skin tones, and body image are included. All participants also receive a kit in the mail that includes make-up products for all skin tones and makeup application instructions.

3. <u>Thriving Again:</u> Thriving again is a BC and OC survivorship support program specifically tailored to the needs of these populations. Participants receive a survivorship kit, which is a customized booklet with advice about how to live a physically and mentally healthy life as a survivor.

4. <u>Peer Support Network:</u> The Peer Support Network connects women newly diagnosed with or at high risk of developing BC or OC, with one-on-one trained volunteer peer supporters who share similar diagnoses and experiences. Participants complete interest form based on their cancer status and preferred modes of communication and are connected with a peer supporter.

5. <u>Genetics for Life:</u> Genetics for Life addresses the concerns of women at higher risk of developing hereditary BC and/or OC. This program provides women with cancer or at risk for cancer with genetic education and information related to

deleterious mutations in *BRCA* and other cancer predisposition genes which impact the community that the CBO serves.

6. Embrace: Embrace is designed to meet the needs of women who are living with metastatic BC or OC. The program offers one-on-one support, and primarily includes a trained mental health professional who coordinates and facilitates telephone-based support group calls. Embrace participants are also connected with resources specific to women surviving with advanced cancer.

2.2.3. Patient navigation quality

PN quality was measured by a study-specific seven-item scale consisting of five-point Likert ratings (1 = strongly disagree; 5 = strongly agree) to assess if the services received were: 1) helpful, 2) informative, 3) timely, 4) effective, 5) supportive, 6) reliable, and 7) recommendable to others. These items were summed together to form a continuous PN quality score and then averaged: higher scores indicate a more high quality PN experience. The internal consistency of the PN quality measure was high (Cronbach's alpha = 0.97).

2.2.4. CBO care satisfaction

Satisfaction with the CBO was determined through a summary score from a four-item scale consisting of five-point Likert ratings (1 = strongly disagree; 5 = strongly agree) to assess participant opinions about if the programs and services offered by the CBO were: 1) valuable to them, 2) valuable to their families, 3) helpful, and 4) relevant. These items together assessed the CBO's ability to understand the needs of and provide valuable support, services, and help to women facing cancer. The measure demonstrated high reliability (Cronbach's alpha = 0.98) in assessing the extent to which women's needs were met and felt supported by the CBO [37].

2.2.5. Health-related quality of life

Following guidance by the Centers for Disease Control and Prevention for assessing health-related QoL [38], women reported on their overall health (1 = poor, 5 = excellent), the total number of physically and mentally unhealthy days in the 30 days preceding the survey, and the number of days during which poor physical/mental health adversely affected their usual activities (i.e., self-care, work, recreation).

2.2.6. Empowerment

The CBO assessed women's empowerment with conceptually derived five-point Likert scales (1 = strongly disagree; 5 = strongly agree). The two empowerment items evaluated the extent to which CBO services: 1) facilitated more informed choices about medical treatment and 2) increased confidence in managing health care, as based on the extant research literature [39]. These items were interrelated ($r = 0.87$, $p < .001$) and combined to form an empowerment score. A higher empowerment score was indicative of women feeling more confident in their abilities to make informed decisions for their health.

2.3. Data Analysis

Secondary data analyses consisted of both between-group and within-group comparisons. For the purposes of this comparative analysis, mothers were divided into three groups based on the age of their child: mothers of young children only (Group A), mothers of adult children only(Group B), and mothers of both adult and young children (Group C). First, descriptive statistics were generated to describe and compare the characteristics and prevalence of mothers from groups A, B, and C within the CBO using $\chi 2$ tests. Next, program utilization was compared between mothers with minor children only (Group A) and mothers with at least one adult child (Groups B and C). Mothers in

Group A were compared to those in Group B on dimensions of PN quality, CBO care satisfaction, empowerment, and QoL using Students' t-test. Next, within-group analysis was conducted to further investigate the PN experiences and outcomes of Group A. In this sub-analysis, we assessed Group A mothers' PN experiences as well as their QoL and its associations with mothers' sociodemographic and clinical characteristics.

3. Results

3.1. Prevalence of Motherhood and Demographics of Participants

As shown in Table 1, and among all women who contacted the CBO and completed annual evaluations during the years of inquiry (N=1,758), a majority were mothers raising one or more children (N=1,217, 69.2%). Among those women, 31% (N=377) identified as mothers of younger children (Group A; < age 18) , 56% (N=682) identified as mothers of older children (Group B; ≥ age 18), and 13% (N=158) identified as mothers of both older and younger children (Group C; < and ≥ age 18). These proportions were all statistically different from chance, and from one another (χ^2=341.46, p<0.001; Group A vs. Group B p<0.001; Group A vs. Group C p<0.001; Group C vs. Group B p<0.001).

Among the subset of N=377 mothers in Group A, the sociodemographic and clinical characteristics were as follows. The mean age of these mothers was 41.5 years (SD = 6.1) and most reported being partnered (78.8%). A significant proportion of these women (84.9%), identified as BC survivors based on the following definition: "In cancer, a person is considered to be a survivor from the time of diagnosis until the end of life" [36]. An additional 3.7% self-identified as not diagnosed with BC or OC, 7.7% were not diagnosed with BC or OC but were high risk due to *BRCA* mutation carriage, 68.4% were diagnosed with BC or OC but were not high risk *BRCA* mutation carriers, and 20.2% were diagnosed with BC or OC and carried a *BRCA* mutation.

Table 1. Characteristics of mothers all mothers (N=1,217) and mothers of young children (N=377)

	Groups A+B+C				Group A			
	N=1,217				N=377			
	M	SD	n	%	M	SD	n	%
Age	53.7	12.3			41.4	6.06		
Race								
White			1011	84.3			309	82
Non-White			189	15.7			63	16.7
Marital Status								
Partnered			856	70.3			297	78.8
Not partnered			361	29.7			80	21.2
Education								
< College			745	61.2			218	57.8
≥ College			472	38.8			159	42.2
Employment								
Employed			767	63			188	49.9
Not employed or retired			450	37			189	50.1
At-risk (*BRCA* mutation cancer predisposition)								
No predisposition/ No cancer diagnosis			63	5.2			14	3.7
Yes predisposition/ No cancer diagnosis			60	4.9			29	7.7
No predisposition/ Yes cancer diagnosis			884	72.6			258	68.4
Yes predisposition/ Yes cancer diagnosis			210	17.3			76	20.2
Health-related quality of life								
General Health								
Excellent/very good			267	22.2			76	20.3
Good			434	36			124	33.2
Fair/poor			503	41.8			174	46.5
Frequent mental distress								
No			979	80.4			303	80.4
Yes			238	19.6			74	19.6

3.2. Program Utilization

Figure 1 presents a comparison of CBO core program utilization between Groups A and Groups B+C. The highest level of engagement for mothers with young children (Group A) was with two main components: Busy Box was utilized by 53.8% and Best Face Forward was utilized by 51.2%. More than one-third (38.7%) of these mothers indicated that they participated in both Busy Box and Best Face Forward concurrently. The Busy Box program (the program specifically designed for mothers with younger children) accounted for the largest discrepancy between Group A and Groups B+C; with over half of Group A mothers utilizing Busy Box, while only 8.3% of Groups B+C mothers reported using it.

For the other services, the utilization by mothers in these two groups is similar. Nearly one-third of Group A mothers reported participation in Thriving Again (31.8%) and Peer Support (28.9), with similar rates of utilization for mothers with at least one adult child (38.6% and 26.7%, respectively). Although 22.2% of the sample was an identified carrier of a cancer predisposition gene, less than 10% of mothers in total reported participating in Genetics for Life (a program devoted to genetic education).

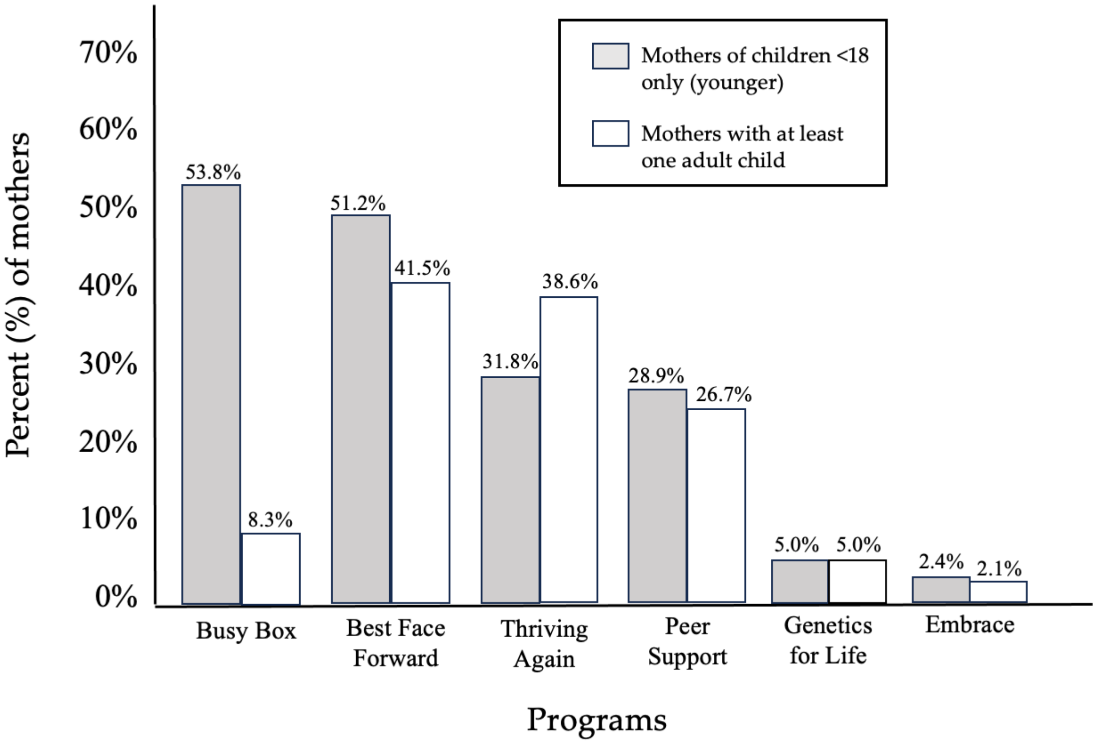

Figure 1. Participation in programs by mothers of young children only (N= 377) compared to mothers with at least one adult child in the sample (N=840).

* Observations do not total to 100% due to multiple responses.

3.3. Observed differences in maternal CBO outcomes and quality of life based on children's ages

We next compared indices of CBO outcome measures (PN quality, care satisfaction, empowerment) and QoL between mothers in Group A and mothers in Group B. There, differences in QoL were observed. Mothers with only adult children experienced decreased QoL compared to mothers with only young children—both for physically unhealthy days (t = -2.7, df =1,037, $p < 0.05$) and activity limiting days (t = -2.1, df = 1,009, $p < 0.05$). Otherwise, no between group differences were identified. To better understand the QoL of mothers with younger children (Group A), we next examined within-group associations among the CBO outcomes of interest and clinical characteristics with QoL.

3.3.1. Patient navigation quality in Mothers with Young Children

The average score for PN quality of mothers with young children was 4.6 out of 5 (SD = 0.71), indicating an overall positive and favorable view of the CBO's PN efforts. A majority of these mothers (73.9%) strongly agreed that they found their interactions with the CBO to be meaningful and helpful. Mothers of young children also agreed they would contact the CBO again in the future for themselves (73.7%) or recommend the services to their friends in need of similar assistance (78.1%). These mothers endorsed that the PN experience connected them with valuable services and resources (75.5%) and that the information provided was given in a timely manner (74.3%). Lastly, mothers of young children felt supported and that PN helped them deal more effectively with their concerns (68.5%).

3.3.2. Associations between Care Satisfaction and Empowerment in Mothers with Young Children

CBO care satisfaction among mothers of young children was 4.7 out of 5 (SD = 0.83), suggesting that the CBO effectively supported and provided resources for mothers and their families facing BC and OC. Many of these mothers agreed that the CBO provides valuable programs (77.7%) and resources (81.1%) for survivors and their families. These mothers also strongly agreed that the CBO understood their needs and those of their families (78.9%). Regarding mothers of young children's sense of empowerment, it averaged 4.02 out of 5 (SD = 0.93). A substantial proportion of these mothers strongly agreed that they felt confident in managing their health care (72.0%) and were well-equipped to make informed healthcare decisions regarding their disease management (68.2%). At the bivariate level, mothers with young children who reported high satisfaction with the CBO's programs and services also reported well-developed psychosocial empowerment after engaging in these services ($r = 0.48$, $p < 0.001$).

3.3.3 Health-Related Quality of Life in Mothers with Young Children

The self-reported assessment of health status within the sample revealed that 46.6% of mothers with young children reported being in fair or poor health (Table 1). About 20% of these mothers reported frequent mental distress (i.e., those reporting greater than 13 days of mentally unhealthy days in the past month). On average, mothers of young children reported experiencing approximately 6.8 physically unhealthy days, 7.4 mentally unhealthy days, and 5.5 activity-limited days over the course of the past 30 days.

Table 4 displays the associations within mothers with young children's clinical characteristics and CBO-focused outcome measures with their general health and overall QoL (as indexed by the number of unhealthy days, where higher scores indicate poorer QoL). On average, mothers with young children who had better general health were mothers who were at lower risk for cancer ($r= -0.12$, $p= 0.011$), employed ($r= 0.2$, $p < 0.001$), had positive PN experience ($r=0.09$, $p=0.04$), and a stronger sense of psychosocial empowerment ($r=0.09$, $p= 0.04$). Mothers with young children who had a better quality of life (based on fewer unhealthy days in a month) were those at lower risk for cancer, employed, had a more positive PN experience and overall CBO satisfaction, and had a strong sense of psychosocial empowerment.

Table 4. Within-group associations for maternal quality of life

Variables	General Health	Quality of Life*
	r , *p*	*r* , *p*
Clinical characteristics		
Risk for cancer	-0.12, 0.011	0.123, 0.008
Level of education	0.08, n.s.	-0.059, n.s.
Employment status	0.2, < 0.001	-0.17, < 0.001
Age of child(ren)	0.02, n.s.	0.07, n.s.
Outcomes		
Patient navigation quality	0.09, 0.04	-0.13, 0.006
CBO care satisfaction	0.07, n.s.	-0.17, <0.001
Empowerment	0.09, 0.04	-0.156, 0.001

*Higher scores indicate poorer QoL. “n.s.” = non-significant

4. Discussion

This study reveals important insights regarding the efficacy of CBO-led cancer control programming to empower, support, and engage mothers who are surviving breast-ovarian cancer. Specifically, when mothers are given the opportunity to gain access to tailored programming, high-quality resources, and family support services they not only use those services but feel satisfied and empowered by them. In our community-based sample, we identified that most women who utilize the CBO of interest identify as mothers. This study is the first to investigate how mothers of minors, who are particularly vulnerable due to both their cancer diagnosis and responsibility as mothers to young children, are impacted by CBO programming. Although we did not observe differences in the CBO experience of mothers based on whether they had older or younger children, however, we did observe that mothers with younger children appeared to benefit more from programs that assisted them in speaking to their kids about their diagnosis and services that assisted with the cosmetic side effects of cancer treatment. For other services, we observed a mutual minimal utilization between all groups of mothers regarding the use of genetic services and a relative decrease in utilization by young mothers for services related to guiding survivorship behaviors. There could be various sociocultural factors contributing to why mothers may not be utilizing genetic services despite belonging to a population at high genetic risk for breast/ovarian cancer, thus it is a notable point of further analysis or improvement for the CBO. Furthermore, mothers with adult children benefited more from a customized cancer survivorship booklet than from resources assisting with family communication. These differences in utilization suggest a prioritization of mothers with young kids to pursue services that support the well-being of their families, and they are less inclined to reach out for services specifically meant to support their personal well-being during the survivorship phase. These differences in the pattern of mothers’ utilization critically inform how the CBO can continue to address the needs of mothers depending on the status of their children.

These findings underscore the downstream benefits of program utilization, including improved quality of life. Mothers surviving cancer face challenges, including in decision making and managing their risk while being parents, which can impact their physical and mental wellness. Thus, the significance of motherhood status on quality of life cannot be ignored in the context of providing holistic clinical care. In our analysis comparing the CBO experience and QoL of mothers with younger children (Group A) to those with adult children (Group B), our results do not provide evidence that the quality of life of mothers with young children is worse than that of mothers raising adult children. In fact, we observed that mothers with adult children had decreased quality of life compared to mothers of young children, though this could be due to age-related decreases in quality of life among cancer patients [40,41]. However, in our within-group analysis of just mothers with young children (Group A) we observed that when these mothers had a highly positive experience with the CBO's PN and services then they also experienced, on average, fewer total unhealthy days. These findings are consistent with previous research that suggests that survivors who participate in CBO programs and PN experience psychosocial benefits and increased quality of life [42,43]. Moreover, by analyzing the utilization of specific CBO programs alongside participants' self-reported satisfaction measures, we can better understand how behavior-focused survivorship programs, especially those aimed at mothers, can enhance their quality of life.

For mothers surviving cancer in our community-based population, these findings underscore the significance of PN in a mother's feelings of empowerment and satisfaction with CBO services. Mothers raising young children who had a better PN experience were also more empowered and satisfied with CBO services. These results are a testament to how PN services allow for more effective and personalized cancer care delivery since they account for an individual's unique situation, behaviors, and preferences [44]. CBOs can play a critical role in the well-being of mothers who are surviving cancer because their PN services aim to connect mothers with resources and programs that care for their psychosocial well-being, not just their biological disease. Engel's biopsychosocial model emphasizes the need to understand what social, biological, and psychological elements contribute to maintaining good health, and for mothers who must raise children while simultaneously fighting an aggressive chronic disease, survival is much more than just physical well-being [45]. Services that aim to assist a mother in talking to her young children about her disease or survivorship kits are meaningful and, as we have demonstrated, utilized by at-risk populations [45,46]. PN services helped mothers take advantage of the CBO's health information services and resources to support their healthy survivorship. Despite the limited nature of our population of interest, our results suggest that these services can be expanded to other community populations surviving or at-risk for cancer. Thus, offering PN to programs for vulnerable populations who suffer disproportionately from cancer continues to be a point of success for CBOs.

4.1. Limitations

This study has several limitations. Firstly, the reliance on self-reported data introduces the possibility of subjectivity and recall bias, which might affect the accuracy of responses. Nevertheless, patient-reported outcomes are considered the gold standard for gaining insights into individuals' perspectives on their healthcare and their needs for information and support. Another limitation is the potential for selection bias: the data were collected from survivors who voluntarily participated in at least one of the CBO's cancer control programs and completed a survey. This means the experiences of those who opted out or did not respond to the evaluation are not represented, and we did not analyze potential differences among those who engaged with multiple programs. This could limit the generalizability of our findings to the wider population of breast cancer survivors. Finally, although the response rate for this nonrandom survey was comparable to previous studies and existing literature, it was still lower than ideal for ensuring broad generalizability

5. Conclusions

This study underscores the critical role of community-based cancer control programs in meeting the informational and support needs of mothers surviving breast-ovarian cancer through patient navigation (PN) and tailored programming. Continued investment in community-based organizations (CBOs) and their support services can enhance the quality of life for these mothers, addressing their dual roles as patients and caregivers. The significant participation of mothers in CBO services, particularly those with minor children, indicates a clear need for ongoing enhancement of resources that aid mothers in communicating about cancer with their young children. This study also highlights the essential contribution of PN in the success of CBOs in meeting the specific needs of vulnerable populations. This research informs ongoing efforts to address health disparities, especially to populations at unique biological risk, through targeted community interventions and PN. The findings can guide healthcare organizations and policymakers in improving PN services and informational support programs to support parents in balancing childrearing and cancer survivorship. CBOs are well-positioned to address systemic healthcare challenges, providing comprehensive and quality care to mothers and a broader spectrum of cancer survivors. In sum, this research highlights the need to strengthen CBO-led cancer-control services so they can continue to address the psychosocial needs of mothers at risk for and surviving breast-ovarian cancer, with the purpose of allowing them to flourish as mothers and patients alike.

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