

# Use of Alternative Medicine Is Delaying Health-Seeking Behavior by Bangladeshi Breast Cancer Patients

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## ABSTRACT

**Objective:** Various treatment options including alternative medicine is available in underdeveloped countries which attracts easily the community with low profile. This study aimed to find perception of the use and mode use of alternative medicine (AM) by Bangladeshi Breast cancer patients which may influence timely treatment seeking.

**Materials and Methods:** A cross sectional study was performed to determine the spectrum in use of alternative medicine and compare the use of alternative medicine with their delay in presentation. Patients were selected randomly from July 2015-June 2016 in a specialized public cancer hospital of Dhaka city. Face to face interview was taken from diagnosed breast cancer patients, collected in pre-structured data sheet, SPSS was used for statistical tests.

**Results:** Out of 200 respondents, about half of the respondents 46.5% (93) first sought help to alternative medicine. Most of them 86.02% (80) preferred to use homeopathy. The mean duration of use alternative medicine was 2.9±4.7 months, mean patient delay was 4 months. Use of alternative medicine was found significantly ( $p<0.05$ ) associated with patient delay ( $p=0.019$ ), provider delay ( $p<0.0001$ ), total delay ( $p<0.0001$ ), use of homeopathy ( $p<0.0001$ ) and residence ( $p=0.014$ ). Logistic regression analysis showed that alternative medicine was 4 times more likely to cause delay help seeking (OR=4.353; 95% CI 2.2-7-8.587)  $p<0.0001$ . The co-efficient  $r$  was 0.488,  $p<0.0001$  and there was a positive correlation among delay and duration of use of alternative medicine.

**Conclusion:** Seeking medical help other than orthodox available treatment leads to delayed presentation by the breast cancer patients.

**Keywords:** Alternative medicine, delay health seeking, breast cancer

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## Introduction

The use of complementary alternative medicine (CAM) has become increasingly popular particularly among cancer patients (1). Within the past 20 years, the definition of alternative medicine has come to include a variety of behavioral techniques (e.g., spiritual techniques and relaxation methods) and clinical approaches (such as massage, herbal remedies, and chiropractic)(2). In the United States, interest in alternative therapies is growing steadily (3). These practices have entered mainstream society and culture (2). The average prevalence of alternative medicine use among cancer patients in Western countries is 40%. The prevalence of alternative medicine use among cancer patients in Asia is 55.0% and in Singapore 56.0%, in Thailand 60.9%, 36.0% and 71.5% in Turkey, 97% in China, 57.4% in Korea, 98.1% in Taiwan, 56.6% in India and 59.0% in Brunei Darussalam (1). In Bangladesh, The practice of alternative medicine is deeply rooted in the cultural heritage and constitutes an integral part of the culture of the people of this country. Different forms of alternative medicines have been used in this country as an essential means of treatment of diseases and management of various health problems from time immemorial. The practice of alternative medicine in this country has flourished tremendously in the recent years along with that of modern medicine. As a result, even at this age of highly advanced allopathic medicine, a large majority (75-80%) of the population of this country, particularly in the rural and semi-urban areas, still prefer to use alternative medicine in the treatment of most of their diseases even though modern medical facilities may be available in the neighbourhood. However, the concept, practice, type and method of application of alternative medicine vary widely among the different ethnic groups living in different parts of the country according to their culture, living standard, economic status, religious belief and level of education. Thus alternative medicine practice in Bangladesh includes both the most primitive forms of folk medicine (based on cultural habits, superstitions, religious customs and spiritualism) as well as the highly modernized Unani and Ayurvedic systems (based on scientific knowledge and modern pharmaceutical methods and technology)(4).

Many cancer patients use homeopathic approaches to increase their body's ability to fight cancer, improve their physical and emotional well-being, and alleviate their pain resulting from the disease or conventional treatments. Homeopathy is highly controversial as there is no plausible mode of action for these highly diluted remedies (5). The nature of the relation between alternative and standard medical treatment is unclear (6). Despite advances in screening, surgery, adjuvant radiation, and systemic therapy, as well as novel biologically targeted therapies; there are limitations to their benefits, especially in advanced disease (7) for that patients become depressed, they divert and seek alternative medicine instead of a conventional method. However it becomes late in proper diagnosis and to start early treatment. As a poor country, due to low literacy rate, low cost of treatment and diagnosis, easy availability of alternative medicine maximum breast cancer patients first seek help to alternative medicine. Breast Cancer is a serious, stressful and life threatening disease. It is assumed that the diagnosis of cancer evokes far greater distress than many other diseases, regardless of prognosis (8). Therefore maximum patients take alternative medicine at any pathway of treatment and diagnosis. As a consequence, there is a delay in seeking medical help as well as expenditure and premature death both are increased abruptly. There is an inverse association between delay and survival times, 1/3<sup>rd</sup> of the mortalities can be avoided by early diagnosis and treatment (9). Noteworthy, alternative medicine has an association in delay help seeking. Very few works have seen in South East Asian Region also in Bangladesh also. This study was carried out to explore information on the attitudes, perception and use of alternative medicine by breast cancer patients in a national level cancer treatment centre where mostly low income group of people comes to seek treatment.

## Materials and Methods

A cross sectional study was carried out to determine the extent in use of alternative medicine, its perception and their delay in diagnosis and treatment, and compare the use of alternative medicine with their delay. A total of 200 samples were selected randomly from the listed patients who attended in the out patient department for treatment after diagnosis of breast cancer. Randomization was done from registered book of day care centre. At 21 days cycle, each breast cancer patient was given chemotherapy. Daily approximately 7 breast cancer patients came for chemotherapy from different parts of the country. By doing lottery, respondents were selected from them but of them, some were excluded by exclusion. Patients from whole country came to this hospital for treatment and diagnosis in the single public cancer hospital. Study carried out from July 2015-June 2016. Sampling frame was done from registered book of day care centre. Ethical Clearance was taken from IRB of NIPSOM (NIPSOM/IRB/2016/18) and written permission was taken from hospital authority before taking interviews (NICRH/Ethics/2016/204-5). Patients of breast cancer fulfilling the selection criteria were enrolled. To avoid recall bias newly diagnosed primary carcinoma (breast cancer) patients were selected those who come to day care centre for taking chemotherapy. Patients were selected on lottery basis, there after their criterias were checked. The questionnaire included socio demographic questions of patients, question about current treatment status of the respondents, medical help seeking time of diagnosis and treatment, what alternative methods were used, extent of alternative medicine used who advise to take alternative medicine, perception on alternative medicine, explanation on why use alternative medicine, clinical information such as stage of disease, type of surgical management was obtained from a review of medical records. Questionnaire was prepared by reviewing literatures

of qualitative study which was done in South East Asian Region (10-13) and from various models (14, 15). Because the sample frame was small, all eligible patients were approached randomly and perspectives of the study were explained to the respondents and informed consent was taken from each respondent. Patients with mental disability, recurrence of breast cancer, treatment failure, incomplete treatment, history of metastasis, hearing impairment and who did not comply with the informed written consent were excluded from the study. Face to face interview was taken from diagnosed breast cancer patients admitted in selected hospital by pretested semi structured questionnaire. Interview was taken to 40 - 45 minutes in length. In total 200 patients (97.0%) completed the interview. The reason for non completion included being too tired, having poor physical health, lack of interest.

Operational definition of provider delay and total delay was given below:

**Total delay or delay:** The period of time between a woman first noticing a breast cancer symptom and receiving treatment for this can be referred to as delay or total delay (15).

**Provider delay:** Refers to the period of time between the initial medical consultation and definitive treatment of the cancer. This includes the time between visiting the general practitioner and referral to the hospital, between first hospital visit and cancer diagnosis and the period between diagnosis and treatment (15).

**Patient delay:** Patient delay means the time period that will be used is the time from discovered the breast symptom to the time a woman seeks evaluation of the symptom by a health care provider.

**Health care provider:** Defined as a person, seek medical consultation from the first detection of breast symptom(s) to diagnosis and treatment.

## Statistical analysis

Statistical analyses of the data were performed using the Statistical Package for the Social Sciences (SPSS) for Windows, version 23.0 (SPSS Inc.; Chicago, IL, USA). Descriptive statistics like frequency distribution, mean, median, mode, range, standard deviation etc. were calculated by SPSS program. Association was seen between help seeking time and other variables by Pearson's Chi-square ( $\chi^2$ ) 2x2 table at  $p < 0.05$  level of significance. Correlation was seen by Pearson's correlation and to predict the impact of alternative medicine on breast cancer treatment as well as to control confounder logistic regression was done. To compare the delay with alternative medicine and other factors two way ANOVA was done. Total number of sample in chemotherapy day care centre were=323, among them 117 were excluded for different reasons.

## Results

Out of 200 respondents, distributions of the stage of breast cancer patients were summarized. Results showed that no patients were found in stage I, in stage II only 17% (n=34) respondents were suffered. Majority of patients were in advanced stage. 66.5% (n=133) were in stage III and 16.5% (n=33) respondents were categorized as stage IV.

Maximum day care chemotherapy patients were stage III breast cancer patients. No one died at III stage during data collection. This was a cross sectional study. So, at this point, the interpretation should not be changed table 1.

Table 1. Distribution of stage of cancer according to age group is given below

Stage of cancer	Age category						Total
	26-30	31-35	36-40	41-45	46-50	>50	
stage 2	6	7	9	3	5	4	34
Stage 3	16	14	28	25	27	23	133
Stage 4	5	8	5	5	5	5	33
Total	27	29	42	33	32	200	

Table 2. Description of study population (N=200)

Variables	Frequency (n)	Percentage (%)
Education		
Illiterate	90	45.0
Primary (1-8)	69	34.5
Secondary (SSC) and above	41	20.5
Occupation		
Housewife	166	83.0
Service	34	17.0
Family income (in taka)*		
1000-5000	78	39.0
6000-10000	85	42.5
More than 10000	37	18.5
Mean±SD	8937± 880	
Age in years		
26-35	56	28
36-45	77	38.5
46-and above	67	33.5
Mean±SD	42±9	
First contact with health care service provider		
Homeopathy	80	40.0
Post graduate physician	64	32.0
**MBBS physician	43	21.5
*100\$=8000 taka (approx.)		
**MBBS; Bachelor of medicine and bachelor of surgery		

45% (90) were illiterate, maximum 83% (166) were housewife, mean family income was around 9000 taka (just over 100\$) and mean age was 42±9, 48% (96) respondents did not know to whom first sought help for breast cancer diagnosis and treatment, 46.5% (93) respondents first sought help to alternative medicine (Table 2, 3). Among them 86.02% (80) first sought help to homeopathy. As alternative medicine, most of them preferred homeopathy. In total, 58% (116) patients take alternative medicine at any pathway of their treatment and diagnosis. That other were cured, 97.41% (113) respondents assumed that lump would be small. To avoid disfigurement 88.79% (103) patients perceived to use alternative medicine. Why the respondents took al-

Table 3. Summary of alternative medicine

Perceptions to receive alternative medicine (n=116)	Agreed % (n)	Not Agreed % (n)
1.No need of operation	92.24%(107)	7.76%(9)
2.Lump would be small	97.41%(113)	2.58%(3)
3.Modern treatment not effective	14.65%(17)	85.34%(99)
4.Less amount of money required	57.76%(67)	42.24%(49)
5.Rapid relief of sufferings	22.42%(26)	77.58%(90)
6.Impression - others might have cured	92.24%(107)	7.76%(9)
7.To avoid disfigurement	88.79%(103)	11.21%(13)
Explanation to receive alternative medicine (n=111)	Frequency (n)	Percentage%
By homeopathy it would be small	32	28.82
Fear of operation	27	24.32
Homeopathy doctor challenged that it would be cured	27	24.32
Less amount of money required	17	15.31
Casually treated by homeopathy	8	7.23

ternative the mean duration of use alternative medicine was 2.9±4.7 ranges (1 week to 24 months), 92.24% (107) respondents perceived that by using alternative medicine there would no need of operation, and saw t medicine, they explained as same as their perceptions on use of alternative medicine, 24.32% (27) respondents said that doctor gave their challenge that it would be cured. Due to use alternative medicine mean patient delay was 4 months and provider delay was 7 months. Out of 200 respondents, 30.18% (n=35) use alternative medicine by herself, table 4. Again 27.58% (n=32) neighbours gave advise to take alternative medicine, 25.86% (n=30) husbands advised to take alternative medicine and only 16.38% (n=19) relatives said to take alternative medicine.

**Between –group Comparisons**

Association between alternative medicine and delay of the respondents was analyzed using Pearson’s Chi-square (χ<sup>2</sup>) method. Results showed that use of alternative medicine was found significantly (p<0.05) associated with the patient delay (p=0.019), provider delay (p<0.0001), total delay (p<0.0001), homeopathy (p<0.0001) and with residence (p=0.014). Delay also associated with patients perceptions why they sought alternative medicine. Less amount of money required

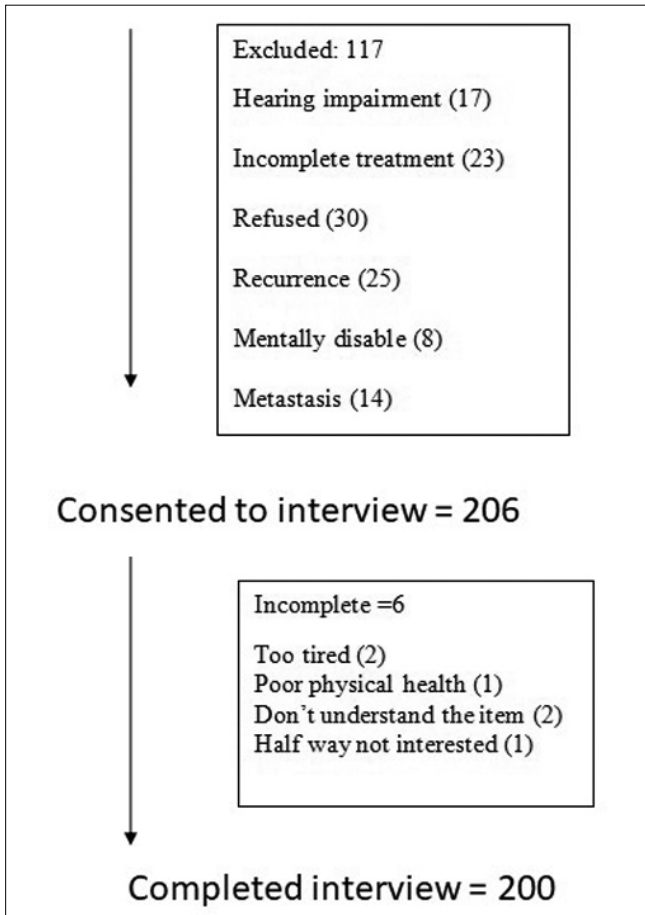


Figure 1. Displying the patients selected (n=323)

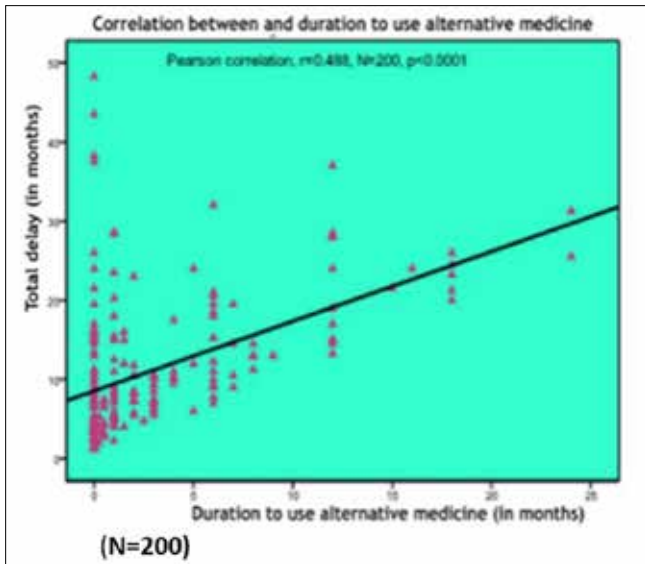


Figure 2. Correlation between delay and duration of local treatment used (N=200)

(p=0.039), it (lump) would be small (p=0.006), duration of local treatment used (p<0.0001). Less amount of money required associated with education (p=0.001).

Relationship between delay, stage of cancer and cause of delay due to use alternative medicine were summarized by two ways ANOVA. In

Table 4. Association with alternative medicine (N=200)

Variable: Alternative medicine	%(n)	%(n)	Comments, x <sup>2</sup> ,df=1
Patient delay	71.9%(64)	28.1%(25)	5.462, p=0.019
Provider delay	55.9%(62)	44.1%(49)	27.287, p<0.0001
Total delay	82.0%(73)	18.0%(16)	26.798, p<0.0001
Residence	45.9%(51)	54.1%(60)	6.006, p=0.014
Less amount of money required	11.8%(2)	88.2%(15)	Fishar exacts=4.250, p=0.059
It (lump) would be small	36.6%(67)	63.4%(116)	Fishar exacts=7.556, p= 0.005
Less amount of money required associated with education (N=116)	11.1%(3)	88.9%(24)	11.650, p=0.001
Duration of local treatment used (N=116)	62.7%(42)	37.3%(25)	Fishar exacts=21.71, p<0.0001
Homeopathy used	2.0%(1)	98.0%(50)	15.145, p<0.0001
	38.5%(25)	61.5%(40)	

stage II (Mean-4 vs. 8), delay due to alternative medicine were low, in stage III (Mean- 11 vs. 14), delay due to alternative medicine were sharply raised and in stage IV (Mean-9 vs. 12), mean of delay drop similar amount. Delay due to use alternative medicine was more than others. Here Main effect of stage was F (2, 194)=7.8, p=0.001, Partial Eta square was 0.074; Main effect of alternative medicine was F (1, 194)=5.37, p=0.022; Inter effect was F (2, 194)=0.019, p=0.981. Relationship between delay, first health care provider and alternative medicine was summarized (Figure 1-3). Those who sought help to alternative medicine and consulted with other than physicians, delay was maximum (Homeopathy- 4 vs.13; Physician- 8 vs.10; others- 9 vs. 13). Mean difference of delay (5.14) was more who sought help to homeopathy. Here Main effect of health care provider was F (2, 194)=1.08, p=0.342; Main effect of alternative medicine was F (1, 194)=4.97, p=0.027, Partial Eta was 0.025; Inter effect was F (2, 194)=0.542, p=0.582.

**Logistic regression**

In order to prediction of effect of alternative medicine on delayed help seeking, logistic regression was used. Alternative medicine was 1.9 times more likely to cause patient delay (OR=1.973; 95% CI 1.042-3.733) p=0.037 table 5. In provider delay, alternative medicine was 4

Table 5. Relationship of different variables with patient delay (N=200)

Variables	OR	95% CI for OR		p
		Lower value	Upper value	
Local treatment facilities for patients delay	1.973	1.042	3.733	0.037
Local treatment facilities for provider delay	4.665	2.302	9.456	0.000
Local treatment facilities for total delay	4.353	2.207	8.587	0.000

Table 6. Relationship of different confounder variables with total delay (N=200)

Variables	OR	95% CI for OR		p
		Lower value	Upper value	
Alternative medicine used	4.353	2.207	8.587	0.000
Health care service delivery and utilization	1.729	0.821	3.641	0.150
Social support	3.374	1.651	6.894	0.001
Economy condition	1.795	0.763	4.221	0.180
Mental upset	0.768	0.358	1.651	0.500
Perception	0.432	0.089	2.102	0.298
Present Treatment Status				
Total illness period	1.895	0.918	3.910	0.084
Present treatment	0.558	0.218	1.430	0.224
Stage of cancer	7.957	3.206	19.749	0.000
First symptom	1.122	0.511	2.465	0.774
First health care provider	3.862	1.877	7.944	0.000
Referred to cancer hospital	0.808	0.401	1.626	0.550
Diagnostic institution	0.552	0.243	1.250	0.154
Number of FNAC	1.829	0.867	3.860	0.113
Number of diagnostic visit	0.426	0.188	0.965	0.041
Socio Demographic Variables				
Education	0.827	0.442	1.546	0.551
Occupation	0.927	0.404	2.128	0.859
Family income (Taka/month)	0.573	0.253	1.294	0.180
Age in years	0.841	0.448	1.578	0.589
Marital status	1.113	0.528	2.345	0.778
Religion	0.598	0.205	1.745	0.347
Residence	1.383	0.741	2.582	0.309

To remove co-founder logistic regression analysis was done which was described in methodology previously

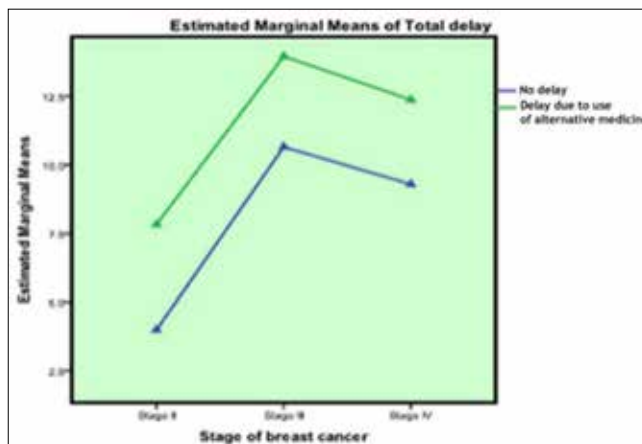


Figure 3. Two way analysis of variance (Two way ANOVA) between delay, stage of cancer and cause of delay due to alternative medicine (N=200)

times more likely cause delay on help seeking (OR=4.665; 95% CI 2.302-9.456)  $p < 0.0001$  and In total delay it was 4 times more likely to cause delay in help seeking (OR=4.353; 95% CI 2.27-8.587)  $p < 0.0001$ . The confounder analysis done and expressed in table 6.

**Correlation with use of alternative medicine**

Correlation between delay in help seeking and duration to seek alternative medicine of the breast cancer patients was analyzed using Pearson Correlation (r) method. The co-efficient r was 0.488,  $p < 0.0001$  and there was a positive correlation among delay and duration of use of alternative medicine.

**Discussion and Conclusion**

Even after modern advancement in medical science people in this area of the globe are still fond of using alternative medicine including herbal medicine. Adequate perceptions about use, effectiveness, safety, availability, and affordability of herbal medicine is popular among the community people even among religious leaders. So people become softer towards the different alternative medicine. To our knowledge in Bangladesh, to determine the prevalence of use of alternative therapies for breast cancer diagnosis and treatment is limited. There is no available data on it. As first contact with health care service provider 46.5% (93) respondents use alternative medicine. Among them, 86.02% (80) respondents use homeopathy, 58% (116) patients use alternative medicine at any pathway of their diagnosis and treatment. From them, 55.5% (111) patients delay to start diagnosis and treatment due to use alternative medicine. In a study it was found that 10-30% use alternative medicine and 66.7% respondents reported to use alternative medicine (16). In this study there was no significant difference in proportion of alternative medicine users by education level, religion, marital status which was same as previous study.<sup>1</sup> Moreover, 92.24% (107) respondents perceived that by using alternative medicine there would no need of operation, and saw that others were cured. However 97.41% (113) respondents assumed that lump would be small. To avoid disfiguration 88.79% (103) patients perceived to use alternative medicine. Why they took alternative medicine, they explained as same as their perceptions on use of alternative medicine. It was noteworthy, 24.32% (27) respondents said that said agents of the alternative medicine challenged that it would be cure. The traditional healer was perceived to be helpful 79.2% (76 of 96) of the patients who used it. Main reason for using mind-body practices which had the perception

that alternative medicine use improves emotional well being 92.0%. The use of alternative medicine was perceived to be an effective cancer treatment (46.4%). A majority of natural products users 10.0% and traditional medicine users, 7.1% reported that they expected these interventions to cure their cancer (1). Almost 57.76% (67) respondents perceived that due to use alternative medicine less amount of money required. It costs almost nothing in few cases. So, it can solve the economic problem for the poor. Annual expenditure on herbal medicine was also significantly lower, although they mentioned that per-visit expenditure was cheaper for herbal medicine ( $p < 0.01$ ) (17). There are less side effects when taking natural remedies like herbal medicine 92.6% (465), taking herbal medicine therapies are not harmful ( $n=503$ ) 98.4% (495)(17). Late stage breast cancer was more likely than those with early – stage cancer to report use any alternative therapy (3). Stage of cancer was significantly associated with delay and use of alternative medicine which was similar with this study (1). Delay in medical help seeking was due to use of alternative medicine; which is similar that the use of alternative medicine has been associated with delays in access to conventional treatment as well as abandonment of therapy (18). Out of 200 respondents, 30.18% ( $n=35$ ) use alternative medicine by herself, 27.58% ( $n=32$ ) neighbours gave advise to take alternative medicine, 25.86% ( $n=30$ ) husbands advised to take alternative medicine and only 16.38% ( $n=19$ ) relatives said to take alternative medicine. In another study it was found that to use alternative medicine leading source of information was mass media ( $n=193$ , 38.7%) followed by family members ( $n=95$ , 19.0%), herbal health workers ( $n=83$ , 16.6%), friends ( $n=66$ , 13.2%), and hospital health workers ( $n=44$ , 8.8%)(17).

#### Views about alternative medicine in the literature:

Acceptability of AM e.g homeo medicine is much popular in this part of the world. In a study on noncancer diseases in west Bengal close to Bangladesh border found that more than two third of the respondents showed their interest for homeo medicine (19). Recent data in another study expressed that cancer patients who initially chose treatment with AM without Conventional treatment were more likely to die. Improved communication between patients and caregivers and greater scrutiny of the use of AM for the initial treatment of cancer is needed (20), Alternative therapies used as primary treatment for breast cancer are associated with disease progression and increased risk of recurrence and death (21). Diminished outcomes are more profound in those delaying/omitting surgery (21). It is thus not surprising that cancer patients who choose alternative medicine have a higher risk of dying from their cancer. However, there is limited research evaluating the use and effectiveness of AM. According to SEER databases from 1973 to 2013 it demonstrated that the risk of death was higher for three out of the four cancers. Overall, the hazard ratio (HR) for death was 5.68 for breast cancer (CI 3.22 to 10.04). Another study, published in the *World Journal of Surgery* in 2012 examined women in the Northern Alberta Health Region who declined recommended primary standard treatments and included 185 women who refused standard treatment, resulting in a median delay in instituting effective treatment of up to 101 months. Women who declined primary standard treatment had significantly worse survival than those who received standard treatments. There is no evidence to support using Complementary and Alternative Medicine (CAM) as primary cancer treatment. Use of alternative medicine alone to treat cancer is likely to be a death sentence, or at least to cause delays that make ultimate cancer treatment with conventional medicine more difficult and less likely to be successful (22).

Above all it was observed that a large group of the women before starting the treatment they are wasting their time in the name of treatment in different unregistered and misbrand places of the society and presenting themselves with advanced stage of the disease. Though the existing study reflects the needy section of the community, it was a hospital based study, which might not reflect the total population of the country.

As because of diagnosis and treatment among breast cancer has different complex dimensions, Illiteracy, poor economic status, cultural context as well as easy availability and accessibility of alternative medicine diverted the patients to seek help from orthodox to alternative medicine. Therefore, magnitude of delay help seeking and use of alternative medicine is one of the burning problems among breast cancer patients in the underprivileged community of Bangladesh. For that, to achieve management success on breast cancer it is important to know that after feeling lump to whom first seek medical help. So Government set up and related health care providers have the tremendous avenue to work to make the community people aware and bring them in the primary health care centres for early diagnosis and treatment.

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**Ethics Committee Approval:** Ethics committee approval was received for this study from Institutional Review Board of National Institute of Preventive and Social Medicine (2016/18) and written permission was taken from Ethical committee hospital authority National Institute of Cancer Research and Hospital before taking interviews (2016/204-5).

**Informed Consent:** Written informed consent was obtained from all patients who participated in this study in a predesigned consent form.

**Peer-review:** Externally peer-reviewed.

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