

## Breast cancer and breast health awareness as an evolving health promotion concept

Andrej Plesničar<sup>1</sup>, Viljem Kovač<sup>2</sup>, Božo Kralj<sup>1</sup>

<sup>1</sup>University of Ljubljana, University College of Health Studies, Ljubljana, Slovenia

<sup>2</sup>Institute of Oncology, Ljubljana, Slovenia

---

**Background.** Breast cancer is the most frequent malignant disease in the majority of developed countries. In the last few years the introduction of mammography screening programmes has resulted in an improved survival of breast cancer patients. However, the incidence of the disease in these countries is still on the increase. Present focus on secondary breast cancer prevention activities, consisting of early detection and treatment, cannot ensure a decrease of breast cancer incidence. Improved breast health awareness could therefore represent a part of specific health promotion activities aimed at decreasing the incidence of breast cancer.

**Conclusions.** In developed countries breast cancer is a significant health care issue. Secondary breast cancer prevention activities should therefore be complemented by specific health promotion activities in order to reduce its incidence in the future. Primary breast cancer prevention would include health promotion activities aimed at enhancement of the individual as well as collective breast health awareness. Properly enlightened members of the influential population groups could attain appropriate changes in the fields of legislation, taxation, customs and commercial regulations that would enable women to control their own breast health.

*Key words:* breast neoplasms - prevention and control; health promotion

---

### Introduction

Breast cancer is the most prevalent cancerous disease in women in the majority of developed countries. The incidence of breast cancer in most of these countries is still on the increase. However, the current increase of newly discovered cases is partly attributable to the introduction of efficient mammography screening tests. This also brought about an improvement in survival of the patients, measured with the length of survival after the discovery of breast cancer, and with an in-

Received 15 January 2004

Accepted 2 February 2004

Correspondence to: Andrej Plesničar, MD, MSc, University of Ljubljana, University College of Health Studies, Poljanska cesta 26a, SI 1000 Ljubljana, Slovenia; Phone: +386 1 300 11 67; Fax: +386 1 300 11 19; E-mail: andrej.plesnicar@vsz.uni-lj.si

crease in the five-year survival rate.<sup>1,2</sup> Also in Slovenia breast cancer is major cancerous disease in women. According to the Cancer Registry of Slovenia the incidence of the disease is still on the increase; in the year 2000 there were 932 newly discovered cases in a two million population.<sup>3</sup>

Present health care activities with mammography screening tests are primarily focused on early breast cancer detection and treatment. These tests enable the discovery of the disease in the early stages of its clinical development, hence improving the chances for longer survival of breast cancer patients.<sup>4</sup> The truth is that the disease is usually relatively advanced when it is detected as a perceivable change in a mammography image or as a clinically ascertained, locally advanced or metastatically expanded tumorous formation.<sup>2,4</sup> In Slovenia, as in most developed countries, the greatest emphasis is put on the already mentioned secondary breast cancer prevention activities.

The methods of primary prevention are rarely or hardly ever mentioned, especially via health promotion activities. These activities could no doubt include initiatives for enactment of legislation that would create circumstances where choices for avoiding the risk factors leading to breast cancer were offered and made easily available to women. At least at the beginning we would try to get some of the influential population groups in the Republic of Slovenia better acquainted with breast cancer characteristics and with the role that the members of those groups could play in stopping the increase of the disease and later, hopefully, in its decrease.

#### **Present focus on secondary breast cancer prevention activities**

For the last few years experts from different fields have been quite active in spreading information on breast changes that women

should be attentive to. Above all, the importance of early detection and treatment of already existent breast cancer has been emphasised.<sup>2,4</sup> In doing this, professionals encounter women's fear of breast cancer, various myths and anxieties. They learn about different levels of their knowledge and understanding of cancerous alterations of the breast, as well as about their different opinions of benefits of being included in mammography screening test programmes.<sup>2,4</sup> In most women of all ages, breast cancer brings about fear, confusion and concern. When they visit a specialist those feelings are intensified by possible breast pain, asymmetry of the breasts, discharge, lumps or thickenings in the breasts, as well as positive family history.<sup>1,5</sup> Indirectly, breast health concern in women is quite well expressed, however, a deeper knowledge of healthy breast characteristics or breast health awareness can most often not be found. As a rule it is limited only to the absence of tumorous changes in the breasts.

In some countries certain measures have been adopted more than ten years ago in order to reduce the number of deaths caused by breast cancer. With methods of early detection the breast cancer mortality rate was supposed to drop to less than 25% by the year 2000. Therefore, numerous activities were aimed at increasing the number of women included in the mammography screening test programmes. In certain age groups with high risk for developing breast cancer the inclusion rate was expected to increase at least to 70%. In some places and regions of certain countries this inclusion rate was actually achieved, above all by dissemination of specific information about mammography screening tests.<sup>2, 5-8</sup>

In this context information about the benefits of being included in mammography screening tests was an integral part of specific health promotion activities. Traditional information methods aimed at an increase of

the inclusion rates comprised of information brochures and posters, newspaper, radio and sometimes television advertising, meetings with experts in local communities and periodical visits to the local centres for early breast cancer detection with the introduction of a mammography apparatus. Also, specific information and education programmes on this subject have been introduced for primary health care professionals. Women with first-hand breast cancer experience very often participated in those activities by writing newspaper articles and giving interviews in the media, and sometimes even their partners joined in with their support.<sup>1,5,8</sup> However, these activities are chiefly aimed at the increase of inclusion rates to mammography screening test programmes and as such their main aspect is emphasis on the secondary prevention that is focused on detecting and treating the already existing disease. Mostly they anticipate a change of attitude of a certain part of the health care system and also changes of women's attitude.<sup>1,2,5-8</sup> Despite an increase of the inclusion rate in mammography screening test programmes, the role of women in this process remains limited and passive.

New initiatives and activities would not be limited only to women in certain age groups, but would include women of all ages as well as everybody else. They would be aimed at overreaching the existing cultural and social differences among women.<sup>5</sup> Such initiatives and activities would encompass a wider, more holistic and, maybe some time in the future, more successful approach to the breast cancer problem. Apart from disseminating and adapting information on breast cancer in healthy women, we would like to put special emphasis on breast health awareness.<sup>2,5,9-12</sup> Lower average clinical stages in patients with subsequently cytologically confirmed breast cancer and longer survival can be achieved with high inclusion rates into the mammography programmes.<sup>1,2</sup> However, the inci-

dence of breast cancer itself can not be reduced solely in this way.

### **Health promotion, individual and collective breast health awareness and breast cancer incidence reduction**

Long-term changes in the community in response to the decreased incidence of breast cancer (as well as some other cancers) could possibly be achieved by applying intersectional and multidisciplinary approaches.<sup>4,5,13</sup> Primary prevention activities, first of all health promotion activities with quite specific aims (e.g. the already mentioned breast cancer incidence reduction) would have to be implemented on the individual as well as on the community or collective level with the participation of the interested public and the adequately educated experts. The sole involvement of doctors and other health care professionals would most probably not suffice.<sup>4,5</sup> On the individual level, breast health awareness means accepting health responsibilities to greater extent by being able to recognize normal appearance and structure of breasts during different cycle periods and with regard to age, and by being able to recognize undue changes and inform the physician immediately.<sup>14</sup> It could therefore probably also be enhanced by learning how to choose healthy nutrition, a healthy lifestyle and by realisation of biological potentials, as well as by getting to know the structure and composition of healthy breasts with regular self-examination. On the community level (local, regional and state institutions), breast health awareness could also be explained as arising from the underlying collective breast health awareness; initiatives would have to be instigated that would stimulate groups of influential individuals to actively participate in the implementation of adequate changes of legislation, taxation, customs and commercial regulations, enabling every woman to have at

least partial control over her own health.<sup>13</sup> Breast health awareness would therefore not be limited only to individual women but would become a collective and community prospect, thus gaining a wider social dimension.

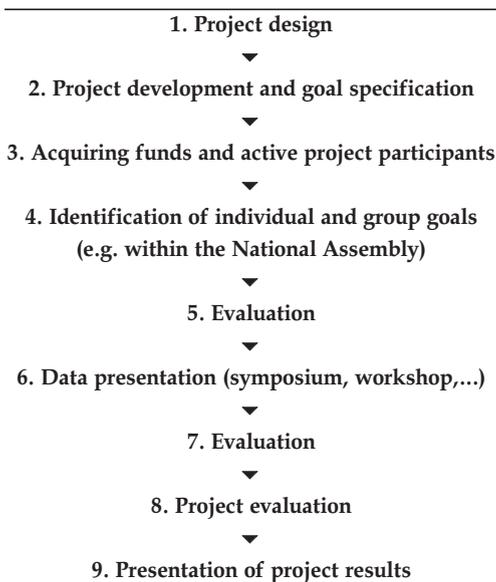
Planning of the integral initiatives in the field of health promotion, including the achievement of greater collective breast health awareness, can be taken up only on the basis of reliable data. Although data on women's views and perceptions of breast health are not available in Slovenia, regular yearly reports of the Cancer Registry of Slovenia render possible a notion the influence of life-style changes have on the incidence of breast cancer and other cancers in the second half of the 20<sup>th</sup> century in Slovenia.<sup>3-5</sup> The overall strategy for achieving the goal (breast cancer incidence reduction) could therefore include smaller, and temporarily, only hypothetical projects with a common basic outline (Figure 1). In the case of breast cancer, a decreased exposure to

some of the risk factors connected to the development of this cancerous disease, would be attained with time (Table 1).<sup>1,2</sup> Some of these factors could be influenced only indirectly with the hope that after a longer period of time breast cancer incidence would finally decrease. A more direct influence could be exerted by banning cancerous agents in food, at the work place and in the living environment. The specific importance of adequate health education could also be defined.

In the beginning, planning of integral initiatives aimed at achieving greater collective breast health awareness would be focused on different influential and other population groups: perhaps even the members of the National Assembly of the Republic of Slovenia. Specific health promotion activities would include projects that would introduce breast cancer risk factors, breast cancer epidemiology in Slovenia and basic information on carcinogenesis at least to some members of these groups. The beginning of any such hypothetical projects for improvement of collective breast health awareness with the help of influential population groups would definitely be marked by endeavours to identify the interested individuals in those groups. Later they could be joined by the other members of these groups. However, in the beginning, they could represent important parts of alliances or coalitions for achieving the strategic goals. Different professionals from different educational areas, members of government, as well as non-government organisations and volunteers could work together.<sup>5</sup>

#### **Execution of a hypothetical project for improvement of collective breast health awareness within an influential group**

The elected members of the legislative bodies are definitely one of the most powerful groups in society. They should serve as an example for illustrating the form and anticipat-



**Figure 1.** Outline of a hypothetical health promotion project (possible reduction of exposure to breast cancer risk factors).

ed development of health promotion projects, with a long-term goal of reducing the incidence of breast cancer. In the Republic of Slovenia there are 90 members of the National Assembly; many of them are also members of various committees, councils and other bodies.<sup>15</sup> The powers of the National Assembly enable their members to pass laws and executive regulations that could help women to make healthy choices towards an active breast cancer prevention role. Assistance for the realisation of such projects should be sought from women members of the Assembly, deputies that are doctors and other medical professionals, and probably amongst those members of the Assembly with women relatives who have developed breast cancer. These people alone could represent a particularly influential group within the National Assembly and the project could be carried through. In favourable conditions it could be later repeated with the participation of all the members of the National Assembly (or of any other influential group). Interested groups and individuals could probably also be found among volunteers and oth-

er participants of such a pilot project, and participation of women who recovered from breast cancer would also be invaluable.

In the initial part of health promotion strategic activities, focused on decreasing the exposure to breast cancer risk factors, a smaller multiphase project would be used to gather information about the views of specific groups (or all members) of the National Assembly of the Republic of Slovenia (Figure 1). According to the results, we would later try to introduce significant characteristics of this type of cancer and to discuss with Assembly members to what extent they would be willing to participate in specific health promotion activities with the final goal of decreasing the breast cancer incidence.

Already in the conceptional phase of the project pertinent references to the subject of »breast cancer and health promotion« would be found in professional publications. Alliance and/or coalition of the interested participants would be identified (Table 2), and at the end of this phase, the leadership of the project would be determined. During the designing phase of the project, attainable and

**Table 1.** Breast cancer risk factors

---

Early menarche, late menopause
Nulliparity, age at first birth, number of born children
Excessive body weight
Treatment with estrogens
Excessive alcohol consumption and high energy nutrients intake
Benign epithelial proliferative lesions
Family history of breast cancer
Genetic mutations (BRCA1, BRCA2, TP53)

---

**Table 2.** The expected participants of a hypothetical health promotion project for the reduction of exposure to breast cancer risk factors

---

Interested members of influential groups (e.g. members of the National Assembly, ...)
Ministries
Epidemiology, carcinogenesis and breast cancer experts
Clinical specialists (doctors, nurses, ...)
Non-government organisations (Cancer Society of Slovenia, »Europa Donna« Society, ...)
Volunteers

---

realistic goals would be set and suitable sponsors found. The contents, the structure and the methodology of the project would be discussed with the project participants, and, if possible, the interested individuals and specifically interested groups among the National Assembly members would be identified. Qualitative and quantitative data on how well the National Assembly members are acquainted with this particular health promotion project and how willing they are to participate in it would be gathered via specially prepared questionnaires. The relevant information about this topic would be presented in a form of a symposium, a workshop (brainstorming) or in another manner of conveying information, and it would be followed by handing out evaluation questionnaires. Processing of the gathered information and the following discussion would reveal whether the continuation of the project is viable. This discussion would also cover the participants' perception of breast health and an exchange of possible experiences with breast cancer within their families. Experts would help clarify any dilemmas that might occur, and concrete health promotion activities with the goal of reducing the incidence of breast cancer in the future would also be discussed. Reports on the evaluation of the project results would be presented to the participants, sponsors and to the National Assembly members, and in various other forms possibly also to the professional and lay public.

One can only guess at the expected results of the project. Nevertheless, it could be put to good use as a means of spreading information about breast cancer among the members of the group that crucially influences the life of the population. Data on the attitude of this group towards an important health issue and at least some reflections about the chosen method of presenting information on breast cancer would also be gathered.

## Discussion

In developed countries worldwide and also in Slovenia, breast cancer represents an important public health problem together with other cancerous diseases.<sup>2,4,5,16-18</sup> In the last decades, introduction of and constant perfecting of different treatment methods with surgical procedures, radiotherapy, chemotherapy and supportive treatment have markedly improved survival rate and quality of life of breast cancer patients in these countries.<sup>2,19,20</sup> However, in the majority of developed countries, including Slovenia, the incidence of breast cancer is still on the increase.<sup>2,3,13,18,21,22</sup> Improved breast health awareness for the individual and for the collective level could therefore represent a part of specific health promotion activities with the goal of decreasing the incidence of this disease.

Health promotion activities aimed at greater individual and collective breast health awareness can only be a supplement and by no means a substitute for the secondary breast cancer prevention activities. Early detection and timely treatment have contributed to longer survival of breast cancer patients.<sup>2,23-32</sup> The use of these secondary prevention methods instigated deliberations about breast health and breast health awareness.<sup>5,10,13</sup> Certain activities, that could be conditionally viewed as health promotion activities, are aimed at increasing the inclusion of women from specifically defined groups (certain age groups with some specific exceptions at younger age) into mammography screening test programmes.<sup>2,5,23-32</sup> One should bear in mind that the carcinogenesis of breast cancer is a phasic and continuous process at all ages, that it takes several years for breast cancer to develop, and that it takes quite some time for a tumorous formation inside the breast to become clinically observable.<sup>2,33,34</sup> New attitude towards breast health that would focus not only on the absence of

tumorous formations in the breasts could in time probably result in the decreased exposure to breast cancer risk factors that directly or indirectly intensify the processes of carcinogenesis in the breast tissue. It would be an attempt at introducing subtle and hardly measurable changes in women's and the general population's way of daily living that could in longer time frame bring about the decrease of breast cancer incidence.

Individual and collective breast health awareness levels are co-dependent up to a point, and improvement of one could probably trigger a positive change in the other. Goal oriented activities of influential groups of population could probably represent also an incentive for the improvement of breast health awareness on the collective level. The most influential of all groups in every democratic country is undoubtedly the highest legislative body. In the Republic of Slovenia this is the National Assembly with its 90 members. On different levels health promotion activities usually include also politics, therefore the idea of a project that would inform the members of the influential groups (the most influential group being the National Assembly) about the meaning and the burden of breast cancer in Slovenia and also about breast health awareness, should not come as a surprise.<sup>13,35</sup>

Since in Slovenia breast cancer is an important public health issue, the inclusion of influential population groups into health promotion activities would be reasonable and acceptable. Just like the whole community and its every individual, the members of these groups should be adequately educated and informed about this problem. Specific health promotion activities in connection with breast cancer within the framework of well considered public health policy would thus come near to the sphere of activities, recommended in the Ottawa Charter.<sup>4,13,35</sup> The reduction of breast cancer incidence as a possible outcome of these activities would signifi-

cantly influence the health of a large part of women in the community and consequently the health of the entire community.

## References

1. Hossfeld DK, Sherman CD, Love RR, Bosch FX, editors. *International Union Against Cancer: Manual of clinical oncology*. 5<sup>th</sup> edition. Berlin: Springer-Verlag; 1990.
2. Bishop JF, editor. *Cancer facts: a concise oncology text*. Amsterdam: Harwood Academic Publishers; 1999.
3. Register raka za Slovenijo. *Incidenca raka v Sloveniji: 2000. Poročilo RR št. 42*. Ljubljana: Onkološki Inštitut; 2003.
4. Jekel JF, Elmore JG, Katz DL. *Epidemiology, Biostatistics and Preventive Medicine*. Philadelphia: W. B. Saunders Company; 1996.
5. Mitchell A. Breast health awareness. In: Perkins ER, Simnett I, Wright L, editors. *Evidence-based Health Promotion*. 4<sup>th</sup> edition. Chichester: John Wiley & Sons; 2002. p. 266-74.
6. Harris TJ, Cook DG, Shah S, Victor CR, De Wilde S, Beighton C, et al. Mammography predictors in older women. *Fam Pract* 2002; **19**: 661-4.
7. Hamilton EL, Wallis MG, Barlow J, Cullen L, Wright C. Women's view of a breast screening service. *Health Care Women Int* 2003; **24**: 40-8.
8. Edwards A, Unigwe S, Elwyn G, Hood K. Effects of communicating individual risks in screening programmes: Cochrane systematic review. *Br Med J* 2003; **327**: 703-9.
9. Anderson BO, Braun S, Lim S, Smith RA, Taplin S, Thomas DB. Global Summit Early Detection Panel. Early detection of breast cancer in countries with limited resources. *Breast J* 2003; **9(Suppl 2)**: S51-9.
10. Braun S. The history of breast cancer advocacy. *Breast J* 2003; **9(Suppl 2)**: S98-100.
11. Moore MA, Kunimoto T, Tsuda H. Cancer screening literature in the period 2000-2002: pointers to future research avenues. *Asian Pac J Cancer Prev* 2003; **4**: 57-60.
12. Zorbas HM. Breast cancer screening. *Med J Aust* 2003; **178**: 651-2.
13. Tulchinsky TH, Varavikova EA. *The New Public*

Health. An Introduction for the 21<sup>st</sup> Century. San Diego: Academic Press; 2000.

14. Austoker J. Breast self examination. *Br Med J* 2003; **326**: 1-2.
15. <http://www.dz-rs.si>
16. Oluwole SF, Ali AO, Adu A, Blane BP, Barlow B, Oropeza R. Impact of a cancer screening program on breast cancer stage at diagnosis in a medically underserved urban community. *J Am Coll Surg* 2003; **196**: 180-8.
17. Yazidi-Belkoura IE, Adriaenssens E, Vercoutter-Edouart AS, Lemoine J, Nurcombe V, Handemarck H. Proteomics of breast cancer: outcomes and prospects. *Technol Cancer Res Treat* 2002; **1**: 287-96.
18. Weir HK, Thun MJ, Hankey BF, Ries LA, Howe HL, Wingo PA, et al. Annual report to the nation on the status of cancer, 1975-2000, featuring the uses of surveillance data for cancer prevention and control. *J Natl Cancer Inst* 2003; **95**: 1276-99.
19. Dignam JJ, Wieand K, Johnson KA, Fisher B, Xu L, Mamounas EP. Obesity, tamoxifen use, and outcomes in women with estrogen receptor-positive early-stage breast cancer. *J Natl Cancer Inst* 2003; **95**: 1467-76.
20. Buchholtz TA, Hunt KK, Whitman GJ, Sahin AA, Hortobagyi GN. Neoadjuvant chemotherapy for breast carcinoma: multidisciplinary considerations of benefits and risks. *Cancer* 2003; **98**: 1150-60.
21. Quinn MJ. Cancer trends in the United States - a view from Europe. *J Natl Cancer Inst* 2003; **95**: 1258-61.
22. Botha JL, Bray F, Sankila R, Parkin DM. Breast cancer incidence and mortality in 16 European countries. *Eur J Cancer* 2003; **39**: 1718-29.
23. Dean PB. The rationale and current controversies of mammographic screening for breast cancer. *Scand J Surg* 2002; **91**: 288-92.
24. de Koning HJ. Mammographic screening: evidence from randomised controlled trials. *Ann Oncol* 2003; **14**: 1185-9.
25. Walter SD. Mammographic screening: case-control studies. *Ann Oncol* 2003; **14**: 1190-2.
26. Hackshaw A. EUSOMA review of mammography screening. *Ann Oncol* 2003; **14**: 1193-5.
27. Duffy SW, Tabar L, Vitak B, Yen MF, Warwick J, Smith RA, Chen HH. The Swedish Two-County Trial of mammographic screening: cluster randomisation and end point evaluation. *Ann Oncol* 2003; **14**: 1196-8.
28. Lee SJ, Zelen M. Modelling the early detection of breast cancer. *Ann Oncol* 2003; **14**: 1199-202.
29. Verbeek AL, Broeders MJ; National Evaluation Team for Breast Cancer Screening; National Expert and Training Centre for Breast Cancer Screening. Evaluation of the Netherlands breast cancer screening programme. *Ann Oncol* 2003; **14**: 1203-5.
30. Giles GG, Amos A. Evaluation of the organised mammographic breast screening programme in Australia. *Ann Oncol* 2003; **14**: 1209-11.
31. Goldhirsch A, Colleoni M, Domenighetti G, Gelber RD. Systemic treatments for women with breast cancer: outcome with relation to screening for the disease. *Ann Oncol* 2003; **14**: 1212-4.
32. Sasieni P. Evaluation of the UK breast screening programmes. *Ann Oncol* 2003; **14**: 1206-8.
33. Fidler IJ. Molecular biology of cancer: invasion and metastasis. In: De Vitta VT, Hellman S, Rosenberg SA, editors. *Principles and practice of oncology*. 5<sup>th</sup> edition. Philadelphia: Lippincott-Raven Publishers; 1997. p. 135-52.
34. King RJB. *Cancer biology*. Harlow, England: Addison Wesley Longman Limited; 1996.
35. Vetter N, Matthews I. *Epidemiology and Public Health Medicine*. Edinburgh: Churchill Livingstone; 1999.