

Research

Knowledge, attitude and practice of prophylactic mastectomy among patients and relations attending a surgical outpatient clinic

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Abstract

Introduction

Prophylactic mastectomy (PM) is uncommon in our practice. This study documents the knowledge and attitude of patients and relation to prophylactic mastectomy.

Methods

Adults attending surgical outpatient unit were interviewed. Biodata, awareness of breast cancer, and attitude towards prophylactic mastectomy were inquired about and documented.

Results

Two hundred and forty eight (99 men and 149 women) were involved. Most, 75.6%, were age bracket 20-29years and 77.2% had tertiary education. Only 26 (10.4%) of the respondents had previous history of breast diseases. 96.4% were aware of cancer of the breast while 113 (45.2%) of them were aware that breast cancer gene can be inherited from parents and 60 (24.2%) believe cancer of the breast can affect women with strong positive family history. Only 64 (25.6%) of them would agree to prophylactic mastectomy if found necessary. Reasons given for possible refusal to consent to PM include effect on beauty, (40%), psychological effect, (22.8%), non-curing of disease, (18%), possible surgical complications, (7.2%), and financial cost, (1.2%). Presence of unilateral breast cancer and high risk status constituted about 71% of suggested possible indications for PM while presence of any breast disease was suggested by only 7.3% of respondents. The profession or education of respondents did not have significance on their acceptance or rejection of PM.

Conclusion

Awareness of prophylactic mastectomy is low among patients in this study. Education about breast cancer and methods of prevention need to be improved.

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Introduction

Breast cancer is the commonest malignancy among women in Nigeria [1]. The impact of these lesions on the populace is enormous as it has been observed that women afflicted are about a decade younger than their Caucasian counterparts. Prophylactic mastectomy (PM) has been observed to reduce the morbidity and mortality among patients with strong genetic predisposition to breast cancer in advanced communities [2].

Women who are at high risk of breast cancer who may wish to consider prophylactic mastectomy after weighing other preventive options for breast cancer include those with a strong family history of breast cancer (especially if the breast cancer was diagnosed among several first-degree relatives, mother or sisters, before age 50), those who have tested positive for the BRCA1 or BRCA2 gene mutations and those who have a personal history of breast cancer and are at high risk for a recurrence. Prophylactic mastectomy can be primarily bilateral or unilateral [3].

In India, an increasing number of patients are opting for cancer-side mastectomies and often contralateral prophylactic mastectomies [4]. The unilateral prophylactic mastectomy can be immediately after surgery of one breast or later to the contralateral breast. It has been observed that the use of contralateral prophylactic mastectomy for invasive breast cancer rose to about 150% from 1993 to 2003 with no evidence of plateau effects in the United State of America [5]. Bilateral prophylactic mastectomy on the other hand, and reconstruction has increased secondary to numerous medical advances [6].

The lack of information about clinical benefits of contralateral prophylactic mastectomy for women with sporadic breast cancer and the factors that influence the contralateral prophylactic mastectomy decision making process are important clinical problems and a critical area of public health concern [7].

In some cases, patients who have been diagnosed with lobular carcinoma in situ as well as those at risk of breast cancer who also have breast microcalcifications (tiny calcium deposits) or who have very dense breast tissue which makes it difficult to detect breast cancer with imaging examinations such as mammography are offered prophylactic mastectomy. Late presentation is commonly observed among our patients as the women are reluctant to permit mastectomy even in the face of malignant breast lesions leading to a poor prognosis [8]. What would be the attitude of Nigerian women on the issue of prophylactic mastectomy? Men are also known to have strong influence on their wives in the black Africans; what will be the attitude of these men to prophylactic mastectomy? This study attempted to answer these questions.

Methods

This was a prospective study among a cohort of patients and relations attending surgical outpatient clinics of Ladoko Akintola University of Technology Teaching Hospital, Osogbo, Nigeria. Period of study was between October to December 2010. All patients and relations attending the oncology clinic and consented to take part in the study during the study period had the questionnaires administered to them. Ethical approval was obtained from Ladoko Akintola University of Technology, College of Health Sciences Institution Reviewing Board. The questionnaires were pretested within the staff of the hospital.

The questionnaires were administered and they document their biodata as well as their knowledge, attitude and beliefs about prophylactic mastectomy. Their understanding of mastectomy, whether or not they would be willing to have prophylactic mastectomy when and if indicated were also inquired about. The questions asked included finding their understanding of mastectomy, whether or not they would be willing to have prophylactic mastectomy when and if indicated. The knowledge of possible effects of prophylactic mastectomy was also inquired about. Any subject who was not a patient with breast cancer and not a direct relation of the patients were excluded from the study. All consenting adult patients and relations were included in the study. The knowledge of possible effects of this procedure was also inquired about. Data were collated and analyzed using Epi info 7 with frequencies, t-test, Chi². P values

Results

Two hundred and forty eight (99.2%) of the 250 questionnaires sent out were returned. Respondents were 99 (39.9%) men and 149 (59.6%) women. Age distribution revealed age 20-29years with the highest frequency of 189 (75.6%) and the least was in the range 50-59 age-group.

Thirteen (5.2%) of the respondents were illiterate while 6 (2.4%) of them had only primary education, 36 (14.4%) with secondary education, 193 (77.2%) had tertiary education. There were 184 (73.6%) Christians, 55 (22%) Muslims, 8 (3.2%) Jehovah's witnesses and 1 (0.4%) traditional worshipper among the respondents. Students were the largest group with 172 (68.4%) of the respondents, while the least was farmers with 2 (0.8%) (**Table 1**).

Knowledge of breast cancer

Only 26 (10.4%) of the respondents had history of breast disease (whether benign or malignant) while 9 (3.6%) previously had other types of malignant lesions. Most of the participants, (239 or 96.4%) were aware of cancer of the breast, 7(2.8%) were not aware and 2 (0.8%) were not sure. Sources of information about breast cancer knowledge were from the mass media in 113 (45.2%) of the respondents while 103 (41.2%) were informed by medical practitioners. Knowledge of breast cancer screening was high in 210 (84.0%) of our respondents while 37(14.8%) were not aware and 1(0.8%) was not sure. Self breast examination was the most well known method of breast cancer screening in 199 (79.6%) , while 19 (7.6%) were aware of the clinical breast examination and only 1(0.4%) was aware of mammography. Two hundred and twenty eight (91.2%) of the respondents believe in the screening procedure while 8(3.2%) do not and two (0.8%) were not sure. Only 113 (45.2%) of the respondents were aware that breast cancer gene can be inherited from parents, while 103 (41.2%) of them did not think it can be inherited through gene and the rest were not sure it can be inherited through gene from parents. Only 60 (24.2%) of the respondents believe that cancer of the breast can affect a woman if there is a strong history of death below age 50 years among three or four women in a family with breast cancer while the others 188 (77.8%) do not agree it could happen.

Prophylactic mastectomy

Both sexes tend to respond more positively to use of chemo prevention and more negatively to PM, though males tend to respond more negative to PM. There is no significant difference in preference for either as a preventive measure in both sexes. More respondents are unsure of the usage of chemoprophylaxis. Similar finding were seen for both gender and religion, but it should be noted that muslims significantly responded positively to chemoprevention ($X^2= 4.3072$, $p = 0.0455$, Fischer exact=0.0304)(Table 2).

Larger percentage of respondents with tertiary education was unsure of decision to be taken if faced with indications for preventive measures against BC. No significant difference was found in the responses of either those with and below tertiary education or those with none and others. (table 4). Only 11 out of 178 respondents have previous history of breast diseases and just 5 had a positive history of any other cancers. This does not have any significant effect on their responses (**Table 3**).

When asked if they would accept prophylactic mastectomy if indicated, Only 64 (25.6%) of the respondents would agree to prophylactic mastectomy if found necessary, while 97 (38.8%) would not and others 87 (35.1%) were not too sure of the decision would be to this approach to breast cancer prevention. Reasons given for possible refusal to consent to prophylactic mastectomy include effect on beauty, (40%), psychological effect (22.8%), non-curing of disease, (18%), possible surgical complications, (7.2%) and financial cost (1.2%) (**Figure 1**). Largest percentage of the respondents (35.3%) suggested that PM should only be done above the age of 60 years while less than 40% suggested age less than 40yrs (**Figure 2**). Presence of unilateral breast cancer and high risk status constituted about 71% of suggested indications for PM while presence of any breast disease was suggested by only 7.3% of respondents (**Figure 3**). The profession of respondents did not have significance on their acceptance or rejection of PM.

Discussion

Breast cancer is the leading female malignancy in Nigeria [1]. Although, patients in communities with high level of awareness usually present with less advanced stages of breast cancer as a result of adoption of screening methods [9,10] those in communities with low level of awareness often present late. In Nigeria, about two-third of patients with this disease present with advanced stages of lesion when therapy offers minimal benefit [8]. Current strategies in use for reducing the risks of breast cancers in high risk individuals include regular surveillance, chemoprevention, prophylactic mastectomy and or oophorectomy. The risk reduction potential for bilateral oophorectomy may be higher in a BRCA1 &2 carrier who is known to be at a higher risk of both ovarian and breast cancers [11].

Knowledge and attitude of patients in this environment about prophylactic mastectomy with subsequent reconstruction is therefore sought to plan for education of the community on breast cancer prevention through prophylactic mastectomy and breast reconstruction. Prophylactic mastectomy is a rare practice in our environment.

The number of prophylactic mastectomies (PM) in the United States has recently increased due to a better understanding of the genetic and biological behavior of breast cancer [1]. Bilateral prophylactic mastectomy is associated with a reduction in the risk of breast cancer by as much as 90% among women with an increased risk of breast cancer due to a strong family history of breast cancer. Because of the physical and psychological effects of bilateral mastectomy and the irreversibility of the procedure, decisions regarding this option must be carefully considered on an individual basis in association with risk assessment and counselling [11].

Selected high-risk women without breast cancer choose to undergo bilateral prophylactic mastectomy (BPM) to reduce their risk of developing the disease. Several studies have reported that BPM significantly reduces, but does not eliminate breast cancer risk [12]. Women with breast cancer are electing for contralateral prophylactic mastectomy (CPM) to reduce the risk of developing contralateral breast cancer [13]. In advanced centres, the demand for bilateral mastectomy and immediate breast reconstruction has increased over the last years, primarily due to the development of genetic testing [14]. It has been done in a number of cases of Cowden syndrome (CS), a rare, autosomal dominant inherited disorder associated with multiple benign and malignant neoplasms, including breast cancer [15] and families with an increased risk for breast/ovarian [16]. Rates of bilateral prophylactic mastectomy and contralateral prophylactic mastectomy have increased over the past decade with bilateral micro-vascular breast reconstruction playing an increasing role in breast cancer care [17] and Patients generally expressed a preference for autologous material for breast reconstruction and an excellent aesthetic result [18].

This study revealed a high level of awareness of cancer of the breast among the respondents, information obtained being mainly from medical practitioners. Knowledge of the breast cancer screening was also found to be high but only one out of four respondents would agree to prophylactic removal of their breast, this is rather low. The most common reason given by respondents for rejection of prophylactic mastectomy is the claim that it would affect their beauty, other reasons such as psychological effect, not completely preventable, possible surgical complications for a disease that is yet to and may never occur as well as the financial cost of the procedure in the face of other financial needs and challenges. It has been reported to affect the quality of life [19] while Bradberg Y et al [20] also reported a substantial proportion of the women reported problems with body image e.g., self consciousness, feeling less sexually attractive, dissatisfaction with the scars, and reduced sexual pleasure 1-year post-BPM as compared with before operation. The respondents in this study tends to prefer chemoprevention to surgical prevention, this is in keeping with the findings HT See et al [21] who assessed the view of the general public in Singapore on cancer prophylaxis. This would not be unconnected with the perceived fear of complications associated with operations in general and cosmetic in relation to breast operations in particular. Age, education, and profession do not have any significant impact on the willingness to allow prophylactic mastectomy. This is different from a study from India where the age of the patients, family history of breast cancer fewer children positively influence prophylactic mastectomy [4].

An important limitation to this study is the generally low level of knowledge of prophylactic mastectomy in our environment as this is rarely practiced and patients and relation may have difficulty understanding what prophylactic mastectomy is all about. The mass media has played a role in informing the public about breast cancer from the response of the subjects in this study. Their role in educating the people more about the impact of prophylactic mastectomy, indications for it and analysis of data from other parts of the world on the progress made with this option of managing such patients should be done.

Conclusion

There is good awareness about breast cancer but poor knowledge of prophylactic mastectomy among the subjects. Only 25% will accept prophylactic mastectomy when indicated. Presence of and high risk of breast cancer were most suggested as indications for prophylactic mastectomy. Health workers are therefore implored to educate patients and relations about breast cancer and prophylactic mastectomy.

Competing interests

The authors declare no competing interests.

Authors' contributions

All authors contributed substantially to this manuscript. A S Oguntola: conception and design, acquisition of data, analysis and interpretation of data, drafting and revision of the article; P B Olaitan: conception and design, analysis and interpretation of data, drafting and revision of the article; O Omotosho: conception and design, acquisition and analysis of data, and revision of the article; O G Oseni: conception, analysis and interpretation of data and revision of the article. All the authors have approved the final version of the manuscript.

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Tables and figures

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Figure 3: Participants' suggested condition of women who should have prophylactic mastectomy

References

1. Adebamowo CA, Ajayi OO. Breast Cancer in Nigeria. *West Afr J med.* 2000; 19:179-191. **This article on PubMed**
2. Hanne Meijers-Heijboer, Bertvan Geel et al. Breast cancer after prophylactic bilateral mastectomy in women with a BRCA1 or BRCA2 mutation. *N Engl J Med.* 2001; 345:159-64. **This article on PubMed**

3. Unic I, Stalmeier PF, Verhoef LC, Van Daal WA. Assessment of the Time-trade off Values for Prophylactic Mastectomy of Women with a Suspected Genetic Predisposition to Breast Cancer. *Med Decis Making*. 1998; 18:268-277. **This article on PubMed**
4. Damie S, Teal CB, Lenert JJ, et al. Mastectomy and contralateral prophylactic mastectomy rates:an institutional review. *Indian J Surg Oncol*. 2011; 2(2): 133-40. **This article on PubMed**
5. Tuttle TM, Habermann EB, Grund EH et al. Increasing use of contralateral prophylactic mastectomy for breast cancer patients: A trend toward more aggressive surgical treatment. *J Clin Oncol*. 2007; 25:5203-5209. **This article on PubMed**
6. Nelson JA, Tchou J, Domchek S et al. Breast reconstruction in bilateral prophylactic mastectomy patients:Factors that influence decision making. *J Plast Reconstr Aesthet Surg*. 2012 May 27. pii: S1748-6815(12)00265-3. doi: 10.1016/j.bjps.2012.05.001. **This article on PubMed**
7. Brewster AM, Parker PA. Current knowledge on contralateral prophylactic mastectomy among women with sporadic breast cancer. *Oncologist*. 2011; 16(7):935-41. **This article on PubMed**
8. Adeoti ML, Oguntola AS, Aderounmu AOA, Agodirin SO. Influence of socio-cultural, political, economic status and environment on the outcome of surgical practice in a developing tropical country – using Breast Cancer as case study. *Surgery Journal*. 2008; 3(2):21-23
9. Ibrahim N A and Odusanya OO. Knowledge of risk factors, beliefs and practices of female healthcare professionals towards breast cancer in a tertiary institution in Lagos, Nigeria. *BMC Cancer*. 2009; 9:76. **This article on PubMed**
10. Parkin DM, Bray F, Ferlay J, Pisani P. Global cancer statistics, 2002. *CA Cancer J Clin*. 2005; 55:74-108. **This article on PubMed**
11. Michael Stefanek, Lynn Hartmann, Wendy Nelson. Risk-Reduction Mastectomy: Clinical Issues and Research Needs. *Journal of the National Cancer Institute*. 2001; 93(17): 1297-1306. **This article on PubMed**
12. Hoover DJ, Paragi PR, Santoro E, Schafer S, Chamberlain RS. Prophylactic Mastectomy in High Risk Patients: A Practice-Based Review of the Indications: Do we follow guidelines?. *Breast Dis*. 2010; 31(1):19-27. **This article on PubMed**
13. Tuttle TM Abbott A, Arrington A, Rueth N. The increasing use of prophylactic mastectomy in the prevention of breast cancer. *Curr Oncol Rep*. 2010; 12(1):16-21. **This article on PubMed**
14. Yi M, Hunt KK, Arun BK, et al. Factors Affecting the Decision of Breast Cancer Patients to Undergo Contralateral Prophylactic Mastectomy. *Cancer Prev Res (Phila)*. 2010; 3(8):1026-34. **This article on PubMed**
15. Ali E, Athanasopoulos PG, Forouhi P, Malata CM. Cowden syndrome and reconstructive breast surgery: Case reports and review of the literature. *J Plast Reconstr Aesthet Surg*. 2011 Apr;64(4):545-9. **This article on PubMed**
16. Colwell AS, Gadd M, Smith BL, Austen WG Jr. An inferolateral approach to nipple-sparing mastectomy: optimizing mastectomy and reconstruction. *Ann Plast Surg*. 2010; 65(2):140-3. **This article on PubMed**
17. Rao SS, Parikh PM Goldstein JA, Nahabedian MY. Unilateral failures in bilateral microvascular breast reconstruction. *Plast Reconstr Surg*. 2010 Jul;126(1):17-25. **This article on PubMed**
18. Wasteson E, Sandelin K, et al. High satisfaction rate ten years after bilateral prophylactic mastectomy - a longitudinal study. *Eur J Cancer Care (Engl)*. 2011 Jul;20(4):508-13. **This article on PubMed**
19. Stefanek ME, Helzlsouer KJ, Wilcox PM, Houn F. Predictors of and satisfaction with bilateral prophylactic mastectomy. *Prev Med*. 1995; 24:412-9. **This article on PubMed**
20. Brandberg Y, Sandelin K, Erikson S, et al. Psychological reactions, quality of life, and body image after bilateral prophylactic mastectomy in women at high risk for breast cancer: a prospective 1-year follow-up study. *J Clin Oncol*. 2008 Aug 20;26(24):3943-9. **This article on PubMed**
21. HT See, YB Cheng, F Yong, KS Khoo, P Ang. Acceptance of prophylactic surgery and Chemoprevention of cancer in Singapore. *Ann Acad Med Singapore*. 2005; 34:238- 42. **This article on PubMed**

Table 1: Bio-data of respondents			
	Distribution		Distribution
Sex		Professions	
Male	99	Students	172
Female	149	Traders	24
Total	248	Farming	2
		Civil servants	20
		Professionals	28
		Total	246
Education		Religion	
None	9	Christianity	55
Primary	6	Islam	192
Secondary	36	Traditional	1
Tertiary	193	Total	248
Total	244		

Table 2: Religion and decisions on breast cancer prevention methods					
	Breast removal before becoming diseased				
	Yes	No	Unsure	Total	
religion					$X^2= 1.525$ $p=0.3406$
Christianity	51	71	16	138	Fischer exact =0.1898
Islam	12	25	6	43	
Traditional	1	0	0	1	
Total	64	96	22	182	
	chemoprevention using Tamoxifen				
	Yes	No	Unsure	Total	
Christianity	72	36	25	133	$X^2= 4.3072$ $p= 0.0455$
Islam	23	3	16	42	Fischer exact =0.0304
Total	95	39	41	175	

Table 3: Effect of education on willingness to have prophylactic breast treatment					
	Breast removal before becoming diseased				
	Yes	No	Unsure	Total	
Educational level					$X^2 = 10.0047$ $p = 0.9450$ Fischer exact = 1.0000 (comp tertiary against below)
None	1	5	1	7	
Primary	2	3	1	6	
Secondary	9	13	1	23	
Tertiary	52	71	18	141	
Total	64	96	22	182	
Chemoprevention using Tamoxifen					
	Yes	No	Unsure	Total	
None	3	0	5	8	$X^2 = 1.4446$ $P = 0.229$ Fischer exact = 0.183 (comp tertiary against below)
Primary	1	1	1	3	
Secondary	15	2	7	24	
Tertiary	75	34	27	136	
Total	95	39	41	175	

- NOT FULLY PREVENTIVE
- AFFECT BEAUTY
- PSYCHOLOGICALLY DISTURBING
- SURGICAL RISKS
- HIGH COST OF SURGRY

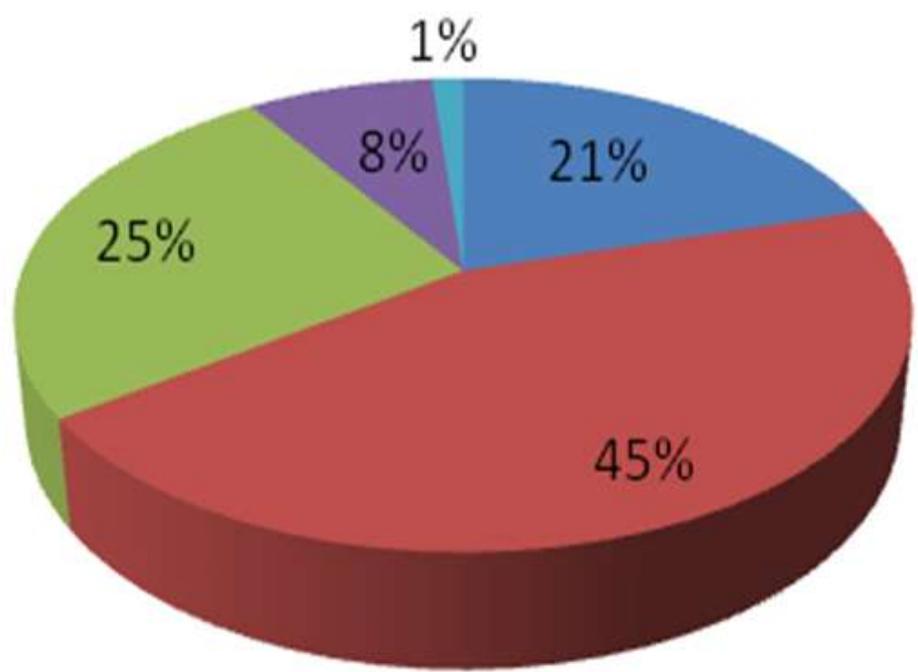


Figure 1
Participants' suggested reasons for possible rejection of prophylactic mastectomy

■ 20 -29YRS ■ 30 - 39 ■ 40 -49 ■ 50 -59 ■ ABOVE 60 YRS

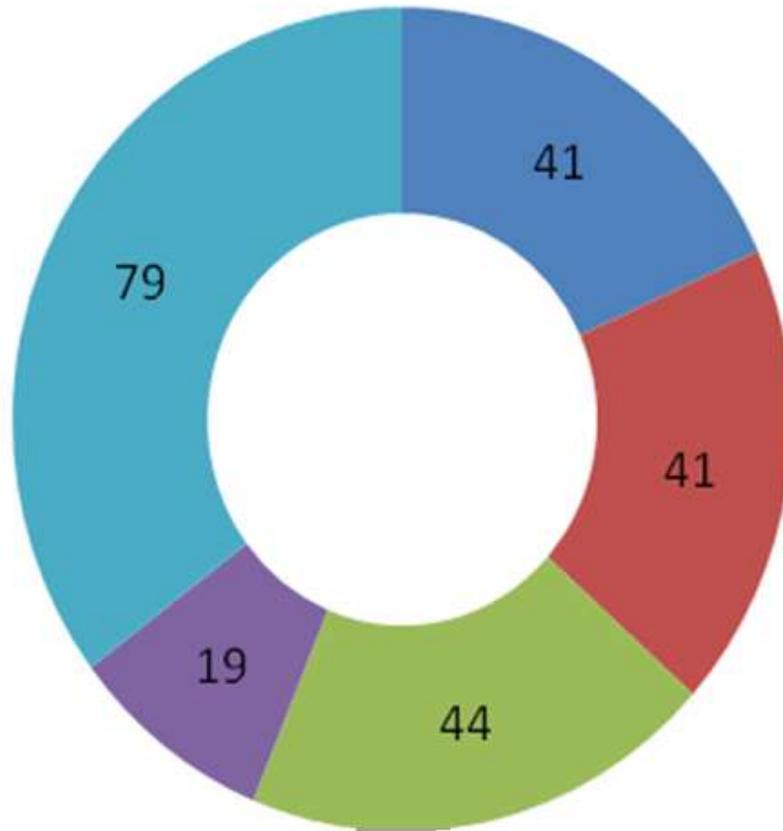


Figure 2

Participants' suggested possible age range for mastectomy

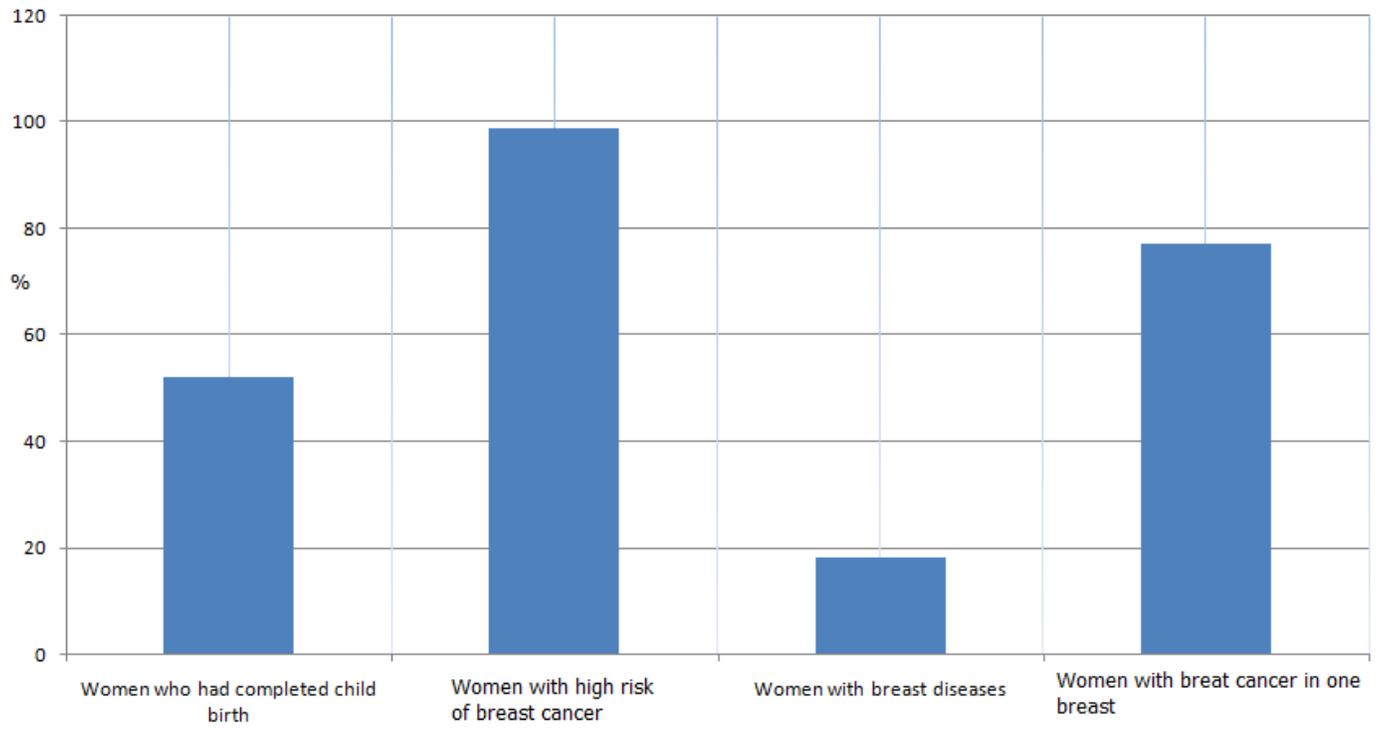


Figure 3
Participants' suggested condition of women who should have prophylactic mastectomy