IMPROVING BREAST CANCER AWARENESS AMONG ADULT FEMALES IN MBINGO BAPTIST HOSPITAL COMMUNITY.

Remedy Bih^{1, 2*}, Jane Frank Nalubega², Edith Akankwasa², Elizabeth Okello², David Kavuma². ¹University of Manchester, UK. ²Mildmay Institute of Health Sciences.

Page | 1

Abstract Background

Breast cancer awareness strategies have been proven to reduce breast cancer-related deaths in many countries worldwide. This project is ongoing, creating behavior change attitudes in most women in the community by empowering them to take responsibility for their breast health.

Methodology

This project used a logical framework with stakeholders and community involvement. Support groups and survivors to tell their stories, which acts as a boost to the project's success. Choosing a change agent model with the help of Kotter's change model facilitated in management of change in this process. The M & E structure has enabled the project sustainability with community training and retraining activities to "cause the change to stick". Creating a conducive environment through good leadership, communication, and the motivation of team members further propelled the project from step to step.

Results

Learning lessons of tolerance, team building, resource management, and managing change cannot be overemphasized. This project opened avenues for further research. Granted more finances, many adult females accessing this community shall be reached, thereby promoting health through behavior change.

Conclusion

BC awareness continues to be the best strategy to fight and ensure early breast cancer diagnosis and treatment at MBH, Cameroon, Africa, and the world. This strategy has been proven to strengthen health systems and build communities through health promotion.

Recommendation

BCA campaigns should be implemented as part of a health promotion strategy aimed at enlightening communities about the dangers of late BC diagnosis

Key words: Breast Cancer Awareness, Adult Females, Mbingo Baptist Hospital. Submitted: 2025-02-25 Accepted: 2025-04-11 Published: 2025-06-01 Corresponding Author: Remedy Bih University of Manchester, UK Mildmay Institute of Health Sciences.

Background of the study

BC is the most commonly diagnosed cancer type in women, accounting for 1 in 8 cancers diagnosed worldwide (Cowin et al, 2005; Waks et al, 2019; Sharma et al, 2010). Saika et al (2013) state that 30% of all new female cancers diagnosed each year are breast cancers. In 2020, 2.3 million women were diagnosed with BC, and 685,000 (25%) deaths were recorded globally, with a woman diagnosed with breast cancer every 14 seconds (Cao et al, 2021; Tao et al, 2015; Ma & Jemal, 2013).

BC burden in Africa is severe as it is responsible for 36.2% of all cancer types and 44%-54.5% of deaths in women (DeSantis et al, 2014; Joko et al, 2020; Wingo et al, 1996). Adult females up to 90% in developed countries survive breast cancer as opposed to only 40% in Africa (DeSantis et al, 2016; 2013; Ghafoor et al, 2002). These scholars add that the reduced percentage in Africa is due

to late breast cancer diagnoses resulting from inadequate or no BCAP, access to healthcare facilities, little or no universal health coverage, and poor awareness programs, among other factors.

The situation in Cameroon is burdensome as 80% of patients with BC come into the few diagnostic health facilities, most with advanced Stage III and IV disease (Richard et al, 2020; Hentsch et al, 2020). Reasons include inadequate health awareness, few diagnostic health facilities, poor policy implementation issues, limited resources, religious, leadership, and governance issues, and health beliefs (Halmata et al, 2021; Ngwa et al, 2022). Also, Long et al (2015) and Grossheim et al (2021) agree, adding that most of the issues affecting healthcare delivery in Cameroon are implemented mostly in cities, leaving the rural population to suffer.

MBH shares the same burden as 80% of adult females die due to late breast cancer presentation (MBH CAMREG 2021/2022). Linsell et al (2010); Thackeray et al (2013) state, "late diagnosis of BC has contributed to reducing the life expectancy of six months to 5 years in MBH as opposed to 40 to 50 years survival rates in Europe and America. Hence, breast cancer awareness, if strengthened, shall improve breast cancer survival outcomes and pave the way for better health promotion (Sarsby 2016; Guel 2017).

Page | 2

Methodology PROJECT IMPLEMENTATION DESIGN

This BCA project has devoted oncology nurses, pathology laboratory staff, and influential community leaders identified and trained to detect breast lumps and discharges. The training is aimed at increasing personnel knowledge on suspected BC identification and educating the adult female population on how to do a self-breast examination, geared towards changing female attitudes through awareness. These personnel will be able to facilitate BCA discussions, answer questions related to BC, lead role plays, and distribute handouts. Also, by motivating adult females in the community to regularly visit health facilities for their breast healthcare, emphasis is placed on the importance of quick referrals in suspected cases. This all is within a stipulated timeframe with monthly reports and activity schedules well spelled out and checklists obtained regularly as suggested by (Hanna et al, 2016).

PROJECT OVERVIEW

The management office of this project shall be located in Bamenda at the Cameroon Baptist Convention Health Services offices (CBCHS). The Director of CBCHS will be the Project Director, overseeing all cancer activities within the CBCHS. Cornford et al (1996) and Thorn & Nixon (2006) state that choosing a conducive geographical location for a project office is critical, as factors such as demands for skills, cost of living, quality, opportunity for growth, and cultural fits should be strongly considered. This choice is based on the fact that MBH is presently in a war zone with armed militants who, from time to time, block roads; locating the office in Bamenda eases movement, and reduces the cost of living and associated risks as suggested by (Wohlers & Hertel, 2017). Movement in Bamenda is rarely disrupted by armed fighters.

This project focuses on psychosocial activities with a management team consisting of devoted oncology nurses, pathology laboratory staff, pathologists, oncologists, radiologists, community health workers, the change agent, and the MBH nursing supervisor, working closely with the project director for quality service delivery, working within the policy framework.

PROJECT MANAGER

The Project Manager shall be the radiation oncologist who is a change agent, having the responsibility for delivering Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue <u>https://doi.org/10.51168/sjhrafrica.v6i6.1602</u> Original Article

the project as suggested by Chaghooshi & Arab (2016), leading and managing the project team with authority and responsibility from the project board to run the project on a day-to-day basis. The choice of the project manager is based on his/her effective leadership and good communication skills, ability to problem-solve, and teambuilding skills with integrity and competence. Also being the cancer coordinator for the CBCHS with skills in managing cancer projects, the manager shall work with enthusiasm and competence involving key persons, as cited by Maplesden 2017).

PROJECT SUPERVISOR

The Project Supervisor is the change agent, overseeing all project activities and ensuring resource mobilization. The project supervisor shall work closely with all project team leaders at various levels who are also change agents in their respective departments. From time to time, team leaders submit reports and report directly to the Supervisor. The Supervisor also has the role of hiring, training, and qualifying educators to perform and complete project tasks as cited by (Moskvicheva et al, 2015).

THE MBH COMMUNITY

The health personnel, community health workers, psychosocial agents, community leaders, and breast cancer survivors are all acting as change agents to facilitate change among adult females in this community, as suggested (Battilana & Csciaro, 2013). The Supervisor reviews and coordinates workers and activities, ensuring services are provided within standards (Kontogiannis 2010; Ramotsisi et al, 2022). Trained as a counselor, the Supervisor shall be able to continuously monitor awareness counseling sessions, therefore motivating counselors to provide appropriate breast cancer awareness messages at all times. The Supervisor is also monitoring the visits of adult females for breast healthcare in all MBH community clinics by tracking and receiving reports from the change agents.

The committed oncology nurses, pathology laboratory staff, psychosocial agents, and breast cancer survivors are selected and trained as BC counselors, equipping them with awareness skills on breast cancer early warning signs/symptoms and highlighting breast cancer risk factors. Likewise, emphasizing BC, treatment costs with expected treatment outcomes can be evaluated.

The psychosocial workers will have the challenging role of educating adult females on accepting breast cancer diagnosis, teaching these females how to accept breast cancer treatment, and empowering them to take responsibility for their health for better treatment outcomes, as suggested by (Knowles 1977; Schmidt 2009). These shall help women to unlearn the myths about breast cancer and embrace acceptable treatment options (Thomson et al, 2014).

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sjhrafrica.v6i6.1602 Original Article

BREAST CANCER SUPPORT GROUPS

Inclusion means creating a welcoming environment with equal access to opportunities and resources regardless of background, race, or ethnicity (Kim et al, 2012; Sillence, 2013). These groups consist of key leaders and resource persons reinforcing BCA strategies, with team members telling their stories to encourage and empower newly diagnosed adult females. Support groups have been seen to play important roles in demystifying myths and overcoming stigma in many diseases (White-Means 2016; Wilkinson 2023). The groups made up of BC survivors, committed nurses, and influential community key persons play this vital role. This is critical, as these persons took it upon themselves to own and manage the change, having been victims of this dreaded disease. Telling their story can create opportunities for victims to the responsibility for overcoming BC issues.

PROJECT SUSTAINABILITY

Project sustainability, according to Aarseth et al (2017), is "meeting the needs of the present without compromising the ability of future generations to meet their own needs". Silvuis & Schipper (2014) add that identifying and training community leaders, empowering, implementing, monitoring, and evaluating the process ensures project Key persons are identified, trained, sustainability. monitored, and evaluated to ensure continuity. The key persons in this project shall work closely with the supervisor under the CBCHB project norms and standard policy guidelines to ensure that BCA strategies are put in place, followed by close monitoring and evaluation to ensure behavior change. Doing so shall help in community outreach, influencing those with resistance to see the need for change. This information can be spread throughout the entire breast cancer network to prove BCA's goals.

PROJECT MONITORING AND EVALUATION (M&E)

M&E is one of the vital elements of a project's implementation (Knowles, 1998). Therefore, without M&E, the project might be at risk of no progress (Marfow, 2014). This project, therefore, required progressive M&E. The M& E team for the CBCHB cancer program continued to monitor and report newly diagnosed adult female breast cancer cases as well as track and report all females screened monthly in the MBH community. Likewise, all adult females coming into this community for breast healthcare shall be registered, with all newly diagnosed individuals closely followed up for enrollment and treatment. Monthly reports will be generated on the number of patients counseled before enrollment. The management will continue to do quarterly supportive visits using SIMS tools to ensure that trained workers have been providing good BCA messages to adult females in all clinics, rallies, and groups with appropriate documentation. Examining the SWOT tool shall be discussed next.

PROJECT SWOT ANALYSIS

This section sought to examine the strengths, weaknesses, opportunities, and threats of the MBH community. A good project must state clearly the internal and external environment that might influence it (Berry, 2018). Likewise, Grant (2019) states that "a good analysis of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of a project is essential for the progress of the project". This portion discusses the aspect of SWOT in the project execution regarding improving breast cancer awareness.

STRENGTHS

MBH is a referral hospital and the only hospital in the NWR of Cameroon that diagnoses and treats cancers. Being a site for the training of internists and surgeons, MBH receives patients from all over the country and some parts of West and Central Africa. MBH has well-trained, specialized, and experienced staff in many health departments. MBH has developed an evidence-based approach to medical practice using a holistic approach with many expatriates. Located along a ring road, it is easily accessible with favorable climatic conditions. Its scenery and mountainous nature act as a 'tourist' site for most medical missionaries who love sharing knowledge, bringing in donations, and improving quality through project writing and funding. As the only Hansen's Disease hospital in the country, MBH has drawn worldwide attention through the empowerment and rehabilitation of treated leprosy patients. MBH has a hydroelectric dam that has improved health services through the continuous running of heavy-duty and complex health machines and has trained/trained biomedical staff to maintain medical equipment. MBH is presently constructing a radiotherapy center that will become only the second in Cameroon. This should ensure cancer treatment efficacy as clients would no longer travel the 360 dangerous and treacherous kilometers to the lone radiotherapy center in Douala. MBH has a patient-bus-services system that assists in transporting patients and their caregivers to and from the hospital, especially during rebel 'lockdown' periods. MBH has an oxygen concentration plant that supplies oxygen to applicable patients both in this community and in other CBCHB health facilities. This enabled critical patients to be well managed in intensive care units.

WEAKNESSES

MBH has still been within an armed conflict region since 2016. This hospital sometimes experiences lockdowns from armed separatist groups, preventing patients and supplies from reaching the hospital. Found in a rural area, most workers prefer working in cities to exploit better working opportunities and further their education. Being in a low-income area, MBH faces procurement problems such as adulterated reagents from local suppliers, causing difficulties in cancer diagnosis. Similarly, the costs of pathology laboratory tests for clients in MBH are

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sjhrafrica.v6i6.1602

Original Article

relatively expensive; some specialized tests are not done in MBH, posing problems of treatment delay. Likewise, the increasing workload in MBH with few specialized workers increases diagnostic and treatment delays.

OPPORTUNITIES

Page | 4 $\frac{1}{d}$

The fact that MBH is the only cancer treatment and diagnostic center in the NWR is an opportunity to always encounter new and emerging cases, creating continuous learning and project opportunities. Being a referral center, it is minimally supported by the government through infrastructure, equipment, and medical supplies, and serves as a practicum site for research and projects.

THREATS

Inadequate BCA in the MBH community has affected the way adult females view breast health in this community. Cultural/religious beliefs, financial constraints, with unimplemented health policies affect the uptake of this health issue in this community. These results in late breast cancer diagnoses and an increase in BC deaths in this community. Overworked workers receiving low salaries tend to "leave for greener pastures". The sociopolitical crises in this area have greatly reduced the number of clients coming into this community, in turn causing the already sensitized adult females to delay coming for routine breast exams.

PROJECT IMPLEMENTATION

This section explains the strategies and activities employed to achieve the objectives stated above. Included shall be a reflection on the interventions and achievements that facilitated the strategies to be used.

OBJECTIVE 1

To reduce breast cancer deaths from 80% to 50% by December 31st, 2024, in adult females in MBH.

Strategy:

To screen and diagnose all adult females in the MBH community for possible breast masses and nipple discharges.

ACTIVITY

Conduct possible screening and diagnostic exercises in MBH.

OBJECTIVE 2

To increase early breast cancer diagnosis and treatment among adult females from the current 20% to 80% by the end of 2024.

ACTIVITY

Conduct monthly breast cancer education in churches, schools, social gatherings, and clinics by trained health and community workers.

OBJECTIVE 3

To establish and enhance breast cancer awareness networks among adult females in the MBH community, divisional, and regional levels by the end of 2024

Strategy 1

Train health community workers to enhance breast cancer awareness in the MBH community through media houses and text messages.

Conduct training to empower health and community workers on breast cancer education and breast self-examination.

Strategy 2

Form community support groups

Activity

Bring together survivors to be able to network, train, encourage, and empower newly diagnosed clients.

OBJECTIVE 4

To increase awareness among the masses on preventive measures against breast cancer by the end of 2024.

Strategy 1

To establish lifestyle modification forums for preventive education.

Activity 1

Discuss physical and lifestyle policies to implement regular physical activity programs to reduce the risks of developing breast cancer.

Activity 2

Organize physical activity clubs with motivational prizes to encourage regular physical exercise.

THE INTERVENTIONS AND ACHIEVEMENTS SO FAR

NEEDS ASSESSMENT

The EBNA conducted in October 2022 established the basis for adult females coming to MBH with Stage III and IV breast cancer. The reasons are derived from clients and healthcare providers having inadequate knowledge of BC disease, cultural/religious factors, unimplemented health policies, and a lack of finances to seek medical care. Urgent identified needs were prioritized, such as patients' results and turnaround time to quicken breast cancer This identified need caused this author to treatment. communicate with the MBH management as suggested (Van der Linden et al, 2014); this BCA need was approved. Taking into consideration that change comes with resistance, the writer has involved the stakeholders and communicated the vision, outcomes, and goals of the project with the ongoing project team to reduce and overcome these resistances as suggested by (Petal & Nowsheen, 2020; Gelman et al, 2020). However, Murray & Brauer (2019) suggest that for change to be embraced, emotional intelligence, adaptability, confidence, and resilience need to be applied. John Kotter adds 'For change to be successful, 75% of the management has to side with the change strategy' (Kotter 1995). The project uses an evidence-informed approach, with such little resistance that change could not be affected. The key actors, including health workers, were excited about the change from the start because they saw this as work relief when they learned of the increased workforce. However, when the work started, there was some resistance in areas such as consistency in the registration of new cases and

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sjhrafrica.v6i6.1602 Original Article

case follow-up, and work pressure sometimes resulted in very little counseling (such as issues of language barriers). However, choosing Kotter's change model facilitated overcoming resistance.

ACHIEVEMENTS

Page | 5 Approval

The project was approved by the MBH management after reviewing the October 2022 EBNA report and the impact created by the education for change in the aspect of BCA. BCA was incorporated into the continuous education program within the MBH community, which included recommendations to be put in place from the Education for Change. The project is funded by MBH. Continuous training, teamwork, and good working relationships are the attributes that enable sustainability, as suggested by Kotter 1996). The implementation is ongoing and is so far hitch-free.

TRAINING OF HEALTH WORKERS AND COMMUNITY HEALTH WORKERS (CHWs)

According to Rosenthal et al (2010), "CHWs are frontline public health workers who are trusted members of or have a usually close understanding of the community". These persons serve as linkages between health/social services and the community they serve. CHWs facilitate access to services and improve the quality and cultural competence of service delivery (Vidakovic et al, 2020; Kordi & Belayutham, 2021). CWHs also build individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support, and advocacy. This builds healthy communities with a focus on equity. The proof that education for change has been helping MBH is that adult females are taking responsibility for their health, seeking ways of regularly examining their breasts, and empowering them to start businesses to help pay their bills.

TRAINING AND EVALUATIONS

According to Goesling (2007) and Zimmerman & Woolf (2014), education can identify emerging trends and best practices that can be adopted to enhance teaching and learning outcomes. They further add that through evaluation, areas of research can be identified that need further investigation, which can lead to new and innovative educational practices. A total of 132 CHWs have been trained and equipped to champion BCA activities both in the communities and the hospital. This has seen an increase of 2682 BC adult females screened in 2023, with 872 suspected cases and 730 of those diagnosed with breast cancer. The CHWs are creating a positive impact in this community by increasing females wanting to know about and prevent breast cancer, thereby improving community health, as stated by (Akram et al, 2017; Anastasi et al, 2019). Managing change during this process is inevitable, as discussed below.

CHANGE MANAGEMENT RATIONALE FOR CHOOSING A CHANGE AGENT MODEL (HBM) SKILLS

The HBM proposed that people are most likely to take preventive action if they perceive the threat of a health risk to be serious (Brown et al, 2011; Herrmann et al, 2018). Champion & Skinner (2018) affirm this, stating further that these behaviors are influenced by factors such as culture, beliefs, and conceptions. Studies have proven that education based on theories and cognitive frameworks to enhance health awareness has succeeded and improved treatment outcomes, thereby promoting health (Gardois et al, 2014; Ghahramani & Courten, 2022).

Likewise, HBM posits that awareness messages will achieve optimal behavior change if they successfully target perceived barriers, benefits, self-efficacy, and threats (Champion & Skinner, 2008). Similarly, the HBM has yielded fruit in many projects and has affected behavior change attitudes, such as the breast selfexamination project, which was carried out in Isfahan by Moodi & Mood (2011). In addition, the BHM has been successful in a prostate cancer screening project carried out by Zare et al (2016) and in a colorectal cancer prevention screening project by Uslan et al (2023) in Pennsylvania. This enforces the use of the HBM in this project cannot be overemphasized.

Application of Kotter's change model

Effective communication and leadership skills are helping to overcome resistance and the use of Kotter's eight-step change model as suggested by (Spear 2016; Wentworth et al, 2020).

Kotter's change model, published in 1996 by John Kotter, operates under the principle that for change to occur, 75% of an organization's management needs to buy into the change process. This eight-step model creates a sense of urgency, recruits powerful change leaders, develops a clear vision, communicates the vision, empowers action, creates 'quick wins', consolidates gains, and anchors the change (Pollack & Pollack, 2015; Odiaga et al, 2021).

HOW KOTTER'S EIGHT-STEP CHANGE MODEL WAS USED IN THE PROJECT

The MBH community receives clients from all ten regions of Cameroon and neighboring countries, hence, it acts as a catchment area for many, which is seen in the makeup of the administration, staff of various departments, and doctors. This further validated the use of this model to combat resistance, build teamwork, and create sustainability in behavior change cannot be overemphasized in this community.

Creating a sense of urgency

According to John Kotter (1995; 2008), the sense of urgency "brings the outside in, remains committed to change, finds the opportunity in crisis, and deals with nonos". Kotter states that it motivates change to happen. This requires working with individuals to help them understand the impact, how they must feel the sense of urgency, and understanding how the change will affect them (Maximini 2015; Isaksson 2019). This was achieved by letting administration, pathology staff, oncology staff, and community health workers know the percentage of breast cancer cases that yearly die in this facility due to inadequate BCW (from the October 2022 EBNA), with evidence-based statistics.

Page | 6

Recruit powerful change

Changing behavior in a community requires hard work. Jain (2023) said recruiting a powerful coalition of persons to lead the change process is key. Selecting and training dedicated pathology laboratory staff, oncology nurses, social workers, community health workers, and BC survivors was achieved at this level. However, knowing beforehand the myths attached to cancers in this community helped this author to cite the myths, and cultural and religious beliefs in the training curriculum to aid in reducing resistance. This is done to equip all involved for continuous education on breast cancer signs/symptoms and teach clients how to conduct selfbreast exams.

CREATING A CLEAR VISION

For change to take place, the change agent working in tandem with their team needs to keep a clear, concise, and focused vision (Wasserberg 1999; Zakariasen et al 2002). Gould et al (2003) agree with this, adding that this should be within the organization's overall goal. The vision of this project was to reduce breast cancer deaths from the current 80% to 20% by the end of 2024. This is embodied in the organizational vision, which states that "seeking to provide holistic healthcare with Christ-like compassion to all who need it". Therefore, the vision of "healthcare for all adult females" shall be guaranteed should BC be prevented, diagnosed, and treated early. The goals and objectives will be in line with the national health strategic plan (WHO 2017; Sieleunou et al, 2021).

COMMUNICATING THE VISION

The vision was communicated to MBH management and heads of departments. Health workers are reminded daily about the need for proper counselling and education as the process is still ongoing. Key persons included the supervisor, project manager, project director, and selected health workers, who stayed well informed. It has not been limited to verbal communication; an abstract of the EBNA has also been delivered to key persons as suggested by (Kinawy et al, 2018) for them to understand the urgency of this need.

REMOVE BARRIERS TO ACTIONS

The barriers here included workload, burnout, low motivation, little collaboration among staff, and language barriers. However, holding monthly meetings helps overcome resistance as suggested by (Kiel et al, 1996; Jaca et al, 2012). Similarly, language barrier issues were

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue <u>https://doi.org/10.51168/sjhrafrica.v6i6.1602</u> Original Article

being tackled by using community leaders who often act as interpreters with home visits to improve confidence and dialogue. This created honor for clients and greatly removed cultural and religious barriers as myths/beliefs were being demystified through education/counseling. Adult females were often reminded of their monthly routine breast exams through community radios and church/community social meeting announcements. Motivations for staff came from awards and performancebased financing. Workload and burnout issues were managed by the work schedule: assignments were reviewed and restructured with staffing needs and concerns managed to ensure work was evenly distributed and workers had their earned time to rest.

ACCOMPLISH SHORT-TERM WINS

This step was accomplished by engaging stakeholders to execute each task. The M&E team monitored progress and made results visible during monthly meetings. Work accomplished by stakeholders is recognized and rewarded as stakeholders complete short-term goals (Maximini & Maximini, 2015).

BUILD ON CHANGE

'Press harder after the first successes,' as stated by Williams & Wilkins (2008). These scholars further stated that "increasing credibility had improved systems, structures and policies", being relentless with initiating change after change until the vision is a reality. This step is ensured by always reminding the stakeholders that the complete vision has not been achieved, even though the short-term success of having increasing numbers of adult females regularly coming to MBH for routine breast examination increased from 305 cases screened with breast lumps in 2021 to 440 cases screened in 2022. We must continue reminding stakeholders that the goal is to get females to change their attitudes.

MAKE CHANGE STICK

Wood (2019) stated that behavior change is ensured when old habits are replaced. These scholars added that the change had to become part of the core of the organization. Kotter & Cohen (2006) wrote, "Culture changes when a new way of operating has been shown to succeed over time". The culture of awareness has worked in so many countries and is ongoing in MBH, with the goal it encouraging adult females to seek early breast cancer diagnosis and treatment.

MATERIALS AND METHODS USED

This project's success was measured by using questionnaires that were administered during the EBNA and repeated during the BCA campaigns. The questionnaire was designed to assess the level of adult females' knowledge of BCA as suggested by (Linsell et al, 2008; Heidari & Feize, 2018). The questionnaire contained 25 basic but critical questions having either a YES or NO answer. The exercise was repeated every BCA session. BC charts were used for training with pre-test and

post-test assessments employed, and role plays and charts were used to ensure that all learners had learned well and with understanding (Ansell et al, 2008).

CHECKING FOR ATTITUDE TRANSFORMATION

Page | 7

7 This was determined by using registers in the women's health department. All women come in for regular breast exams, and the pathology laboratory registers to track all biopsies and fine needle aspirations from suspected breast lumps. Likewise, from questionnaire answers. Similarly, all diagnosed breast cancer cases were tracked in the Oncology unit for effective treatment commencement.

RESULT ANALYSIS

The conceptual design with the quantitative approach was used for this project. Beyer & Holtbatt (1998), Hertzum (2003), and French et al (1985) stated that this is a powerful approach to obtaining and analyzing behavioral data. The choice of these methods provided relevant and reliable information, which was used for decisionmaking, planning, and control with figures that can help in future forecasts (Muhlich et al, 2020; Kelle, 2006). Data was analyzed using the statistical analysis plan. This study employed the statistical software package (SPSS) (V 17.0) (Dzekashu et al, 2016). So far, there has been a significant increase in the number of BC cases screened and early diagnosed since the beginning of this project in MBH, with the numbers rising from 468 cases/198 positives in 2021 to 658/316 positive cases in 2022. This number had greatly increased to 878 cases in 2023, with 406 breast cancers diagnosed. This increase is clearly correlated to, and has now been documented to be, the result of increased breast cancer awareness and is expected to increase further to meet the target as the project continues.

UPSCALING EDUCATION FOR CHWS ON BCA SENSITIZATION

Hodgins et al (2013) suggested this was done through dissemination and advocacy, organizational process, cost/resources mobilization, monitoring, and evaluation. This was achieved by integrating the CHWs that were trained during the education for change in MBH, with newly selected CHWs, together in retraining sessions to keep the CHWs focused on the project's vision. This ensured sustainability and resource mobilization as cited by (O'Donova et al, 2020; Hand et al, 2021). The MBH community has ever since been motivated by the EBNA result, pushing key actors to own and get involved in the change process, therefore working in collaboration with the change agent to achieve the desired goal. This involvement has attracted resources from MBH management and the Women's Health Program to help fund this project. Similarly, working with MBH management to incorporate BCA in the community outreach programs shall further boost and increase overall community health as suggested by (Berge et al, 2017; McNeill et al, 2020).

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sjhrafrica.v6i6.1602 Original Article

LIMITATIONS, LEARNING PROCESS

Building an effective team for the improvement of BCA was a difficult yet productive task (Fallowfield et al, 2014; Gadgil et al, 2020). This process required continuous and intensive training and evaluation, retraining of persons to build knowledge, competence, and emotional and psychological stability that focuses on the project's vision. Also, managing time during this process was difficult as some activities were delayed by roadblocks from the sociopolitical crises in this area. Gathering data was sometimes difficult due to the workload on some key personnel. Staff leaves/days off schedules are also a hindrance, as some key personnel are forced to overwork, causing burnout. Financing the project is a big limitation, as more women could be reached, but for accessibility. All the 'wins' motivate the success of the process. Leadership and good communication skills put to use within the project helped to create a good working environment and improved teamwork as suggested by (Zulch 2014; Zakaria et al, 2015). Motivating burned-out workers and treating team members with dignity encouraged members, thereby bringing out the best in them.

CONCLUSION

BC awareness continues to be the best strategy to fight and ensure early breast cancer diagnosis and treatment at MBH, Cameroon, Africa, and the world. This strategy has been proven to strengthen health systems and build communities through health promotion. Reaching out to the communities and empowering them to take responsibility for their breast health ensures public health. The involvement of stakeholders, health experts, and survivors facilitates policy and behavior change. Using a project with a logical framework to build capacity and empower individuals as change agents to influence behavior change is the way forward. Employing behavior change theories and health models using Kotter's change model to build, focus, and maintain change to reduce and overcome resistance is a success. Learning great lessons and identifying limitations creates opportunities for further research.

RECOMMENDATIONS

BCA campaigns should be implemented as part of a health promotion strategy aimed at enlightening communities about the dangers of late BC diagnosis. The Ministry of Public Health should strengthen community involvement through the already existing health systems. State subsidies should be made available by the Ministry of Public Health to assist BCA programs to ensure community health. More cancer diagnostic and treatment centers should be treated, and more pathology/oncology staff should be trained by the MBH management to support the increasing number of cancers diagnosed in this community.

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sjhrafrica.v6i6.1602

ttps://doi.org/10.51168/sjnratrica.v616.1602 Original Article

ACKNOWLEDGMENT

I sincerely wish to thank the Almighty for His strength, wisdom good health throughout this study period. I am very grateful to my husband, Mr Jam, for his encouragement and huge financial support; may the Almighty continue to bless and replenish your resources, sir. To my children, thank you, kids, for all your love and support. To my supervisor, Mr David Kavuma, may God bless you, sir. A big thank you to the MBH management for providing an environment and resources to study. To my colleagues, I sincerely thank you all for your collaboration during this period. And lastly, to all the breast cancer cases, I am thankful and hoping that together we shall beat breast cancer in our communities.

LIST OF ABBREVIATIONS

BCA	Breast cancer awareness				
BC	Breast Cancer				
BMI	Body mass index				
	Cameroon Baptist Convention				
Health Services					
CIMS	Christian Internal Medicine				
Specialization					
CHWs	Community Health Workers				
EBNA	Evidence-Based Need				eds
Assessment					
EHBM	Ext	ensive	Health	Be	lief
Model					
НВМ	Health Belief Model				
M & E	Monitoring and Evaluation				
	Mbingo Baptist Hospital				
NCDs	Noncommunicable disease				
NWR	Northwest Region				
PAACS				lemy	of
Christian Surgeons					
SDGs	Sustainable			/elopm	ent
Goals				_	
UHCUniversal Health Coverage					
				-	

SOURCE OF FUNDING

The project was not funded.

CONFLICT OF INTEREST

The author declares no conflict of interest.

DATA AVAILABILITY

Data is available upon request.

INFORMED CONSENT

All the study participants consented to this study.

REFERENCES

 Aarseth, W., Ahola, T., Aaltonen, K., Økland, A. and Andersen, B., 2017. Project sustainability strategies: A systematic literature review. International Journal of Project Management, 35(6), pp.1071-1083. https://doi.org/10.1016/j.ijproman.2016.11.006

- Akram, M., Iqbal, M., Daniyal, M. and Khan, A.U., 2017. Awareness and current knowledge of breast cancer. Biological research, 50, pp.1-23. https://doi.org/10.1186/s40659-017-0140-9
- Anastasi, N. and Lusher, J., 2019. The impact of breast cancer awareness interventions on breast screening uptake among women in the United Kingdom: A systematic review. Journal of Health Psychology, 24(1), pp.113-124. https://doi.org/10.1177/1359105317697812
- 4. Ashkenas, R.N., 1994. Beyond fads: How leaders drive change with results. People and Strategy, 17(2), p.25.
- Battilana, J. and Casciaro, T., 2013. Overcoming resistance to organizational change: Strong ties and affective cooptation. Management Science, 59(4), pp.819-836. https://doi.org/10.1287/mnsc.1120.1583
- Berry, J.M. and Wilcox, C., 2018. The interest group society. Routledge. https://doi.org/10.4324/9781315534091
- Cao, L., Huang, C., Zhou, D.C., Hu, Y., Lih, T.M., Savage, S.R., Krug, K., Clark, D.J., Schnaubelt, M., Chen, L., and da Veiga Leprevost, F., 2021. Proteogenomic characterization of pancreatic ductal adenocarcinoma. Cell, 184(19), pp.5031-5052.
- Chaghooshi, A., Arab, A. and Dehshiri, S., 2016. A fuzzy hybrid approach for project manager selection. Decision Science Letters, 5(3), pp.447-460. https://doi.org/10.5267/j.dsl.2016.1.001
- Champion, V.L., Gathirua-Mwangi, W., Cohee, A., Tarver, W.L., Marley, A., Biederman, E., Stump, T., Monahan, P., Rawl, S., and Skinner, C.S. 2018. Factors associated with adherence to mammography screening among insured women differ by income level. Women's Health Issues, 28(5), pp.462-469. https://doi.org/10.1016/j.whi.2018.06.001
- Cowin, P., Rowlands, T.M. and Hatsell, S.J., 2005. Cadherins and catenins in breast cancer. Current opinion in cell biology, 17(5), pp.499-508. https://doi.org/10.1016/j.ceb.2005.08.014
- DeSantis, C., Ma, J., Bryan, L. and Jemal, A., 2014. Breast cancer statistics, 2013. CA: a cancer journal for clinicians, 64(1), pp.52-62. Duggan, C., Trapani, D., Ilbawi, A.M., Fidarova, E., Laversanne, M., Curigliano, G., Bray, F. and Anderson, B.O., 2021. National health system characteristics, breast cancer stage at diagnosis, and breast cancer mortality: a population-based analysis. The Lancet Oncology, 22(11), pp.1632-1642. https://doi.org/10.1016/S1470-2045(21)00462-0
- Fitz-Gibbon, C.T. and Morris, L.L., 1996. Theory-based evaluation. Evaluation Practice, 17(2), pp.177-184.

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue

https://doi.org/10.51168/sjhrafrica.v6i6.1602 Original Article

https://doi.org/10.1016/S0886-1633(96)90024-0

- Gardois, P., Booth, A., Goyder, E. and Ryan, T., 2014. Health promotion interventions for increasing stroke awareness in ethnic minorities: a systematic review of the literature. BMC Public Health, 14(1), pp.1-14. Gary, H. S., Prakash, G., 2015. Mucinous carcinoma of the breast with neuroendocrine differentiation. Iranian Journal of Pathology, 10(3), p.231. https://doi.org/10.1186/1471-2458-14-409
- Ghafoor, A., Jemal, A., Cokkinides, V., Cardinez, C., Murray, T., Samuels, A. and Thun, M.J., 2002. Cancer statistics for African Americans. CA: a cancer journal for clinicians, 52(6), pp.326-341. Ghahramani, A., de Courten, M. and Prokofieva, M., 2022. The potential of social media in health promotion beyond creating awareness: an integrative review. BMC Public Health, 22(1), pp.1-13. https://doi.org/10.3322/canjclin.52.6.326
- Gelman, A., Vehtari, A., Simpson, D., Margossian, C.C., Carpenter, B., Yao, Y., Kennedy, L., Gabry, J., Bürkner, P.C., and Modrák, M., 2020. Bayesian workflow. arXiv preprint arXiv:2011.01808.
- Goesling, B., 2007. The rising significance of education for health? Social Forces, 85(4), pp.1621-1644.
 https://doi.org/10.1252/cof.2007.0068
 - https://doi.org/10.1353/sof.2007.0068
- Guel, F., 2017. Crowdfunding and social influence: an empirical investigation. Applied Economics, 49(57), pp.5802-5813. https://doi.org/10.1080/00036846.2017.134345 0
- Grossheim, L., Ruff, P., Ngoma, T., Vanderpuye, V., Mwango, G., Ochieng, P., Palmer, D., Kouya, F., Lasebikan, N., Ntekim, A. and Ngoma, M., 2021. Cancer and COVID-19 experiences at African cancer centers: the silver lining. JCO global oncology, 7(1), pp.410-415. https://doi.org/10.1200/GO.20.00564
- Grant, C.A., 2019. Systematically reviewing remote workers' well-being at work: A multidimensional approach. European Journal of Work and Organizational Psychology, 28(1), pp.51-73. https://doi.org/10.1080/1359432X.2018.154188

https://doi.org/10.1080/1359432X.2018.154188 6

- Halmata, M., Simo, R.T., Kembaou, G.N., Baiguerel, E.M., Ndopwang, L.C., Kamdje, A.H.N., Telefo, P.B., Nangue, C. and Nukenine, E.N., 2021. Breast cancer awareness and screening practice amongst health personnel and the general population of the littoral region of Cameroon. Heliyon, 7(7). https://doi.org/10.1016/j.heliyon.2021.e07534
- 21. Hanna, R., Duflo, E. and Greenstone, M., 2016. Up in smoke: the influence of household behavior on the long-run impact of improved

cooking stoves. American Economic Journal: Economic Policy, 8(1), pp.80-114. https://doi.org/10.1257/pol.20140008

- Hentsch, S., Tchintseme, K.F., Ivo, A., Rebecca, B., Larissa, H., Baiyee, T.E., Bardin, R., Nadège, N.K.A., Okonkwo, E. and Atem, T.Z., 2020. 43 Implementation, practice, and experiences of an international online multidisciplinary tumor board (IMDTB) with a cancer center in the northwest region of Cameroon. International Journal of Gynecological Cancer, 30(Suppl 4), pp. A108-A109. https://doi.org/10.1136/ijgc-2020-ESGO.191
- 23. Isaksson, M. and Stjerngren, E., 2019. Opportunities, Barriers, and Preconditions for Battery Energy Storage in Sweden: A Study Investigating the Possibilities of Grid-Connected Lithium-Ion Battery Energy Storage Systems in the Swedish Electricity Market.
- Jaca, C., Viles, E., Mateo, R. and Santos, J., 2012. Components of sustainable improvement systems: theory and practice. The TQM Journal, 24(2), pp.142-154. https://doi.org/10.1108/17542731211215080
- Kontogiannis, T., 2010. A contemporary view of organizational safety: variability and interactions of organizational processes. Cognition, Technology & Work, 12(4), pp.231-249. https://doi.org/10.1007/s10111-009-0131-x
- 26. Joko-Fru, W.Y., Miranda-Filho, A., Soerjomataram, I., Egue, M., Akele-Akpo, M.T., N'da, G., Assefa, M., Buziba, N., Korir, A., Kamate, B. and Traore, C., 2020. Breast cancer survival in sub-Saharan Africa by age, stage at diagnosis, and human development index: A population-based registry study. International Journal of Cancer, 146(5), pp.1208-1218.

https://doi.org/10.1002/ijc.32406

- Kiel, F., Rimmer, E., Williams, K. and Doyle, M., 1996. Coaching at the top. Consulting Psychology Journal: Practice and Research, 48(2), p.67. Kim, H. and D'Andrea, A.D., 2012. Regulation of DNA cross-link repair by the Fanconi anemia/BRCA pathway. Genes & development, 26(13), pp.1393-1408. https://doi.org/10.1101/gad.195248.112
- Kinawy, S.N., El-Diraby, T.E. and Konomi, H., 2018. Customizing information delivery to project stakeholders in the smart city. Sustainable cities and society, 38, pp.286-300. https://doi.org/10.1016/j.scs.2017.12.012
- 29. Knowles, J.H., 1977. The responsibility of the individual. Daedalus, pp.57-80.
- Kordi, N.E., Belayutham, S. and Che Ibrahim, C.K.I., 2021. Mapping of social sustainability attributes to stakeholders' involvement in the construction project life cycle. Construction

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sjhrafrica.v6i6.1602

Management and Economics, 39(6), pp.513-532.

https://doi.org/10.1080/01446193.2021.192376 7

- Linsell, L., Forbes, L.J., Burgess, C., Kapari, M., Thurnham, A. and Ramirez, A.J., 2010. Validation of a measurement tool to assess awareness of breast cancer. European Journal of Cancer, 46(8), pp.1374-1381. https://doi.org/10.1016/j.ejca.2010.02.034
- Long, S.P., Marshall-Colon, A. and Zhu, X.G., 2015. Meeting the global food demand of the future by engineering crop photosynthesis and yield potential. Cell, 161(1), pp.56-66. https://doi.org/10.1016/j.cell.2015.03.019
- Maplesden, F. and Horgan, G., 2016. Non-tariff barriers to New Zealand Forest products trade. A report prepared for the Wood Council of NZ Inc.
- Maximini, D. and Maximini, D., 2015. Vision and Strategy. The Scrum Culture: Introducing Agile Methods in Organizations, pp.115-118. https://doi.org/10.1007/978-3-319-11827-7_12
- 35. Moodi, M., Mood, M.B., Sharifirad, G.R., Shahnazi, H. and Sharifzadeh, G., 2011. Evaluation of breast self-examination program using the Health Belief Model in female students. Journal of Research in Medical Sciences: the official journal of Isfahan University of Medical Sciences, 16(3), p.316.
- 36. Moskvicheva, N., Bordovskaia, N. and Darinskaya, L., 2015. Role of students and supervisors' interaction in research projects: expectations and evaluations. Procedia-Social and Behavioral Sciences, 171, pp.576-583. https://doi.org/10.1016/j.sbspro.2015.01.163
- Pollack, J. and Pollack, R., 2015. Using Kotter's eight-stage process to manage an organizational change program: Presentation and practice. Systemic practice and action research, 28, pp.51-66. https://doi.org/10.1007/s11213-014-9317-0
- Ramotsisi, J., Kgomotso, M. and Seboni, L., 2022. An Optimization Model for the Studentto-Project Supervisor Assignment: The Case of an Engineering Department. Journal of Optimization, 2022 https://doi.org/10.1155/2022/9415210
- Richard, F., Majjaj, S., Venet, D., Rothé, F., Pingitore, J., Boeckx, B., Marchio, C., Clayton, F., Bertucci, F., Mariani, O. and Galant, C., 2020. Characterization of stromal tumorinfiltrating lymphocytes and genomic alterations in metastatic lobular breast cancer. Clinical cancer research, 26(23), pp.6254-6265. https://doi.org/10.1158/1078-0432.CCR-20-2268
- 40. Segall, L., Mardare, N.G., Ungureanu, S., Busuioc, M., Nistor, I., Enache, R., Marian, S. and Covic, A., 2009. Nutritional status

evaluation and survival in hemodialysis patients in one center from Romania. Nephrology Dialysis Transplantation, 24(8), pp.2536-2540. https://doi.org/10.1093/ndt/gfp110

Original Article

- 41. Schmitt, B., 2009. The concept of brand experience. Journal of brand management, 16, pp.417-419. https://doi.org/10.1057/bm.2009.5
- Sieleunou, I., Tamga, D.D.M., Maabo Tankwa, J., Aseh Munteh, P. and Longang Tchatchouang, E.V., 2021. Strategic health purchasing progress mapping in Cameroon: a scoping review. Health Systems & Reform, 7(1), p.e1909311. https://doi.org/10.1080/23288604.2021.190931
- Sillence, E., 2013. Giving and receiving peer advice in an online breast cancer support group. Cyberpsychology, Behavior, and Social Networking, 16(6), pp.480-485. https://doi.org/10.1089/cyber.2013.1512
- 44. Spear, S.L., 2016. Management of the highriding nipple after breast reduction. Clinics in Plastic Surgery, 43(2), pp.395-401. https://doi.org/10.1016/j.cps.2015.12.008
- 45. Ngwa, W., Addai, B.W., Adewole, I., Ainsworth, V., Alaro, J., Alatise, O.I., Ali, Z., Anderson, B.O., Anorlu, R., Avery, S., and Barango, P., 2022. Cancer in sub-Saharan Africa: a Lancet oncology commission. The Lancet Oncology, 23(6), pp e251-e312. https://doi.org/10.1016/S1470-2045(21)00720-8
- 46. Odiaga, J., Guglielmo, M.J., Catrambone, C., Gierlowski, T., Bruti, C., Richter, L. and Miller, J., 2021. KOTTER'S CHANGE MODEL IN HIGHER EDUCATION: TRANSFORMING SILOED EDUCATION TO A CULTURE OF INTER PROFESSIONALISM. Journal of Organizational Culture, Communications and Conflict, 25(2), pp.1-7.
- Sharma, S., Kelly, T.K. and Jones, P.A., 2010. Epigenetics in cancer. Carcinogenesis, 31(1), pp.27-36. https://doi.org/10.1093/carcin/bgp220
- 48. Sarsby, A., 2016. SWOT analysis. Lulu.com.
- Tao, Z., Shi, A., Lu, C., Song, T., Zhang, Z., and Zhao, J., 2015. Breast cancer: epidemiology and etiology. Cell biochemistry and biophysics, 72, pp.333-338. https://doi.org/10.1007/s12013-014-0459-6
- 50. Thackeray, R., Crookston, B.T. and West, J.H., 2013. Correlates of health-related social media use among adults. Journal of Medical Internet Research, 15(1), p.e2297. https://doi.org/10.2196/jmir.2297
- 51. Thomson, R.E. and Emery, W.J., 2014. Data analysis methods in physical oceanography. Newnes. Tozer, C.R., 2012. On the uncertainties associated with using gridded rainfall data as a proxy for observed rainfall. Hydrology and Earth System Sciences, 16(5), pp.1481-1499. https://doi.org/10.5194/hess-16-1481-2012

- 52. Uslan, U., Saleh, M.M. and Linome, B.S., 2023. The Validation of Local Knowledge-Based Module (LKBM) as Character Development Module for Elementary School Students in Kupang, Indonesia. Jurnal Penelitian Pendidikan IPA, 9(SpecialIssue), pp.619-626. https://doi.org/10.29303/jppipa.v9iSpecialIssue .6222
- 53. Waks, A.G. and Winer, E.P., 2019. Breast cancer treatment: a review. Jama, 321(3), pp.288-300. WHO, U.N.I.C.E.F., 2023. Unfpa. Geneva: WHO, p.2. https://doi.org/10.1001/jama.2018.19323
- 54. Wasserberg, M.A.R.K., 1999. Creating the vision and making it happen. Living headship, pp.154-165. https://doi.org/10.4135/0781446210218.p14

https://doi.org/10.4135/9781446219218.n14

- 55. Wentworth, D.K., Behson, S.J. and Kelley, C.L., 2020. Implementing a new student evaluation of the teaching system using the Kotter change model. Studies in Higher Education, 45(3), pp.511-523. https://doi.org/10.1080/03075079.2018.154423
- 4
 56. Wingo, P.A., Ries, L.A., Giovino, G.A., Miller, D.S., Rosenberg, H.M., Shopland, D.R., Thun, M.J., and Edwards, B.K., 1999. Annual report to the nation on the status of cancer, 1973-1996, with a special section on lung cancer and tobacco smoking. Journal of the National Cancer Institute, 91(8), pp.675-690. https://doi.org/10.1093/jnci/91.8.675
- 57. White-Means, S., Rice, M., Dapremont, J., Davis, B., and Martin, J., 2016. African

Student's Journal of Health Research Africa e-ISSN: 2709-9997, p-ISSN: 3006-1059 Vol. 6 No. 6 (2025): April 2025 Issue https://doi.org/10.51168/sibrofrico.yt/i6.1602

https://doi.org/10.51168/sjhrafrica.v6i6.1602 Original Article

> American women: surviving breast cancer mortality against the highest odds. International Journal of Environmental Research and Public Health, 13(1), p.6. https://doi.org/10.3390/ijerph13010006

- Wilkinson, L.C. and Wilkinson, M.D., 2023. Value for money and the commodification of higher education: front-line narratives. Teaching in higher education, 28(2), pp.406-422. https://doi.org/10.1080/13562517.2020.181922
- 59. Woods, C.S., 2019. Reading, writing, and English course pathways when developmental education is optional: Course enrollment and success for underprepared first-time-in-college students. Community College Journal of Research and Practice, 43(1), pp.5-25. https://doi.org/10.1080/10668926.2017.139114 4
- 60. Wohlers, C. and Hertel, G., 2018. Longitudinal effects of activity-based flexible office design on teamwork. Frontiers in Psychology, 9, p.2016.

https://doi.org/10.3389/fpsyg.2018.02016

- Zakariasen, K.L., Zakariasen, K.A. and Lodding, D., 2002. The practice of your future: Creating a vision. The Journal of the American Dental Association, 133(2), pp.213-218. https://doi.org/10.14219/jada.archive.2002.014 6
- **62.** Zimmerman, E. and Woolf, S.H., 2014. Understanding the relationship between education and health. NAM Perspectives.

PUBLISHER DETAILS:

