

BREAST CANCER RISK ASSESSMENT Survey, 2021

Study Documentation

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BREAST CANCER RISK ASSESSMENT Study Description

Citation

Title Statement

Title: Breast Cancer Risk Assessment Survey Study

Responsibility Statement

Authoring Entity: Rensselaer Polytechnic Institute, Vasundhara Acharya

Production Statement

Producer: Vasundhara Acharya

Date of Production: 2021

Place of Production: Rensselaer Polytechnic Institute, Troy, New York, United States of America

Distribution Statement

Distributor: Vasundhara Acharya, PhD student at Rensselaer Polytechnic Institute, Troy, New York, USA

Date of Distribution: 2021

Version Statement

Version: First Version

Bibliographic Citation

Breast Cancer survey, October 2021 [machine readable data file] / conducted by Vasundhara Acharya , Principal Investigator [producer and distributor] ,Rensselaer Polytechnic Institute. Troy, New York.

Study Scope

Abstract

The survey to estimate the breast cancer risk estimates the absolute 5 year risk and lifetime risk of developing breast cancer. The data of their first-degree relatives having breast cancer gives a better estimate of them developing the cancer in coming years. The breast cancer risk assessment tool can help in the clinical management of patient seeking advice concerning screening and prevention. It can be used to estimate a person's probability of developing breast cancer without undergoing an invasive technique.

Summary Data Description

Time Period: September 2021 - October 2021

Date(s) of Collection: September 2021

Country: United States of America

Geographic Coverage: The survey was sent to women across United States of America and India.

Unit of Analysis:

Individuals (Women)

Universe: The universe is the women living in different parts of United States of America and India

Kind of Data: Survey Data

Methodology and Processing

Data Collection Methodology

Data Collector: Vasundhara Acharya ,Principal Investigator, PhD Student at Rensselaer Polytechnic Institute, Troy, New York.

Mode of Data Collection: Google Form

Mode of Data Collection: Survey via Google Form

Type of Research Instrument: Structured

Weighting: For all attributes present in the data file except for the patient ID all have been given a single weight and used to compute the breast cancer risk estimate.

Data Labeling

Data labeling: The different cases collected via the survey form were labeled into three categories: Low Risk, Moderate Risk and High Risk.

Domain Expert : Dr. Prasad J Kamath, M.D , D.G.O , Gynaecologist and Obstetrician

Hospital Name: Anupam Hospital

Location : Near Shivaji Statue, Off Manpada Road, Dombivali (E), Thane-421203, India.

Contact : Phone: +91-251-2862580

Data Appraisal Information

Response Rate: The survey was distributed to different parts of USA and India. Most of the responses are recorded from India. The current version consists of 151 responses (records). The size of the file is approximately 35KB.

Data Access

Dataset Availability

Location: GitHub Repository. <https://github.com/Vasundhara1993-acharya/Breast-Cancer-Survey.git>

Dataset Availability

Location: Online

Extent of Collection: 1 data file + 1 machine- readable documentation (PDF) containing the metadata (DDI format)

Number of Files: 2

Notes

The file will be available in Attribute Relation File Format (ARFF) and comma-separated value format. This file will also be provided in PDF format.

Other Study Description Materials

Related Tools

"Weka 3: Machine Learning Software in Java," Weka 3 - Data Mining with Open Source Machine Learning Software in Java. [Online]. Available: <https://www.cs.waikato.ac.nz/ml/weka/>. [Accessed: 01-Oct-2021].

Related Material

"The Breast Cancer Risk Assessment Tool," Breast Cancer Risk Assessment Tool. [Online]. Available: <https://bcrisktool.cancer.gov/>. [Accessed: 01-Oct-2021].

Related Publication(s)

- Erbil N, Nursel D, Çiğdem İ, Bölükbaş N. Breast cancer risk assessment using the Gail model: a Turkish study
- Keane H, Huilgol YS, Shieh Y, Tice JA, Belkora J, Sepucha K, Shibley WP, Wang T, Che M, Goodman D, Ozanne E. Development and pilot of an online, personalized risk assessment tool for a breast cancer precision medicine trial. *npj Breast Cancer*. 2021 Jun 17;7(1):1-9.
- Pillai D, Hossain SS, Chattu VK. Developing a community-based breast cancer risk prediction tool for resource-poor settings. *Journal of education and health promotion*. 2019;8.
- Samimi G, Heckman-Stoddard BM, Holmberg C, Tennant B, Sheppard BB, Coa KI, Kay SS, Ford LG, Szabo E, Minasian LM. Assessment of and interventions for women at high risk for breast or ovarian cancer: A survey of primary care physicians. *Cancer Prevention Research*. 2021 Feb 1;14(2):205-14.

Data Files Description

File Structure (hierarchical) and File by File Description

File Name: Breast Cancer Risk Assessment Survey Study

File Contents: The survey to estimate the breast cancer risk estimates the absolute 5 year risk and lifetime risk of developing breast cancer. The data of their first-degree relatives having breast cancer gives a better estimate of them developing the cancer in coming years. This file contains responses to the various quantitative and qualitative questions asked. The responses to questions relating to their personal medical history, their first degree relatives having cancer and so on are recorded in this file.

Label: Individual Women

Dimensions:

- No. of Variables:18
- No. of Cases: 151
- Record Length:151

Breast Cancer Risk Assessment Survey File Variable Description

Time Stamp

Length: width:17; decimal: 0

Range of Valid Data Values: Valid date and time

Universe: All participants (Women)

Text: Time at which the survey was answered. The time is stored following ISO standard

<i>Value</i>	<i>Label</i>
Valid date and Time	Time

Consent

Length: width:1; decimal: 0

Range of Valid Data Values: 0-1

Universe: All participants (Women)

Text: Please Indicate your Consent Before Proceeding

<i>Value</i>	<i>Label</i>
0	No (Consent is not given for the study)
1	Yes (Consent is given for the study)

Description*: The patients are asked to give their consent regarding their participation in the study. They can withdraw their consent at any point during the study by emailing the Principal Investigator

Patient ID

Length: width:1-3; decimal: 0

Range of Valid Data Values: 1-151

Universe: All participants (Women)

Text: Patient are identified with id instead of names to maintain confidentiality.

<i>Value</i>	<i>Label</i>
1-151	Patient_ID

Age

Length: width:2-3; decimal: 0

Range of Valid Data Values: 24-100

Universe: All participants (Women)

Text: Please Select Your Age

<i>Value</i>	<i>Label</i>
24-100	Age

Description*: The patients are asked to enter their age.

Race/ Ethnicity

Length: width:1; decimal: 0

Range of Valid Data Values: 0-4

Universe: All participants (Women)

Text: Select the Race/Ethnicity

Description*: The patients are asked to select their race/ethnicity. Race refers to a person's physical characteristics, such as bone structure and skin, hair, or eye color

<i>Value</i>	<i>Label</i>
0	White
1	Asian
2	Caucasian
3	Hispanic
4	Other

Q1: Age at first menstrual period

Length: width:1; decimal: 0

Range of Valid Data Values: 1-3

Universe: All participants (Women)

Text: What was your age at the time of your first menstrual period?

Description*: Menstrual period refers to a woman's monthly bleeding. It is often termed as period. The patients are asked to enter their age during which they first got their menstrual period.

<i>Value</i>	<i>Label</i>
1	7-11
2	12-14
3	Above 14

Q2: Age during the first birth of the child

Length: width:1; decimal: 0, negative:1

Range of Valid Data Values: -1-2

Universe: All participants (Women)

Text: What was your age when you gave birth to your first child?

<i>Value</i>	<i>Label</i>
0	Under 20
1	20-30
2	Above 30
-1	Do not have a child

Description*: Women who have their first child after 35 years are more prone to risk of breast cancer when compared to women who give birth to child when they are under 20.

Q3: Relatives in the family having Breast Cancer

Length: width:1; decimal: 0

Range of Valid Data Values: 0-5

Universe: All participants (Women)

Text: If any women in your family have had breast cancer, check their relationship to you (check all that apply)

<i>Value</i>	<i>Label</i>
0	None (No one had cases of breast cancer in the family)
1	Mother
2	Sister
3	Daughter
4	Grandmother
5	Aunt (mother's or father's sister)

Description*: Women with close relatives who've been diagnosed with breast cancer have a higher risk of developing the disease.

Q4: Number of first-degree relatives having breast cancer

Length: width:1; decimal: 0,negative number:1

Range of Valid Data Values: -1-2

Universe: All participants (Women)

Text: How many of your first-degree relatives (mother, sisters, daughters) have had breast cancer?

<i>Value</i>	<i>Label</i>
-1	None (No one had cases of breast cancer in the family)
0	One
1	More than 1
2	Unknown

Description*: If the participant has had one first-degree female relative (sister, mother, daughter) diagnosed with breast cancer, the risk of the participant is doubled.

Q5: If their first-degree relatives were diagnosed with breast cancer before the age of 50?

Length: width:1; decimal: 0

Range of Valid Data Values: 1-2

Universe: All participants (Women)

Text: Was your mother, sibling, or child diagnosed with breast cancer before the age of 50?

<i>Value</i>	<i>Label</i>
1	Yes
2	No

Description*: The risk remains the same as others. This does not add much to the risk of the participant.

Q6: Uterine Cancer

Length: width:1; decimal: 0

Range of Valid Data Values: 1-2

Universe: All participants (Women)

Text: Have you had or do you have uterine cancer?

<i>Value</i>	<i>Label</i>
1	Yes
2	No

Description*: Women who have had breast cancer, colon cancer, or ovarian cancer may have an increased risk of uterine cancer. In this manner we can identify if they had breast cancer in the past.

Q7: Ovarian Cancer

Length: width:1; decimal: 0

Range of Valid Data Values: 1-2

Universe: All participants (Women)

Text: Was your mother, sibling, or child diagnosed with breast cancer before the age of 50?

<i>Value</i>	<i>Label</i>
1	Yes
2	No

Description*: Women who have had breast cancer, colon cancer, or ovarian cancer may have an increased risk of uterine cancer. In this manner we could identify if they had breast cancer in the past.

Q8:Dense Breasts

Length: width:1; decimal: 0

Range of Valid Data Values: 1-2

Universe: All participants (Women)

Text: Has a mammogram shown that you have dense breasts?

<i>Value</i>	<i>Label</i>
1	Yes
2	No

Description*: X-ray picture of breast is represented using the Mammogram. Women with dense breasts with no other risk factors for breast cancer, are considered to have a higher risk of breast cancer than average.

Q9: Intake of diethylstilbestrol tablet

Length: width:1; decimal: 0

Range of Valid Data Values: 1-2

Universe: All participants (Women)

Text: Have you taken the medicine diethylstilbestrol (DES), or did your mother take it while pregnant with you?

<i>Value</i>	<i>Label</i>
1	Yes
2	No

Description*: Diethylstilbestrol (DES) is a synthetic form of the female hormone estrogen. It was prescribed to pregnant women to prevent miscarriage, premature labor, and related complications of pregnancy. Daughters of mothers who took this tablet are prone to twice the risk than average. This usually happens when the daughters reach the age of 40.

Q10: Intake of hormone-based birth control pills

Length: width:1; decimal: 0

Range of Valid Data Values: 1-2

Universe: All participants (Women)

Text: Are you currently taking hormone-based birth control, such as birth control pills?

<i>Value</i>	<i>Label</i>
1	Yes
2	No

Description*: Usage of the birth control pills is linked to a slight increase in the risk of breast cancer.

Q11: Breast Biopsy (Benign one)

Length: width:1; decimal: 0,negative_number=1

Range of Valid Data Values: -1-1

Universe: All participants (Women)

Text: Have you ever had a breast biopsy with a benign (not cancer) diagnosis?

<i>Value</i>	<i>Label</i>
-1	Unknown
0	No
1	Yes

Description*: Benign growths are unusual growths or other changes in the breast tissue that are not cancer. Based on the histological

abnormality in the benign biopsy, women can be checked to see if they have higher risk of breast cancer.

Q12: Number of Breast Biopsy

Length: width:1; decimal: 0,negative_number=1

Range of Valid Data Values: -2-2

Universe: Only Women who have undergone benign biopsies (does not include women who have answered "No" to the question Of benign breast biopsies)

Text: How many breast biopsies with a benign diagnosis have you had?

<i>Value</i>	<i>Label</i>
0	None
1	1
2	More than one
-1	Unknown

Description*: Number of benign breast biopsies undergone is counted here.

Q13: Breast Biopsy with Atypical Hyperplasia

Length: width:1; decimal: 0,negative_number=1

Range of Valid Data Values: -2-2

Universe: : Only Women who have undergone benign biopsies (does not include women who have answered "No" to the question of benign breast biopsies)

Text: How many breast biopsies with a benign diagnosis have you had?

<i>Value</i>	<i>Label</i>
-1	Unknown
0	No
1	Yes

Description*: Atypical Hyperplasia is a precancerous condition that affects the cells in the breast. Women diagnosed with Atypical hyperplasia have been found to have higher risk of breast cancer.

Label: Final Label

Length: width:1; decimal: 0

Range of Valid Data Values: 0-2

Universe: All participants (Women)

Text: Final Categorization of Instances

<i>Value</i>	<i>Label</i>
0	Low
1	Moderate
2	High

Description*: The cases obtained are categorized into Low, Moderate and High with assistance of the domain expert.

