Assessment of Patient Navigation Efforts for Breast Cancer in the United States: A Scoping Review of the Literature

by

Gretchen Anne Hershberger

BA – Communication Studies, Canisius College, 2015

Submitted to the Graduate Faculty of the

Graduate School of Public Health

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2021
UNIVERSITY OF PITTSBURGH

GRADUATE SCHOOL OF PUBLIC HEALTH

This thesis was presented

by

Gretchen Anne Hershberger

It was defended on

July 21, 2021

and approved by

Lindsay M. Sabik, PhD, Associate Professor and Vice Chair for Research, Health Policy and Management

Cynthia L. Salter, PhD, MPH, Assistant Professor, Behavioral and Community Health Sciences

Thesis Advisor: Elizabeth M. Felter, DrPH, Assistant Professor, Behavioral and Community Health Sciences
Assessment of Patient Navigation Efforts for Breast Cancer in the United States: A Scoping Review of the Literature

Gretchen Anne Hershberger, MPH

University of Pittsburgh, 2021

Abstract

**Background.** Breast cancer is the second-most common cancer in women, after skin cancers, and women in the United States have a 1 in 8 chance of receiving a breast cancer diagnosis across their lifetime (American Cancer Society, n.d.). Non-Hispanic White and Black women are more likely to be diagnosed or die from breast cancer than any other racial/ethnic group. A patient navigator’s job is to eliminate barriers that patients and their immediate families face as they access care. Additionally, patient navigators play a significant role when it comes to addressing health disparities and outcomes among different populations, such as racial and ethnic minorities, different community types, and those with limited access to healthcare and other services (Centers for Disease Control and Prevention, 2017). This thesis will describe the state of current patient navigation efforts, their role in reinforcing or alleviating disparities in breast cancer treatment and outcomes, and disparities of access to use of navigators in the United States.

**Methods.** A scoping review of systematic reviews of the literature was performed, using the Ovid Medline database and search terms relating to “patient navigation,” “breast cancer,” and “systematic review.” A total of seven peer-reviewed systematic reviews were used for analysis.

**Results.** These reviews found that patient navigation programs help patients by reducing the time between abnormal cancer screening results and diagnostic resolution, navigating the
healthcare system throughout treatment needs, initiating treatment sooner, receiving the best treatment for the patient, and improving quality of life for patients. The patients that experienced better outcomes from the programs were minority and underserved women, due to access (medical facilities and providers), financial (socioeconomic status and insurance status), and racial/ethnic inequities (Yedjou, 2019).
Table of Contents

Preface .................................................................................................................................................. x

1.0 Introduction ..................................................................................................................................... 1
  1.1 Rationale ......................................................................................................................................... 2
  1.2 Objectives ....................................................................................................................................... 3

2.0 Background ..................................................................................................................................... 5
  2.1 Breast Cancer .................................................................................................................................. 5
  2.2 Social Determinants of Health and Barriers to Care ................................................................. 8
  2.3 Patient Navigation ....................................................................................................................... 10

3.0 Methods ....................................................................................................................................... 16
  3.1 Search Criteria ............................................................................................................................... 16
  3.2 Exclusion and Inclusion Criteria ................................................................................................... 17

4.0 Results ......................................................................................................................................... 19
  4.1 Study Selection .............................................................................................................................. 19
  4.2 Study Characteristics ..................................................................................................................... 20
    4.2.1 Baik et al, 2016 ...................................................................................................................... 22
    4.2.2 Battaglia et al, 2016 .............................................................................................................. 23
    4.2.3 Bernardo et al, 2019 ............................................................................................................. 24
    4.2.4 Freund et al, 2013 ............................................................................................................... 25
    4.2.5 Krok-Schoen et al, 2016 ........................................................................................................ 26
    4.2.6 Nelson et al, 2020 ............................................................................................................... 28
    4.2.7 Robinson-White et al, 2010 .................................................................................................... 28
4.3 Synthesis of Results .......................................................... 29

5.0 Discussion ........................................................................ 32
  5.1 Summary of Evidence ....................................................... 32
  5.2 Limitations of Research .................................................. 35
  5.3 Future Research Suggestions ......................................... 36

6.0 Conclusions ..................................................................... 39

Bibliography .......................................................................... 40
List of Tables

Table 1: Types of Breast Cancer ................................................................. 6
Table 2: Ovid Search Terms ........................................................................ 17
Table 3: Summary of Literature Search Results ........................................... 21
List of Figures

Figure 1: Systematic Reviews Included in the Literature Search ........................................... 19
Preface

I greatly thank and appreciate Dr. Elizabeth Felter for being an incredible advisor, professor, and mentor throughout my time at the University of Pittsburgh. Thank you for fielding questions, teaching, and encouraging and guiding me through these past three years both in academic and professional endeavors.

Thank you to my two other thesis committee members, Dr. Cynthia Salter and Dr. Lindsay Sabik, for taking time out of their busy schedules to serve as committee members, revise drafts, and provide feedback and knowledge about this subject matter.

Finally, I want to thank my support system. Thank you to my parents, without whom this journey through graduate school and beginning steps into the public health field would not have been possible. Thank you for always answering stressed phone calls, encouraging me to do my best work, and being an endless source of support throughout my life. And thank you to Steffen, who provided constant support and encouragement while writing this thesis.

It has been an honor to be a student at the Graduate School of Public Health and to receive the support and mentorship from those around me. It is because of my time at the University of Pittsburgh and my support system that I am able to present and defend this thesis as a conclusion to this chapter of my academic career.
1.0 Introduction

Breast cancer is the second-most common cancer and causes the second-most cancer deaths in women, behind skin cancers and lung cancers respectively. Currently, women in the US have a 1 in 8 lifetime risk of being diagnosed with breast cancer (American Cancer Society, n.d.). Non-Hispanic White and Black women are more likely to be diagnosed or die from breast cancer than any other racial/ethnic group.

In 2021, the American Cancer Society (ACS) estimates that approximately 281,500 new cases of invasive breast cancer will be diagnosed, about 49,300 new cases of ductal carcinoma in situ will be diagnosed, and about 43,600 women will die from breast cancer (American Cancer Society, n.d.). Additionally, it is estimated that 30% of newly diagnosed cancers in 2021 will be breast cancers (Breastcancer.org, 2021).

The Centers for Disease Control and Prevention (CDC) indicates that incidence of breast cancer is equal for Black and White women, due to increasing incidence among Black women over 60 years of age (Centers for Disease Control and Prevention, n.d.). Breast cancer mortality rates are 40% higher in Black women compared to White women, as death rates decrease faster among White women. The CDC also suggests that improving follow-up after an abnormal mammography and the subsequent treatment initiation could address racial disparities seen in Black women (Centers for Disease Control and Prevention, 2017).

The increase in incidence is suggested to be due in part to an increase in screening mammography. An increase in screening also has led to more earlier-stage diagnoses, and more appropriate treatment options (Centers for Disease Control and Prevention, 2017).
Patient navigators play a significant role when it comes to addressing health disparities and outcomes among different populations, such as racial and ethnic minorities, different community types, and those with limited access to healthcare and other services (Centers for Disease Control and Prevention, 2017). Patient navigators are critical to the cancer support network. The National Cancer Institute (NCI) defines a patient navigator as “a person who helps guide a patient through the healthcare system. This includes help going through the screening, diagnosis, treatment, and follow-up of a medical condition” (NCI Directory, n.d.). They also provide access to legal, financial, and social support. A patient navigator’s job is to eliminate barriers that patients and their families face as they access care.

There is no single governing body that oversees patient navigators, and job descriptions and responsibilities vary by organization. Patient navigation positions were found to often be held by lay community health workers, though some programs used nurses as navigators (Wells, 2008).

1.1 Rationale

Benefits of patient navigation (PN) programs have been studied in recent years, but there is still much to discover about long-term benefit of the programs and benefits seen in a wide range of populations. More interventions need to be studied and implemented for Black women due to the studied social determinants of health and disparities they face (Breast Cancer Research Foundation, 2021). Given the burden of disease of breast cancer in an aging population and the importance of patient navigators to the physical, mental, emotional, and financial wellbeing of
those who are affected by breast cancer, it is important to understand the benefits and barriers to
effective patient navigator use.

Vulnerable populations continue to face disparities in the healthcare system. Gerend and
Pai wrote about three social determinants of health disparities that impact underserved women:
poverty, culture, and social injustice (2008). Poverty is associated with low socioeconomic status
and a lack of resources, lack of health insurance, poor living conditions and nutrition, and limited
access to healthcare. Culture is a set of beliefs shared by a community, which can lead to certain
beliefs and views about cancer and its associated treatment. Social injustice includes racial
prejudices and discrimination. These are just some of the social determinants of health that Black
women face that can impact their utilization of screening mammograms (Mishra, 2012). The
Pan-American Health Organization (PAHO) included sociocultural barriers that include
misconceptions about cancer and stigmas, in addition to personal barriers including mistrust of
the healthcare system.

1.2 Objectives

The purpose of this thesis is to perform a scoping review of the literature to explore and
assess the current status of patient navigation efforts for breast cancer in the United States, their
role in reinforcing or alleviating disparities in treatment and outcomes, and future directions for
improving navigation efforts. This research is significant to the public health field as a
preliminary step to determine how to best measure and evaluate a successful patient navigation
program and improve patient navigation programs based on specific population needs,
particularly for those populations experiencing disparities in breast cancer treatment and outcomes.
2.0 Background

2.1 Breast Cancer

Breast cancer is the second most common type of cancer in American women, after skin cancer and is the second leading cause of cancer death in women, after lung cancer. The average risk of a woman developing breast cancer sometime in her life is 1 in 8, and the chance of death is about 1 in 39 (American Cancer Society, n.d.). According to the American Cancer Society, in 2021, it is estimated that 281,550 new cases among US women of invasive breast cancer will be diagnosed, 49,290 cases of non-invasive breast cancer will be diagnosed, and 43,600 women will die from breast cancer.

From 2013-2018, the death rate from the disease decreased by 1% per year, however, incidence rates increased by 0.5% per year. The American Cancer Society attributes the death rate decreases are due to earlier detection of the cancer through screening, increased awareness, and better treatments.

The National Breast Cancer Foundation defined seven different types of cancer, from ductal carcinoma in situ to metastatic breast cancer. Breast cancer types differ in their treatability and incidence.
<table>
<thead>
<tr>
<th>Name</th>
<th>Incidence</th>
<th>Description</th>
<th>Treatment Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductal Carcinoma in Situ (DCIS)</td>
<td>Very common. Early cancer that is highly treatable.</td>
<td>Non-invasive cancer where cancer cells are found in the lining of the milk duct. No spread of cancer cells to surrounding tissue.</td>
<td>Breast-conserving surgery or mastectomy; sometimes hormone therapy after surgery, if the DCIS is hormone-receptor positive</td>
</tr>
<tr>
<td>Invasive Ductal Carcinoma (IDC)</td>
<td>Most common; 70-80% of diagnoses</td>
<td>Invasive cancer where cancer cells that initially formed in the milk ducts have spread to surrounding breast tissue.</td>
<td>Treatments can include surgery, chemotherapy, radiation therapy, hormonal therapy, and targeted therapy.</td>
</tr>
<tr>
<td>Lobular Carcinoma in Situ (LCIS)</td>
<td>Highly treatable; rarely invasive</td>
<td>Cancer cells found in the lobules of the breast. Cancer cells have not spread to surrounding tissue.</td>
<td>Treatment can include observation, preventive therapy, or surgery.</td>
</tr>
<tr>
<td>Invasive Lobular Cancer (ILC)</td>
<td>Second most common; 10% of cases</td>
<td>Cancer that begins in the lobules (milk glands) and spreads to surrounding breast tissue. It can also spread beyond the breast to blood any lymph systems.</td>
<td>Treatment options can include surgery, chemotherapy, hormonal therapy, or radiation therapy.</td>
</tr>
<tr>
<td>Cancer Type</td>
<td>Characteristics</td>
<td>Treatment Examples</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Triple Negative Breast Cancer</td>
<td>More likely to affect younger women, Black and Hispanic women, and those with the BRCA1 gene mutation</td>
<td>&quot;The three most common types of receptors known to fuel breast cancer growth (estrogen, progesterone, and HER-2/neu gene) are not present in the tumor&quot; (National Breast Cancer Foundation).</td>
<td></td>
</tr>
<tr>
<td>Inflammatory Breast Cancer (IBC)</td>
<td>Rare; 1-5% of all breast cancers. Tends to occur in younger women (younger than 40 years of age). Aggressive and fast-growing cancer. Cancer cells invade skin and lymph nodes in the breast. There is often no distinct tumor or lump.</td>
<td>Requires aggressive treatment, beginning with chemotherapy. Other treatments might include surgery, radiation therapy, or hormone treatments.</td>
<td></td>
</tr>
<tr>
<td>Metastatic Breast Cancer</td>
<td>Approximately 6% of women have metastatic breast cancer on first diagnosis. Approximately 30% of women will develop a metastatic breast cancer when diagnosed with early-stage breast cancer. Also called stage 4 breast cancer; diagnosed when the cancer has spread to other parts of the body (lungs, liver, bones, brain).</td>
<td>Drug therapies are the main treatments (hormone therapy, chemotherapy, targeted drugs, immunotherapy). Surgery and/or radiation might be useful in certain situations.</td>
<td></td>
</tr>
</tbody>
</table>

Mammograms are the best and most common test to detect cancer. A mammogram is an image of the breast, and sometimes cancer can be detected via mammogram as early as three years before it can be felt on self-examination (Centers for Disease Control and Prevention, 2020). In general, breast cancer is often treated through a combination of surgery, radiation, hormone therapy, chemotherapy, and targeted therapies (National Breast Cancer Foundation, n.d.).

Lack of access to the healthcare system is a big barrier for many people on their cancer journey. Lack of access to healthcare results in less frequent mammograms, lack of access to medical advances, less likelihood of earlier detection, need for different, potentially more
aggressive treatment options, and different survivorship outcomes for underserved women (McDowell, 2019). Improving conditions and addressing a barrier such as transportation is a big step toward fixing disparities that these women face.

### 2.2 Social Determinants of Health and Barriers to Care

The World Health Organization defines social determinants of health as “the non-medical factors that influence health outcomes” and social determinants are “the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life.” Social determinants of health also influence health inequities and barriers to care. Social determinants have been studied as factors that can impact cancer care and treatment for years, and they include: socioeconomic factors, neighborhood disadvantage, employment status, race/ethnicity, social support, access to healthcare, and medical distrust (Coughlin, 2019).

The biopsychosocial model was developed by George Engel, a psychiatrist, in 1977. This model provides a comprehensive approach to understand the health and elements in a person’s life that contribute to their overall health and healthcare. According to Engel, “a medical model must also take into account the patient, the social context in which he lives, and the complementary system devised by society to deal with the disruptive effects of illness, that is, the physician role and the healthcare system” (Natale-Pereira, 2011). The model recognizes that a person’s health is affected by a variety of factors: social, psychological, biological, environmental, and societal, and the model recognizes that minority communities are the most vulnerable with regard to access to quality healthcare.
Disparities are still prevalent in cancer outcomes and are commonly due to unequal access to quality healthcare in a timely manner. Delays in diagnosis and treatment are associated with worse outcomes, such as larger tumors, late-stage diagnosis, lower cure rates, disease progression, poorer prognosis, and shorter survival (Baik, 2016).

The incidence and mortality rates of breast cancer differ among racial and ethnic groups (Yedjou, 2019). Non-Hispanic White and Black women are more likely to be diagnosed or die from breast cancer than any other ethnic group. Between 2011-2015, White women had an incidence rate of 128.7/100,000 people, with Black women at 125.5/100,000. White women died at a rate of 20.8/100,000 people and Black women died at a rate of 29.5/100,000 (American Cancer Society, 2017). Asian and Pacific Islander women have the lowest incidence and mortality rates. Hispanic women have lower incidence rates, but tumors are often larger in size and they have later-stage diagnoses. The risk for Asian-American women born in the United States is about the same as the risk for White women (Yedjou, 2019).

Coughlin focused on the African American population and their social determinants of health relative to non-Hispanic White people, which is relevant to Black women having worse breast cancer outcomes than White women. Poverty and unemployment rates are two times higher in African American populations, and fewer African Americans graduate high school compared to White populations. African Americans are also four times more likely to live in lower socioeconomic neighborhoods (Coughlin, 2019).

Financial stressors, communication and information barriers, access and medical system barriers, and emotional barriers all impact health care. Wheeler et al provided a list of common organizational factors that impact cancer care quality, which include environmental (distance to care, geographic location, transportation access), organizational (type of clinic within an
accessible distance and necessary treatment requirements on-site), institutional affiliations (cancer care organizations and partnerships, academic status, research), and provider (types of physicians, their training and education, variety of specialists) (Wheeler, 2013). Financial barriers include the cost of healthcare in the United States, insurance status, employment status, and socioeconomic status. Communication and information barriers include health literacy and patient-provider communication. Access and medical system barriers include transportation, location and quality of care and emotional barriers include psychosocial support such as family and social groups (Paskett, 2017).

The Pan-American Health Organization (PAHO), has studied barriers to care that women face along the cancer process. The organization noted that women who live in more rural areas are less likely to get annual screening mammograms, have less access to care and quality care, and often suffer psychosocial effects of diagnosis and treatment.

Studies show that underserved populations would benefit from a more tailored approach to overcoming health care system barriers. In this context, patient navigation becomes a powerful intervention to overcome health disparities (Natale-Periera, 2011).

2.3 Patient Navigation

In 1989, the American Cancer Society issued a “Report to the Nation on Cancer in the Poor” which showed the most critical issues that poor populations face regarding cancer and the barriers they face in seeking and obtaining care (Bernardo, 2019). Dr. Harold Freeman pointed out the most critical issues from the report:
• People living below the poverty line face substantial barriers in seeking and obtaining cancer care and often do not seek care if they cannot pay for it

• Poor people endure greater pain and suffering from cancer than other Americans

• Poor people and their families often make extraordinary personal sacrifices to obtain and pay for care

• Fatalism about cancer, or the belief that all events are predetermined and therefore inevitable, is prevalent among the poor and may prevent them from seeking care (Lexico, n.d.)

• Current cancer education programs are culturally insensitive and irrelevant to many poor people, leaving their needs unaddressed and at times preventing them from seeking or continuing care

Because of the findings of the report, Dr. Freeman created the first patient navigation program in Harlem, NY in 1990. The intervention at Harlem Hospital Center provided free and low-cost breast exams and mammograms and patient navigation services to ensure that patients received diagnoses and treatment in a timely manner. This novel navigation program focused on eliminating the barriers to timely care between an abnormal screening and diagnosis and treatment (Freeman, 2011). Freeman’s patient navigation model has had success, and principles of patient navigation were developed for future interventions:

• Navigation is a patient-centric healthcare service delivery model

• The core function is to eliminate barriers to timely care
• Patient navigation should have a clear scope of practice that differentiates the role with that of other providers. It should be a role within the healthcare team that provides the best care for the patient.

• Delivery of patient navigation services should be cost-effective.

• Services should be provided by someone with the necessary training and skills to navigate a patient through the care phase.

• The person who navigates each phase of care should be decided based on the level of skills needed at any given time.

• There needs to be a defined timeline for navigation start and end.

• There is a need for navigation across disconnected systems of care, such as primary care and specialist care.

• Navigation, not just in the cancer care continuum, but in other areas as well, such as chronic care treatment.

• Navigation systems require coordination.

The program that Dr. Freeman developed showed such success by providing access to free and low-cost breast exams which led to earlier diagnoses and treatments through patient navigation, that The Patient Navigator and Chronic Disease Prevention Act was passed by Congress and signed into law by President Bush in 2005. This act made funding available to eligible medical centers for the development and implementation of patient navigation programs to improve health outcomes (Bernardo, 2019).

The Patient Navigation Research Program (PNRP) was a program funded by the National Cancer Institute with support from the American Cancer Society. It ran for five years, from 2005-2010 and provided funding for ten institutes across the country to develop and run patient
navigation interventions for the treatment of four cancers. The program goals were to “identify and address barriers to care among populations experiencing cancer health disparities” (Krok-Schoen, 2016). Currently, all 30 medical centers that are funded under the National Cancer Institute’s Community Cancer Care Program are required to have a patient navigation program. Patient navigation is shown to be an essential service, especially for underserved populations (Braun, 2012). As of 2015, the American College of Surgeons Commission on Cancer requires cancer centers to have patient navigation programs as part of the accreditation process (Baik, 2016).

Patient navigation is defined as “individualized assistance offered to patients, families, and caregivers to help overcome health system barriers and facilitate timely access to quality health and psychosocial care from pre-diagnosis through all phases of the cancer experience” (Kline, 2019). Navigators help identify barriers to care and provide aid as patients move through the cancer care continuum and receive the care they need in a timely manner (Paskett, 2017). Some studies have shown that patients benefit more from navigators focused on patient-level care as opposed to systems-level barriers (Kline, 2019).

Patient navigators help guide people throughout the cancer care continuum. Braun’s adaptation of the cancer care continuum includes a range of phases and the patient navigation activities that occur in each phase (Braun, 2012).

- **Education and Outreach.** Navigators use their knowledge of the community to educate about early detection.
- **Screening.** Navigators encourage underserved populations to get screened.
- **Diagnosis and Staging.** Navigators help patients get their abnormal screening results diagnosed and staged.
• **Treatment.** Navigators help lower the time between diagnosis and treatment initiation.

• **Survivorship.** Navigators help patients adjust to living with a cancer diagnosis and follow-up screenings once treatment is completed.

• **End of Life.** Navigators provide information for patients to help them make decisions about the continuation or end of care.

While there is variation in navigator duties and educational background, there are consistencies among programs and duties assigned to navigators. Several programs noted qualifications for their navigators such as holding an undergraduate or master’s degree, nursing degree, social workers, health educators, clinic staff members, research assistants, or cancer survivors. Broadly, it appears that most patient navigators in the United States hold some level of training, but there is not standardization to the quality or content of the training at this time.

Braun included a second framework relating to accessibility of services:

• **Understandable.** Navigators provide education to help patients become more knowledgeable about cancer

• **Available.** Navigators provide connection to additional services that would benefit each patient.

• **Accessible.** Navigators try to eliminate barriers to care and services.

• **Affordable.** Navigators connect patients to financial help, insurance, and free and low-cost programs.

• **Appropriate.** Navigators provide culturally competent services and ensure providers are aware of cultural needs of patients.
• **Accountable.** Navigators work to improve, update, and expand program offerings and services.

Despite the Commission on Cancer’s calls on policymakers to fund navigation programs, little has been done for widespread funding (Freund, 2019). Patient navigation programs are limited due to uncertainty surrounding sustainable funding (Kline, 2019). In order for insurance companies or the Center for Medicare and Medicaid Services to reimburse hospitals for patient navigation programs, there needs to be a standardized scope of work and set of competencies to be met (Freund, 2019). Freund also noted that a big reason for the lack of broad patient navigation is the lack of reimbursement. Paskett argued that a cost-benefit analysis needs to be performed to show evidence that patient navigation is worth the funding needed to keep programs going. At this time, patient navigation programs are funded by a variety of different sources, such as federal and state governments, non-profit organizations, private foundations, and health departments (Moy, 2011).
3.0 Methods

This thesis will describe the state of current patient navigation efforts, their role in reinforcing or alleviating disparities in breast cancer treatment and outcomes, and disparities of access to use of navigators in the United States. A scoping review of systematic reviews of the literature was the method of research. The questions being asked are: what is the status of patient navigation programs in the United States and what are the disparities for access? and what are the future directions for improving navigation programs?

3.1 Search Criteria

The literature search was conducted with help from the HSLS librarian through the Ovid Medline database. The search was limited to articles written in the English language and pertaining to patient navigation, breast cancer, and systematic reviews. The initial search produced 15 articles that fit the search criteria.
### Table 2: Ovid Search Terms

<table>
<thead>
<tr>
<th>Search Number</th>
<th>Query</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Patient Navigation/</td>
<td>814</td>
</tr>
<tr>
<td>2</td>
<td>(patient* adj 2 (navigation or navigator*).ti,ab,kf.</td>
<td>1,464</td>
</tr>
<tr>
<td>3</td>
<td>1 or 2</td>
<td>1,831</td>
</tr>
<tr>
<td>4</td>
<td>Exp Breast Neoplasms/</td>
<td>302,084</td>
</tr>
<tr>
<td>5</td>
<td>(breast adj 3 (cancer* or carcinoma* or metast* or neoplasm*).ti,ab,kf.</td>
<td>336,881</td>
</tr>
<tr>
<td>6</td>
<td>4 or 5</td>
<td>406,553</td>
</tr>
<tr>
<td>7</td>
<td>3 and 6</td>
<td>276</td>
</tr>
<tr>
<td>8</td>
<td>Limit 7 to English language</td>
<td>266</td>
</tr>
<tr>
<td>9</td>
<td>&quot;systematic review&quot;,pt. or &quot;Systematic Reviews as Topic&quot;/ or (data adj 2 (extract or extracting or extractings or extraction or extraction)).ti,ab,kf. or ((cochrane adj 2 database adj 2 systematic adj 2 reviews) or (evidence adj 2 technology adj 2 assessment)).jn. or (((comprehensive* or integrative or mapping or rapid or scoping or systematic or systematical or systematically or systematically or umbrella) adj 3 (bibliographical or bibliographically or bibliographies or literature or review or reviews)) or (state adj 3 art adj 1 review) or (research adj 2 synthesis) or ((data or information) adj 3 synthesis).ti,ab,kf. or ((review adj 3 (rationale or evidence)).ti,ab. and &quot;review&quot;,pt.) or (cimhl or (cochrane adj 3 (trial or trials)) or embase or medline or psycLit or (psycinfo not (psycinfo adj 1 database)) or pulomed or scopus or (sociological adj 1 abstracts) or (web adj 2 science)).ab. or &quot;Meta-Analysis&quot;,pt. or &quot;meta-analysis as topic&quot;/ or &quot;network meta-analysis&quot;/ or ((meta adj 2 (analyse or analyse or analyses or analysis or analytic or analytical or analytics or analyze or analyzed or analyzes)) or metaanalyse or Metaanalysen or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or metaanalyser or metaanalyses or metaanalysis* or metaanalytic or metaanalytical or metaanalytically or</td>
<td>501,971</td>
</tr>
<tr>
<td>10</td>
<td>8 and 9</td>
<td>15</td>
</tr>
<tr>
<td>11</td>
<td>Exp hospitals/</td>
<td>282,754</td>
</tr>
<tr>
<td>12</td>
<td>Hospital*.ti,ab,kf.</td>
<td>1,374,649</td>
</tr>
<tr>
<td>13</td>
<td>11 or 12</td>
<td>1,474,836</td>
</tr>
<tr>
<td>14</td>
<td>3 and 13</td>
<td>347</td>
</tr>
<tr>
<td>15</td>
<td>9 and 14</td>
<td>14</td>
</tr>
<tr>
<td>16</td>
<td>3 and 9</td>
<td>114</td>
</tr>
<tr>
<td>17</td>
<td>Limit 16 to English language</td>
<td>112</td>
</tr>
</tbody>
</table>

### 3.2 Exclusion and Inclusion Criteria

Inclusion criteria required that articles studied patient navigation programs as an intervention and that breast cancer patients were the population studied. Articles were excluded if they did not focus on breast cancer and did not include patient navigation as the primary
intervention. One study was excluded for being a study protocol and not including intervention results. Additionally, literature and studies done outside of the United States were used for background information, but were excluded in the final results.
4.0 Results

4.1 Study Selection

The literature search identified 15 articles with keywords patient navigation AND breast cancer AND systematic reviews. Upon abstract review, three searches were excluded. After a full-text review, five additional articles were excluded. Seven peer-reviewed studies were eligible for inclusion in this synthesis. Figure 1 illustrates the study identification and selection process.

Figure 1: Systematic Reviews Included in the Literature Search
4.2 Study Characteristics

Studies selected come from the Ovid Medline database and the search criteria patient navigation, breast cancer, and systematic reviews. The studies used for this paper including their objectives, methods, and results are summarized in Table 3.

The seven articles focused on in this paper had some similar objectives. Baik, Battaglia, Freund, Nelson, and Robinson-White studied the effect of patient navigation programs in improving diagnostic resolution rates, treatment initiation, and survivorship outcomes. Bernardo and Krok-Schoen focused on research challenges and opportunities for navigation improvement. Similar methods were used in all studies but one: literature reviews or meta-analyses. There were several similarities found across the studies researched. Several authors found that patient navigation had a positive effect after 365 days and minorities, low-income, and underrepresented women saw the greatest impact. Patient navigation improves many aspects of breast cancer care and increased uptake and adherence to screenings were seen across several studies. Two major differences that were found was that Baik found minimal evidence to show that patient navigation improves treatment outcomes and Battaglia found an equal benefit across all populations.
<table>
<thead>
<tr>
<th>Study and Time Period</th>
<th>No. Articles in Study</th>
<th>Objectives</th>
<th>Methods</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battaglia et al. 2016 2007-2009</td>
<td>6 (PNRP centers)</td>
<td>Studied the effect of navigation on reaching diagnostic resolution at three specific time points after an abnormal mammogram</td>
<td>Prospective, random-effects meta-analysis using data from individual patients</td>
<td>Patient navigation was seen as a benefit after 365 days of engagement and an equal benefit was seen across all populations of women treated. A population of diverse, minority and low-income women saw more timely diagnostic resolution after one year.</td>
</tr>
<tr>
<td>Bernardo et al. 2019 2010-2018</td>
<td>113</td>
<td>Studied quality, gaps, and avenues for future research through studying patient navigation and cancer</td>
<td>Literature reviews and articles were scored using the Quality Assessment Tool for Quantitative Studies</td>
<td>Increased uptake and adherence to cancer screenings, timely diagnostic resolution and follow-up, higher completion rates for cancer therapy, and higher rates of attending medical appointments.</td>
</tr>
<tr>
<td>Freund et al. 2013 2007-2010</td>
<td>9 (PNRP centers)</td>
<td>Studied patient navigation with usual care to diagnosis or treatment for participants with cancer screening abnormalities</td>
<td>“Meta-analysis of center- and cancer-specific adjusted hazard ratios (aHRs) comparing patient navigation vs usual care” (Freund et al)</td>
<td>A benefit of navigation was seen from 91-365 days for both diagnostic resolution and treatment initiation. Navigation had the best outcomes at centers with the greatest delays in follow-up under usual care.</td>
</tr>
<tr>
<td>Kroek-Schoen et al. 2016 2010-2015</td>
<td>29</td>
<td>Studied research challenges and patient navigation opportunities to better impact women’s health</td>
<td>Literature review</td>
<td>“[Patient navigation] was shown to be effective in helping women who receive cancer screenings, receive more timely diagnostic resolution after a breast and cervical cancer screening abnormality, initiate treatment sooner, receive proper treatment, and improve quality of life after cancer diagnosis” (Kroek-Schoen et al).</td>
</tr>
<tr>
<td>Nelson et al. 2020 1996-2019</td>
<td>37</td>
<td>Evaluated the effectiveness of patient navigation services in screening rates among adversely affected populations</td>
<td>Meta-analysis and literature review</td>
<td>Evidence suggests patient navigation improves many aspects of cancer care</td>
</tr>
<tr>
<td>Robinson-White et al. 2010 1990-2009</td>
<td>12</td>
<td>Evaluated the outcomes of patient navigation in breast cancer care</td>
<td>Meta-analysis and literature review</td>
<td>Evidence suggests patient navigation improves many aspects of breast cancer care including getting annual screenings, following up with diagnostic abnormalities, and initiating treatment as needed.</td>
</tr>
</tbody>
</table>
4.2.1 Baik et al, 2016

Baik, Gallo, and Wells studied the effectiveness of patient navigation on women with breast cancer and their treatment and survivorship outcomes. A comprehensive systematic review was conducted and included 13 articles that were published between 1990-2015. The authors used experimental and quasi-experimental studies of breast cancer patient navigation programs and focused their result collection on treatment and survivorship. The Effective Public Health Practice Project Quality Assessment Tool was used to evaluate methodology of the studies. The assessment tool evaluates selection bias, study design, confounders, blinding, data collection methods, and withdrawals and dropouts.

All articles included in this review studied the use of patient navigation as a primary intervention, but programs varied in delivery of the intervention, goals of the program, services provided, personnel, intended audiences, and targeted outcomes. The role of the patient navigator varied among personnel in each study, ranging from nurses and social workers to community health workers and peer counselors.

Most of the interventions were provided to racial or ethnic groups or other underserved populations: two studies were conducted among Black women; three studies included Black and Hispanic women and White women who had private insurance; two studies targeted low-income and uninsured White women; and the other studies did not specify their demographic information (Baik, 2016).

Seven studies focused on timeliness of care, defined as the time to primary cancer treatment initiation from the date of the abnormal screening result or diagnosis. Navigated patients were more likely to initiate treatment within 30 and 60 days of diagnosis than non-navigated patients and had significantly shorter times from diagnosis to treatment. The
significant difference was more pronounced among Hispanic/Latina women than White women. Six interventions studied the adherence to radiation therapy, chemotherapy, or hormonal therapy. No significant differences were found between the navigated and non-navigated groups, although there were high adherence rates among both groups. Two studies evaluated adherence to post-treatment mammography, and both studies reported that navigated patient adherence rates were higher than non-navigated patient adherence rates.

Two studies suggested that those who received navigation had fewer days from diagnosis to the start of treatment compared with a control group, but other studies reported no significant benefit. The two studies that reported better outcomes with navigation targeted Hispanic/Latina and African American/Black populations. This suggests that patient navigation improves treatment initiation in underserved populations.

This publication did not discuss specific differences in outcomes for minority-focused studies compared to broader population studies. Overall, the findings showed that patient navigation increases mammography screening rates, but little evidence was found to improve breast cancer treatment outcomes.

4.2.2 Battaglia et al, 2016

This research studied the effects of navigation on diagnostic resolution across specific time points after an abnormal breast cancer screening test. A second objective was to study which vulnerable populations see the greatest benefit of patient navigation in an effort to improve resource programs. A prospective, random-effects meta-analysis was performed using studies from the Patient Navigation Research Program between 2007-2009 and was based on
data from individual patients. The goal was to determine the effects of navigation of diagnostic resolution at three points (60, 180, 365 days) after screening abnormality was detected.

Patient navigation was seen as a benefit after 365 days and an equal benefit was seen across all populations of women treated. At 60 days, more than half of participants achieved diagnostic resolution and at 180 days, almost \( \frac{3}{4} \) achieved diagnostic resolution. Diagnostic resolution is when it is determined whether or not a lesion is cancerous (Kumar, 2020). By the 365-day timepoint, almost all navigated patients achieved diagnostic resolution. At the 60- and 180-day timepoints, the navigated and control arms were nearly equal.

Study results showed that navigation led to more timely diagnostic resolution after one year among minorities and low-income women. Navigation was shown to have the greatest benefit to populations who would be lost to follow-up after one year of care.

4.2.3 Bernardo et al, 2019

Bernardo et al performed a literature review to study the efficacy of patient navigation and program cost-effectiveness. Prior to this review, there was a lack of cost evaluation of patient navigation programs. Studies were reviewed to assess quality, determine gaps, and identify future research ideas. Articles used in this study were scored using the Quality Assessment Tool for Quantitative Studies. This tool evaluates articles for selection bias, study design, confounders, blinding, data collection methods, and withdrawals and dropouts.

There were 113 articles included with 59 that focused on breast cancer. Overall, patient navigation programs showed increased adherence to cancer screening across populations, and most studies showed positive outcomes for timely diagnostic resolution and follow-up, higher
completion rates for therapy, and higher rates of appointment attendance. Additionally, navigated patients showed a shorter length of time to follow-up for diagnostic resolution and higher rates of completion than non-navigated patients.

Fourteen articles focused on cost and cost-effectiveness of patient navigation programs and eight found that programs were cost-effective. Bernardo et al reported, “cost-effectiveness analysis of life expectancy, incremental cost-effectiveness ratios, and quality-adjusted life-years were estimated in favor of [patient navigation] programs. In addition, [patient navigation] programs reduced future incident cancer diagnoses and improved timely diagnostic resolution, and substantial future cost savings were projected” (Bernardo, 2019, p. 2749).

4.2.4 Freund et al, 2013

Freund et al studied outcomes from the Patient Navigation Research Program using community-based participatory research methods to address care throughout diverse communities. Available screening test results and evidence of outcomes in underserved populations were used in the evaluation. This paper focused on two primary outcomes: (1) time from abnormal screening to diagnostic resolution; and (2) time to initiation of treatment after a diagnosis of cancer or precancerous lesion.

Researchers performed a meta-analysis of hazard ratios comparing patient navigation to center- and cancer-specific typical care. Each of the nine PNRP centers studied, designed and implemented the program within their community setting. Using the care management model, navigators were to identify and develop strategies for population barriers to care, as well as track participants. Activities were documented through a standard template. Each center was required
to conduct separate analyses based on their program, and Freund et al conducted a pooled analysis based on results from all PNRP center evaluations.

Enrolled participants were diverse: 73% were from racial and ethnic minority groups, 40% were publicly insured, and 31% were uninsured at the time of enrollment.

Delays in navigation efforts for the first outcome were due to delays in receiving test reports, initial contact by a clinician, and contacting the patient for consent to enroll in the navigation program. For the second outcome, navigated patients had a higher proportion of treatment initiation compared with the control group, between 90 and 365 days. Results from these interventions showed that there was a benefit of navigation seen between 91 and 365 days for both diagnostic resolution and treatment. Analysis also showed that navigation intervention had the best outcomes in centers and populations with the greatest delays in follow-up. Results from the PNRP showed that “the impact of patient navigation was greatest among centers with low baseline resolution or treatment initiation rates in the control arm” (Freund, 2013, p. 6). This demonstrates a need for patient navigation programs in communities and hospitals that have fewer resources to reach underserved populations.

4.2.5 Krok-Schoen et al, 2016

The objectives in this study were to summarize the literature from 2010-2015 on patient navigation in breast and gynecologic cancers from the screening stage through treatment, and to show awareness of research challenges and future opportunities for patient navigation in women’s health. A literature review of 29 articles was performed using the PubMed and Medline databases. Only original studies reporting qualitative, quantitative, or mixed methods results in
patient navigation were used and focused on the screening, diagnosis, treatment, and survivorship aspects of the cancer care continuum.

Five studies and two RCTs were used to measure cancer screening in patient navigation programs. In all studies, the navigation groups showed higher rates of mammogram screening adherence compared to the control groups, for all racial/ethnic groups. Six studies focused on the time between an abnormal cancer screening and diagnostic resolution. Results showed that navigation shortened the time between the abnormal screening and diagnostic resolution compared to the control group. Eight studies and one RCT focused on using patient navigation to treat Hispanic/Latina women. These results found the navigated group to have less time from diagnoses to first treatment than those in the control group. However, some studies suggested that patient navigation had no significant impact.

It was noted in this study that patient navigation programs are not equally effective for all groups and differences in effectiveness could be due to age, race, location of care, type of screening, and type of treatment. Krok-Schoen et al suggests that a targeted patient navigation intervention might be the way to go when helping the groups of people with the greatest needs navigating the healthcare system. Targeted patient navigation interventions are tailored to individual groups’ barriers to care (Krok-Schoen, 2016). Navigators can link patients to a variety of resources such as support groups for emotional and psychosocial needs and child care or transportation for tangible support, among others. Age of the patients and life stage should also be considered when planning targeted interventions, as younger women face different challenges compared to older women (Krok-Schoen, 2016).
4.2.6 Nelson et al, 2020

A review of the literature and meta-analysis was used to evaluate the outcomes of patient navigation in increasing cancer screening rates in adversely affected and underserved populations. Studies focused on a variety of cancer outcomes including screening, diagnosis, treatment, and clinical research participation.

Some navigation services included in these studies included: outreach activities, health education materials and sessions, language translation, appointment scheduling and reminders, and transportation. Study enrollment was limited to groups characterized by race and ethnicity, low income, and rural locations, and the studies were based primarily in primary care clinics, community health clinics, and hospitals in the United States.

Because aspects of each patient navigation program differed, it was unclear which components were most effective. However, it was discussed that tailoring interventions to reduce disparities was shown to be effective.

Eleven studies focused on breast cancer in populations adversely affected by barriers to care. All but one study showed higher screening rates in navigated patients, regardless of intervention model and patient population. The evidence found supports the claim that patient navigation improves many aspects of care in breast cancer patients.

4.2.7 Robinson-White et al, 2010

Robinson-White et al used a literature review and meta-analysis to evaluate the outcomes of patient navigation in breast cancer care. Studies were found using the PubMed and Ovid databases and twelve articles were used in the paper. Although navigation roles varied across
studies, and studies varied by location, each program had accessible and affordable breast cancer screening and follow-up support to minority and disadvantaged women. Ten of the studies were conducted with minorities and underserved women through urban cancer centers.

Interpersonal communication between the navigator and the patient was discussed in this paper. While an interpersonal relationship between navigator and patient can be beneficial and lead to more successes, it can also affect evaluation results on the program. An individual navigator’s personality and communication style can be an important part of the success of a program, but the intervention has to be able to be evaluated separate from the interpersonal relationship (Robinson-White, 2010).

Results showed that the navigation programs were successful in moving women to adherence of annual screenings, following-up regarding diagnostic abnormalities, initiating breast cancer treatment, and quality of life improvement through survivorship. The authors reported that “navigation was effective for moving women to desired outcomes in the breast cancer treatment trajectory” (Robinson-White, 2010, p. 131).

4.3 Synthesis of Results

Baik’s article suggested that there was limited evidence to support patient navigation and its effect on improved treatment outcomes, and Freund’s article found no benefit during the first 90 days. The Krok-Schoen article found that patient navigation had no significant impact, but attributed that result to the programs having an open eligibility for navigation instead of targeting underserved populations. The Baik and Freund papers, which also had results suggesting limited benefit of patient navigation, had targeted studies. The Baik paper looked at studies where most
interventions were provided to women from a variety of racial/ethnic or underserved populations. The Freund paper looked at studies that took place in community health centers that primarily cared for patients who were low-income, uninsured, publicly insured, and from racial/ethnic minorities. It is possible that patient navigation programs that focus on getting screened and diagnostic resolution have been more developed and evaluated compared to programs that focus on helping patients through the treatment process.

The Bernardo article was the only one that considered cost-effectiveness as part of the studies. When the analysis was performed, patient navigation programs were shown to be cost-effective in terms of life expectancy and quality-adjusted life-years. It was also determined that patient navigation programs reduced future cancer diagnoses, improved timely diagnostic resolution, and it was estimated that there would be future cost savings (Bernardo, 2019).

Studies were broadly heterogeneous in design. Patient navigation programs provide a variety of services and those services are not consistent program-to-program, although common services such as utilization of resources, appointment help, and understanding medical care tend to be consistent. Patient navigators come from a variety of backgrounds, such as community health workers, social workers, and nurses, and each program requires different trainings for their navigators. The background of navigators was mentioned in the Baik, Battaglia, Freund, and Robinson-White articles. The backgrounds of navigators in the Baik paper varied greatly among the studies and included nurses, community health workers, social workers, case managers, and peer counselors. The education and training of navigators also varied among the Baik studies. The Battaglia article did not specifically discuss or look at the backgrounds of navigators, but did explain that all navigators in the PNRP studies participated in face-to-face trainings and webinars to ensure consistency across the centers. Additionally, the research team
performed annual competency assessments on all navigators (Battaglia, 2016). The Freund paper was similar regarding navigator participation in trainings and webinars. The Robinson-White article only mentioned non-healthcare professionals as the navigators used and only in a supportive role. The Bernardo, Krok-Schoen, and Nelson articles did not mention navigator background or education in any capacity.

Navigated patients reach diagnostic resolution and treatment faster than non-navigated patients. Additionally, the percentage of navigated patients initiated treatment is greater than non-navigated patients.

Findings might have differed due to the range of years studied, from 1990-2019. Over nearly 30 years, medicine and interventions should theoretically change and improve over time. Over time, diagnostic tests and treatment options and methods have improved, but many women, especially underserved women, still have barriers to care.

Additionally, two of the seven studies focused on PNRP centers, so their programs and evaluations might have been more structured due to the nature and funding of those programs.
5.0 Discussion

5.1 Summary of Evidence

Patient navigation programs exhibit significant heterogeneity in delivery of the program, goals of the program, services provided, personnel and their education, and targeted outcomes. However, consistency was found throughout the results. Patient navigation frequently reduces the time between abnormal cancer screening results and diagnostic resolution, navigates the healthcare system throughout treatment needs, initiates treatment sooner, receives the best treatment for the patient, and improves quality of life for patients. Patient navigation programs studied were implemented across diverse populations, with a focus on reducing disparities and barriers to care for vulnerable populations. While all navigated patients experienced better outcomes from the programs, minority and underserved women showed greater benefits. As the groups most likely to be lost to follow-up of annual screening exams, minorities and underserved women often also see greater delays in care due to access to quality healthcare. Underserved women got help navigating the health care system in terms of finding doctors, transportation aid, assistance scheduling appointments, and understanding health and treatment options. Studies showed fewer days from an abnormal mammogram to either diagnostic resolution or treatment initiation compared to non-navigated patients.

Patient navigation has improved many aspects of breast cancer care. The Battaglia, Nelson, and Robinson-White studies all found that patient navigation was seen as a benefit after 365 days and an equal benefit was seen across all populations of women treated. The Robinson-White article did not specify demographics of populations studied. However, both the Battaglia
and Nelson papers specified populations studied were low-income, under- or uninsured, racial and ethnic minorities, and underserved women. Additionally, both the Battaglia and Nelson studies examined community health centers. Patient navigation was found to be associated with positive outcomes after one year of engagement and follow-through. For example, within a 365-day period, patients followed-up on abnormal mammogram results, achieved diagnostic resolution, or initiated treatment. Benefits of patient navigation are seen in the results, such as diagnostic resolution was reached or treatment was started.

Five of the seven reviews found that navigated patients had significantly fewer days from diagnosis to treatment than non-navigated patients and adherence rates for post-treatment mammography and screening mammography were higher than non-navigated adherence rates. Increased adherence to cancer screenings, timely diagnostic resolution and follow-up, higher completion rates of cancer therapy, and higher rates of medical appointment attendance were seen across populations studied in a several patient navigation programs.

While many of the studies focused on broader populations of women, there were several that also saw positive results for underserved women. Minority and low-income women received more timely diagnostic resolution with patient navigation in both the Battaglia and Krok-Schoen studies. Additionally, in the Baik and Krok-Schoen studies, Hispanic/Latina women also experienced fewer days from diagnosis to treatment initiation. Two studies, Battaglia and Freund, both pointed out that navigation resources should be directed toward populations with larger delays in care and that navigation was shown to have the greatest impact on populations who would otherwise be lost to follow-up after one year.

Only three of the studies reviewed for this thesis reported negative results in terms of patient navigation programs and their impact, but all three also reported positive results. Of the
three studies that reported negative results, Baik’s studies spanned from 1990-2015 and found limited evidence to support the effect patient navigation had on improved treatment outcomes, Freund’s from 2007-2010 and found no benefit during the first 90 days of navigation, and Krok-Schoen’s from 2010-2015. Krok-Schoen found no significant impact, but concluded that finding to an open eligibility for navigation.

Almost all studies mentioned minority and underserved populations experiencing benefits to patient navigation in some capacity, although as they were all systematic reviews, they did not necessarily specify which, if any, studies focused on a minority or underserved population as opposed to begin part of the populations studied as a whole. No specific differentiation was made between patient navigation programs that were tailored specifically to minority or underserved women. Patient navigation was not discussed as if there were two different programs or as if patient navigation was only being provided to the populations who needed it most. Many of the papers did have results in agreement with the others, especially in terms of shorter days to diagnostic resolution and treatment initiation.

Patient navigation programs need to target underserved groups, as these populations are most likely to be lost to follow-up after diagnostic resolution. However, navigation is a “band-aid, rather than a solution,” according to Robinson-White, as the systemic barriers to care need to be fixed (Robinson-White, 2020, p. 139). The Baik and Krok-Schoen studies specifically noted that minority and low-income women experience fewer days to diagnostic resolution or treatment initiation when utilizing a navigation program. The American College of Surgeons Commission on Cancer requires hospitals to have a patient navigation program of some manner in order to be accredited, and many studies included in the systematic review include a variety of patient treatment settings, such as hospitals, clinics, and primary care facilities.
Demographic information was not explicitly detailed in the results of all articles studied. Therefore, it is hard to truly deduce if patients are experiencing racial inequities, socio-economic inequities, or both.

5.2 Limitations of Research

Patient navigation is a relatively recent program in the cancer-care sphere. Because of this, there is still a lot to learn and study in order to improve programs and care for the most people. In all of the studies reviewed, programs demonstrate differences; no two programs are exactly the same with variety among location, treatment plan, and outcomes, and because of this, not every program tracks the same data. No standard evaluation plan and no oversight body exist for patient navigation programs that is consistently utilized.

Few articles studied patient navigation specifically among racial/ethnic minorities and underserved populations. These adversely affected groups were part of broad cohorts for each program in both the navigated and non-navigated groups, but few studies specifically focused on minorities.

In addition, there has not been much research in the long-term post-treatment outcomes of breast cancer patients. Future research should include longer tracking of patients in navigated groups and include follow-up screenings, cancer recurrence, new cancer diagnoses, and survival data.

Another limitation in the research is the cost-effectiveness of programs. There are few published studies on how much each program costs to run, cost-benefit analyses of navigated patients, and life-years saved.
5.3 Future Research Suggestions

While the articles evaluated in this thesis showed consistency in findings, patient navigation is still a relatively new program in the healthcare realm, and there is much to be studied. Despite previous funding of smaller programs through the National Cancer Institute and American Cancer Society, a true governing body should be formed and oversight maintained across all patient navigation programs.

The Commission on Cancer requires hospitals and medical centers to have patient navigation programs in order to be accredited, but there is not an oversight body or standardization for duties and education of navigators as part of that process. There should be consistency across programs, to an extent. All navigation programs should provide health education and literacy aid, appointment scheduling and reminders, and providing access to resources such as transportation and financial aid programs. In addition, patient navigators should primarily be community health workers, or lay navigators, instead of nurses. Nurses as navigators tend to less efficient, due to being pulled into clinical, non-navigation duties. This pushed navigation tasks to the backburner and leads to less effective navigation programs and women not receiving the additional help these programs are built to provide (Paskett, 2017).

While there should be consistency across programs to provide some standard resources, not all community needs are the same. Some underserved populations in rural areas have different needs than those in urban areas, and younger women have different worries than older women. Patient navigation programs need flexibility to accommodate community needs also.

Many differences among programs, their goals, services provided, and personnel exist, and that makes it difficult to consistently evaluate programs across the United States.
Standardization of navigator programs also will allow for a standard for patient navigation program performance and evaluation.

Next steps for the patient navigation field include cost analysis and expanded research. Cost analyses of programs need to be performed so that a more accurate understanding of the quantitative value of programs is available. More studies should be conducted to learn the actual cost-effectiveness of programs through the program implementation process and program life cycle. Paskett agrees; cost-effectiveness of patient navigation programs is needed in order to better determine which models would be beneficial to utilize for cost-benefit and health outcomes in the long term (Paskett, 2010). Patient navigation programs also need funding. As stated above, programs are limited in their sustainability and resources due to funding limitations. Adequate, consistent funding will help with future program planning and resources to offer patients.

With any research area, it is important for the future of the field to continue asking questions. We should be learning as much as we can about demographics of populations served. Data surrounding race, ethnicity, age, and location (urban or rural) should be collected and used to determine which people in which areas need navigation support more than others. This information should not be used to exclude people from navigation services, but to tailor services to the people served by each program. We also need to know how evaluations are performed and how often they are occurring. Are hospitals evaluating their patient navigation programs are changing structure on a regular basis? Just as hospitals and medical programs require reaccreditation, so should the Commission on Cancer for patient navigation programs. It is necessary to learn about how programs are performing, how many patients they navigate, what program costs are and how funds are being used, and a host of other information that comes from
evaluating programs. If navigation programs are not being evaluated often or at all, there is the lost opportunity to make informed changes to improve them.
6.0 Conclusions

Underserved populations often have access issues, financial issues, and language/health literacy issues that make their journey along the cancer care continuum more difficult. Navigators can help with many of those issues by being a member of their care team, providing necessary resources based on the issues each individual woman is facing, and can help educate patients and serve as a liaison between patient and physician. Navigation programs have shown to be effective by lessening the delays in care, such as annual screenings, fewer days to diagnostic resolution after an abnormal screening, and fewer days to treatment initiation.

Patient navigation is an important aspect in the cancer care continuum. Strong evidence shows the positive effects these programs make on patients throughout their care experience. Minorities, underserved, vulnerable populations benefit the most, because they are often the ones with less access and more barriers to care. While these programs have made improvements over the past thirty years, additional improvements remain to be made, including consistency in programs across the country, better and more uniformed evaluation of the programs, and the cost of running programs in various locations.
Bibliography


Kumar, A., Banco, D., Steinberger, E., Chen, J., Weidner, R., Makim, S., & Parsons, S. (2020). Time to diagnostic resolution after an uncertain screening mammogram in an underserved...


Social determinants of health. (n.d.). Retrieved April 08, 2021, from https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1
https://www.nationalbreastcancer.org/breast-cancer-staging/.


https://www.nationalbreastcancer.org/types-of-breast-cancer/.


