



Working together
www.rcis.ro

Revista de cercetare și intervenție socială

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)

Selected by coverage in Social Sciences Citation Index, ISI databases

BIOPSYCHOSOCIAL IMPLICATIONS RELATED TO THE BREAST CANCER IN YOUNG WOMEN

Corneliu DIACONU, Laura MAXIM, Daniel TIMOFTE, Roxana Maria LIVADARIU

Revista de cercetare și intervenție socială, 2014, vol. 46, pp. 152-161

The online version of this article can be found at:

www.rcis.ro, www.doaj.org and www.scopus.com

Published by:

Expert Projects Publishing House



On behalf of:

„Alexandru Ioan Cuza” University,

Department of Sociology and Social Work

and

Holt Romania Foundation

REVISTA DE CERCETARE SI INTERVENTIE SOCIALA

is indexed by ISI Thomson Reuters - Social Sciences Citation Index

(Sociology and Social Work Domains)



Biopsychosocial Implications Related to the Breast Cancer in Young Women

Corneliu DIACONU¹, Laura MAXIM², Daniel TIMOFTE³,
Roxana Maria LIVADARIU⁴

Abstract

Breast cancer is the most common type of cancer that affects women. Its aggressiveness depends mainly on the patient's age, on the tumor size and on the axillary lymph nodes status. The prognosis is the most unfavourable in the case of women under 35 years old, because they develop loco-regional and distant recurrence of the disease earlier than the older patients. Moreover, they usually are diagnosed in advanced stages of the disease. Considering all these aspects, the purpose of our study is to identify and analyse the biological, psychological and socio-economic implications of breast cancer, in the case of the Romanian young women. In order to reach this objective, we have conducted an empirical research on 42 female patients with breast cancer, aged between 26 and 45 years, hospitalized and operated by the same surgical team, between 2010 and 2013. Our results demonstrate that the early detection of breast cancer has multiple benefits, not only from the medical point of view, but also from the psychological and socio-economic perspectives. We noticed that young women diagnosed with breast cancer in early stages have a reduced scale of surgery, which involves a shorter period of hospitalization and a lower cost of treatment, a better life prognosis and a satisfactory psychological comfort, resulting in rapid social and familial reintegration.

Keywords: breast cancer, young women, biological consequences, psychological impact, socio-economic implications.

¹ "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, University Street, no.16 700115 Iasi, ROMANIA. E-mail: cdiaconu_09@yahoo.com

² "Alexandru Ioan Cuza" University of Iasi, Faculty of Economics and Business Administration, Blv. Carol I, no. 22, Iasi, ROMANIA. E-mail: dlaura_es@yahoo.com

³ "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, University Street, no.16 700115 Iasi, ROMANIA. E-mail: dantimofte@yahoo.com (corresponding author)

⁴ "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, University Street, no.16 700115 Iasi, ROMANIA. E-mail: roxanalivadariu@yahoo.com

Introduction

In all the countries, including Romania, the most common type of cancer among women is breast cancer. The statistics show that, in the case of European women, breast cancer is the leading type of cancer in terms of incidence and the one of the main causes of cancer death (Ferlay *et al.*, 2013). In 2012, the incidence of breast cancer in Europe has reached a record level of 463.8 women out of 100,000, while the mortality was 131.2 females out of 100,000 (Ferlay *et al.*, 2013). In Western Europe, breast cancer incidence has reached more than 90 new cases per 100000 women annually and the mortality is 38.4 per 100000 women, per year (World Health Organization, 2013). According to a study conducted on the Central and South-Eastern European countries, Romania has the highest incidence of breast cancer in women among all these states (Vrdoljak *et al.*, 2011). In Romania, in 2006 the incidence of breast cancer was 50.56 new cases per 100000 women and the mortality was 23.88 per 100000 women (Anghel *et al.*, 2009).

Biological aggressiveness of the tumor is dependent on many factors, one of the most important being the patient's age. The studies show a better prognosis in women over 45 years compared to women less than 40 years of age, who have worse prognosis. In very young women, under 35 years, the prognosis is the most unfavorable, because they tend to develop loco-regional and distant recurrence of the disease earlier than the older patients (Park, Kim, Kim, Yang and Lee, 2002; Aebi *et al.*, 2000). Another important factor in disease's recurrence and overall survival is the tumor size. However, as important as the tumor size there is the axillary lymph nodes status. The tumors larger than 2 centimeters give an intermediate or high risk, even in the absence of other prognostic risk factors (Goldrisc *et al.*, 2005).

Young women are diagnosed mostly in advanced stages of breast carcinoma. The detection of the disease in early stages gives the opportunity to the patient of a breast conserving surgery associated with a reduced length of hospital stay and a minimal adjuvant therapy associated with a periodical outpatient follow-up. This patient will have a better psychological comfort, enjoying a social and family rapid insertion. The detection of this disease in advanced stages requires amputee surgical interventions, with mammary reconstructions, prolonged neoadjuvant and adjuvant therapy on a patient with poor life prognosis and increasing disability factors such as developing lymphedema. This aggressive and expensive treatment will not permit the patient to work for a long time and it may even force her to retire. This would lead to a decrease in the patient's household income. Related to this aspects, a study conducted on 287 women with breast cancer shows that all the direct (health service expenditures) and indirect costs (lost income) are 80% greater in the case of younger women (less than 50 years old) compared to the older ones (Gordon *et al.*, 2007). We can see that the detection of the breast cancer

in advanced stages generates not only a greater physical distress, accompanied by a poor life prognosis, but also an increased psychological and economic burden. In the case of a young woman, these issues will have an important negative impact on the relationship with her family and the society. Considering all these aspects, the purpose of our study is to determine the biological, psychological and socio-economic implications of breast cancer, in the case of the Romanian young women.

Material and Methods

From 304 women with breast cancer who were hospitalized and operated by the same surgical team, between 2010 and 2013, we have selected and included in our sample 42 patients aged between 26 and 45 years. From this lot of young women, 6 had carcinoma in situ (intraductal in situ carcinoma and comedo-carcinoma), 11 had intraductal papillomas with areas of noninvasive carcinoma, 7 had papillomas with in situ carcinoma within a cystic lesion and 18 patients had invasive carcinomas. The patients diagnosed with noninvasive carcinomas were treated conservatively - quadrantectomy and microductectomy, with 3 to 5 days of hospitalization and simple evolution. The hospitalization expenses in those cases amounted 275 Euro per patient. For patients diagnosed with invasive breast neoplasm we performed radical mastectomy with axillary lymph nodes dissection and the hospitalization was 7 to 8 days long. The patients requiring extended resections to the major and minor pectoralis muscle (6 cases) had longer hospitalization, of 9 to 10 days. The remaining skin defect coverage was necessary in 4 cases; the average duration of surgery was increased by 60 minutes and the period of hospitalization ranged between 12 and 16 days with afferent hospitalization costs of 660 to 880 Euro. The patients who presented bleeding or infected locally advanced breast tumors received curative or prophylactic administration of antibiotics along with surgical treatment. Every patient with invasive breast neoplasm that required axillary lymph nodes dissection had to follow the prophylactic treatment of upper limb lymphedema, consisting in early administration of fractionated heparin and micronized flavonoids (Detralex®), starting with the operation day for a period of 14 to 21 days, in elastic compression of the chest and arm for 14 postoperative days and also in physiotherapeutic measures.

Results

The immediate postoperative evolution was favorable in most of the patients, but persistent lymph drainages and hypoproteinemia was noted in 12 patients with locally advanced breast cancer (that required infusion of amino acids); 7

patients, who also had chronic liver disease, presented moderate persistent bleeding that required blood transfusions or iron-based medication.

The adjuvant treatment and the prognosis of the disease were established on histopathological and immunohistochemical examinations, which showed the tumor aggressiveness. Thus, from the 24 patients with small tumors, 17 had negative lymph nodes and only a single histopatologic type of carcinoma. The patients presenting T2 to T4 tumors had positive lymph nodes and tumoral associations of multiple histopatologic types of carcinoma. 3 of these patients, less than 45 years, were diagnosed with breast carcinoma shortly after term pregnancy and another young patient was hospitalized with important axillary lymphadenopathy, which occurred 3 months after a breast silicone implant. The relationship between tumor size and other aggression factors in this lot of 42 women under 45 years of age was found as follows: 14 of the patients with T3 and T4 tumors had tumor emboli in blood vessels and, from these, 8 had skin permeation nodules. We found elevated values of Ki-67 in 20 of these cases, over-expressed Her-2neu in 11 patients and 6 patients were triple negative (negative ER and PR, negative Her-2neu).

The adjuvant oncologic therapy was not necessary in case of patients with early breast cancer, but it was mandatory for all the patients diagnosed with invasive breast cancer. This therapy, consisting in chemotherapy, radiotherapy and therapy based on monoclonal antibodies, was adapted according to biologic and tumoral markers of aggressiveness and to the biologic status of the patient. The cost of the oncologic treatment amounted 335 Euros for 6 cures of chemotherapy. The cost of the treatment with monoclonal antibodies was 2222 Euros per month, for one year; for those of the patients who needed treatment with estrogenic inhibitors the cost was 88.8 Euros per month, for 5 years.

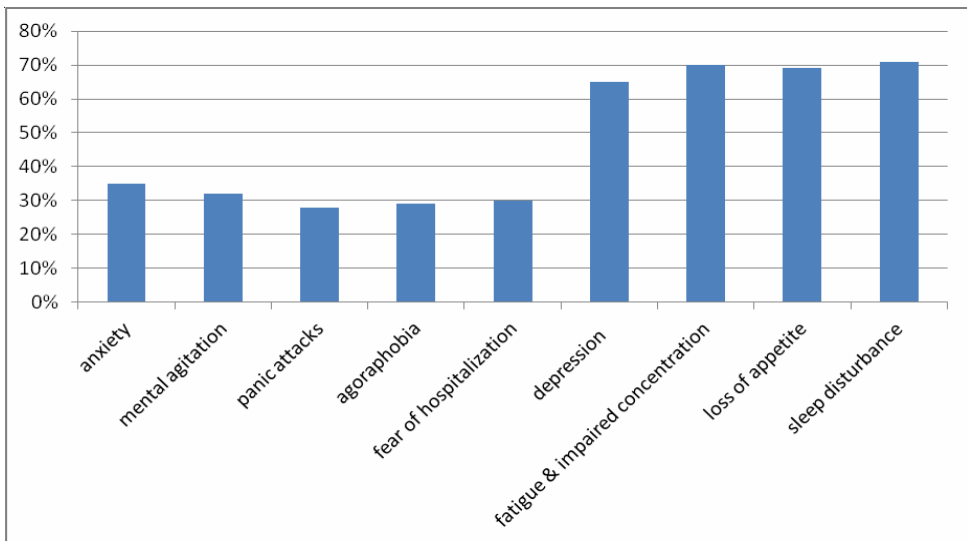


Figure 1. *Psychological disorders noticed at our patients during hospitalization*

During hospitalization, around one third of our patients developed anxiety, mental agitation, panic attacks, agoraphobia and fear of hospitalization. About two thirds of them showed signs of depression, fatigue, sleep disturbance, impaired concentration and loss of appetite (see Figure 1).

These results are not surprising considering the fact that our sample was formed only by women and, according to Ernstmann *et al.* (2009), women are more emotionally affected or more aware of their distress, compared to men.

Discussions

As it results from our study, young women diagnosed with early breast cancer benefited from reduced scale of surgery, short hospitalization, reduced cost of treatment. Moreover, in these cases an adjuvant oncological therapy was unnecessary. Most of the women with early breast cancer from our sample presented no serious psychological disorder during hospitalization. We have also noticed that, even after leaving the hospital, they had a satisfactory psychological comfort, resulting in rapid social and familial reintegration and a quick resumption of daily activities, including work. Considering these results, we may underline the fact that the detection of breast cancer in early stages has significant benefits for the patients, from medical, psychological and socio-economic points of view. Unfortunately, the invasive breast cancer in young women is commonly diagnosed in advanced stages (from our sample, almost half of the women were diagnosed in advanced stages). On one hand, it is known that at young patients the structure of mammary gland makes it difficult to diagnose breast tumors in early stages. On the other hand, in our country there are no screening programs and no information media campaign concerning the importance of auto-palpation in breast disease diagnosis and of periodic medical examinations in patients at risk of developing a breast cancer. It is unacceptable that a young woman does not receive a clinical breast examination before getting pregnant as well as it is unacceptable for a patient to have breast silicone implant without a previous clinical and imagistic control of the mammary gland and axillary lymph nodes, as it happened in the case of 4 of our patients.

One of the major concerns of the team that treated the 42 women from our sample was to inform the patients about the diagnosis of breast cancer and about the therapeutic protocol to be followed in a way that does not have a brutal impact on the psychic of the patient. During years, working with patients indicated that counseling before surgical intervention is particularly useful because it diminishes the phobia of losing a breast and acquiring an important disability. Moreover, there are studies showing that the clinician's communication skills can have a lasting effect on the mental state of the patient with breast cancer related to the disease and treatment (Fallowfield, 1990) and they may even shorten the

hospitalization period (Harmer, 2006). The things that clinicians should discuss with patients during the preoperative sessions should include the body image, the shape and size of scar, treatment options, the fear of anesthetic and the possible side-effects of surgery, such as the arm movement (Harmen, 2006). Therefore, we can say that the medical intervention is not limited to the therapeutic aspect, but it also involves surveillance and care provided through education and communication with the patient (Tobolcea, 2010). Actually, there is a dynamic relationship between the clinical and the supportive care, which requires an interdisciplinary approach in assessing and meeting the needs of the patients with breast cancer.

Such an involvement of the clinicians is beneficial both for the patient and for the doctor, avoiding potential claims and forensic issues. Therefore, we believe that the trainings able to develop the communications' skills are very useful for the oncological surgeon. Once the patients are informed about the diagnosis, most of them develop a series of intense subjective reactions ranging from anxiety and guilt to anger and despair. Many studies (McDaniel, Musselman, Porter, Reed and Nemerhoff, 1995) show that 25-30% of the patients treated for breast carcinoma have significant levels of anxiety and depression, sometimes accompanied by persistent sexual disorders. The level of this psychological distress varies between individuals, and in the same individual, during the course of diagnosis and treatment (Hewitt, Herdman and Holland, 2004). As it results from our study, during the hospitalization period, 35% of our patients confronted with anxiety and 65% of them with depression. The value of this last percentage is relatively high because almost half of the women from our sample were diagnosed with invasive breast cancer, requiring adjuvant oncologic therapy. The advances in treatment methods are usually related to new problems and side effects with which patients have to cope (Holland, 1998). For example, it was noticed a greater sexual dysfunction after mastectomy than after breast conserving surgery (Beckman, Johansen, Richardt and Blickert-Toft, 1983). In the case of our patients, those women who required mastectomy were advised to have a breast reconstruction after the surgical intervention.

It was noticed that the conservative surgery of the breast reduces the psychological morbidity. There are studies showing that patients conservatively treated have an increased incidence of anxiety, but a decreased incidence of depression - related to the idea of body integrity maintenance, comparing to the patients receiving radical mastectomy (Deadman, Dewey, Owens, Leinster and Slade, 1989).

The psychological implications of the breast cancer on our patients during hospitalization are underlined in figure no. 1, presented in the results part. However, it has to be mentioned that in the case of those women who required radical surgery of the breast, this intervention had a wider psychological rebound after leaving hospital. Therefore, postoperative psychological care of the patient and

her partner has an important role. It was demonstrated that the environment in which a person lives has a great impact on the persistence of the anxiety symptoms (Popa, Nirestean, Ile, Ardelean, Moica and Buicu, 2013). Moreover, the theory of social capital underlines the importance of the family, the peer-group and of the community in building-up the young person's trusts in her future (Muntean, Roth and Iovu, 2010). A study conducted by Bigatti, Steiner, Makinabakan, Hernandez, Johnston, and Storniolo (2012) shows that the life partner has a great impact on the mental state of the women with breast cancer. They have shown that when the partner had a negative attitude, the patient suffered from the psychological distress.

It was demonstrated that the breast reconstruction in the same surgical sequence with the mastectomy reduces not only the psychological impact on the patient, but also the hospitalization duration and the costs. Various studies have shown that most of the patients requiring radical mastectomy benefit of immediate breast reconstruction. In the case of our patients, the breast reconstruction was not in the same sequence with the mastectomy; the women for whom the breast reconstruction was proper were advised to do it after the surgery. However, it was noticed that the women who require radiotherapy or chemotherapy may consider their disease more serious and life-threatening than those who do not need these treatments, fact that may influence a woman's choice for or against an immediate breast reconstruction (Meretoja and Suominen, 2005). Absolute contraindications for immediate breast reconstruction are related to the existence of major heart, lung and liver comorbidities. The relative contraindications for this extensive surgery are: older age, need of postoperative radiotherapy, diabetes, vascular and collagen diseases (that give a local ischemia of the expanded tissues). Even so, there are studies showing that immediate reconstruction of the breast has a low impact on reducing the psychological morbidities (Dean, Chetty and Forrest, 1983; Wellisch, Schain, Noone and Little, 1985).

The incidence of upper limb lymphedema following surgical treatment of the breast cancer has an increased variability from one study to another, depending on different criteria, methodology in measuring the degree of lymphedema and the duration of the postoperative follow-up of the patient. A comprehensive retrospective study bringing together data of 47 studies conducted on 7779 patients shows a 15.5% incidence of upper limb lymphedema following surgical treatment of the breast cancer (Cormier, Askew, Mungovan, Xing, Ross and Armer, 2010). Most of the studies show that the major risk factor is the presence of the locally advanced tumor (Diaconu, Livadariu and Dogaru, 2012). The occurrence of lymphedema has multiple consequences on functional status of the upper limb and breast (in case of conservative surgery), on quality of life, reintegration in professional activities and on the relationship with the family members. It also has financial consequences, caused by long-term medication and combination therapy that are often expensive. Ridner (2005) observed that patients with

lymphedema have shown a loss of body confidence, decreased physical activity, fatigue and increased distress. Moreover, the occurrence of lymphedema can lead to obsessive-phobic tendencies caused by fear of disease recurrence. The mental depression will increase due to digestive disorders and other side effects. The endocrine therapy, indirectly responsible for sexual changes, will have the same effect. Patient's awareness of metastases occurrence will lead to introversion due to growing fear of dying. Consequently, these cases require a higher spiritual and psychological support. Once again, it can be noticed the important role played by the oncological clinicians in educating women about the risks of lymphedema associated with breast cancer and its treatment. It was demonstrated that teaching patients how to reduce their risk of lymphedema, preventing its complications and offering emotional support to patients who experience lymphedema can significantly influence the life quality of the patients who had breast cancer (Singer, 2009). In the case of our sample, the lymphedema prevention was done in the same day with the surgical intervention through the administration of the flavonoid micronized, the fractionated heparin, through the massage of the upper limb and the usage of the elastic cuffs. These therapeutic measures have also continued after the patients left the hospital.

Conclusions

The incidence of the locally advanced breast cancer among young women represents almost half of the cases analyzed in this study, fact generated by the lack of the population screening programs. The radical surgery of the breast, the long-term adjuvant therapies, the interruption of the professional activity and the lack of the psychological support, even from the life partner, have a negative psychological impact especially at the young life stage. The life expectancy in the case of the patients with invasive breast cancer is much lower compared to the early breast cancer, despite all the costly adjuvant therapy. Moreover, as our results indicated, these patients are less likely to actively integrate in the socio-economic life, fact that amplifies the negative psychological impact. As it resulted from our study, in total compliance with the specialized literature, in the case of the women with locally advanced breast cancer, the cost of the followed therapies was relatively high. Moreover, most of the patients preferred the retirement, despite of their young age. Considering all these aspects, we do believe that promoting through mass-media the importance of addressing the doctor at the first signs perceived by the patient would represent one of the best solutions for early breast cancer detection.

References

- Aebi, S., Gelber, S., Castiglione-Gertsch, M., Gelber, R.D., Collins, J., Thurlimann, B. et al. (2000). Is chemotherapy alone adequate for young women with oestrogen receptor positive breast cancer? *Lancet*, 355(9218), 1869-1874.
- Anghel, R., Minea, L., Dediu, M., Bacinschi, X., Eniu, A., Eniu, D., Miron, L. & Aldea, B. (2009). Ghid de management al cancerului mamar. *Ordinul ministrului sănătății* no. 1059, Annex 9, Monitorul Oficial, part I no. 608bis.
- Beckman, J., Johansen, L., Richardt, C. & Blickert-Toft, M. (1983). Psychological reactions in younger women operated on for breast cancer. *Danish Medical Bulletin*, 30(2), 10-13.
- Bigatti, S.M., Steiner, J.L., Makinabakan, N., Hernandez, A.M., Johnston, E. and Stornio, A.M. (2012). Matched and mismatched cognitive appraisals in patients with breast cancer and their partners: implications for psychological distress. *Psycho-Oncology*, 21(11), 1229-1236.
- Cormier, J.N., Askew, R.L., Mungovan, K.S., Xing, Y., Ross, M.I. & Armer, J.M. (2010). Lymphedema beyond breast cancer: a systematic review and metaanalysis of cancer-related secondary lymphedema. *Cancer*, 116(22), 5138-5149.
- Deadman, J.M., Dewey, M.J., Owens, R.G., Leinster, S.J. & Slade, P.D. (1989). Threat and loss in the breast cancer. *Psycho-Social Medicine*, 19, 677-681.
- Dean, C., Chetty, U. & Forrest, A.P.M. (1983). Effects of immediate breast reconstruction on psychosocial morbidity after mastectomy. *Lancet*, 1, 459-462.
- Diaconu, C., Livadariu, R.M. & Dogaru, C. (2012). The risk of lymphedema after breast cancer surgical treatment. *The Medical Surgical Journal*, 116(4), 1081-1086.
- Ernstmann, N., Neumann, M., Ommen, O., Galushko, M., Wirtz, M., Voltz, R., Hallek, M. & Pfaff, H. (2009). Determinants and implications of cancer patients' psychosocial needs. *Supportive Care in Cancer*, 17(11), 1417-1423.
- Ferlay, J., Steliarova-Foucher, E., Lortet-Tieulent, J., Rosso, S., Coebergh, J.W.W., Comber, H., Forman, D. & Bray, F. (2013). Cancer incidence and mortality patterns in Europe: Estimates for 40 countries in 2012, *European Journal of Cancer*, 49, 1374-1403.
- Goldrisc, A., Glick, J.H., Gelber, R.D., Coates, A.S., Thurlimann, B. & Senn, H.J. (2005). Meeting highlights: International expert Consensus on the primary therapy of early breast cancer. *Annals of Oncology*, 16, 1569-1583.
- Gordon, L., Scuffham, P., Hayes, S. & Newman, B. (2007). Exploring the economic impact of breast cancers during the 18 months following diagnosis. *Psycho-Oncology*, 16(12), 1130-1139.
- Harmer, V. (2006). The psychological implications of breast cancer. *Practice Nurse*, 32(6), 44-49.
- Hewitt, M., Herdman, R. & Holland, J. (2004). Meeting psychosocial needs of women with breast cancer, Washington: The National Academies Press.
- Holland, J.C. (1998). Societal views of cancer and the emergence of psychooncology. In Holland, J.C. (ed.), *Psychooncology*, New York: Oxford University Press, pp. 3-15.

- McDaniel, J.S., Musselman, D.L., Porter, M.R., Reed, D.A. & Nemerhoff, C.B. (1995). Depression in patients with cancer. Diagnosis, biology, and treatment. *Archives of General Psychiatry*, 52 (2), 89–99.
- Meretoja, T. & Suominen, E. (2005). Demand for plastic surgery operations after primary breast cancer surgery. *Scandinavian Journal of Surgery*, 94(3), 211-215.
- Muntean, A., Roth, M. & Iovu, M.B. (2010). The role played by the social environment within the future's plans of youth. *Revista de Cercetare si Interventie Sociala*, 28, 7-22.
- Park, W.B., Kim, S.I., Kim, E.K., Yang, W.I. & Lee, K.S. (2002). Impact of the patient age on the outcome of primary breast carcinoma. *Journal of Surgical Oncology*, 80, 12-18.
- Popa, C.O., Nirestean, A., Ile, L., Ardelean, M., Moica, T. & Buicu, G. (2013). Community Mental Health Services - The Treatment of Anxiety and Its Effects from the Point of View of the Association of Personality Dimensions. *Revista de Cercetare si Interventie Sociala*, 43, 49-60.
- Ridner, S.H. (2005). Quality of life and a symptom cluster associated with breast cancer treatment related lymphedema. *Supportive Care in Cancer*, 13(11), 904-911.
- Singer, M. (2009). Lymphedema in Breast Cancer: Dilemmas & Challenges. *Clinical Journal of Oncology Nursing*, 13(3), 350-352.
- Tobolcea, I. (2010). For an ethics the medical and social-education assistance and intervention for persons with disabilities. *Revista de Cercetare si Interventie Sociala*, 31, 22-34.
- Vrdoljak, E., Wojtukiewicz, M.Z., Pienkowski, T., Bodoky, G., Berzinec, P., Finek, J., Todorovic, V., Borojevic, N. & Croitoru, A. (2011). Cancer epidemiology in Central and South Eastern European countries. *Croatian Medical Journal*, 52(4), 478-487.
- Wellisch, D.K., Schain, W.S., Noone, R.B. & Little, J.W. (1985). Psychosocial correlation of immediate versus delayed reconstruction of the breast. *Plastic and Reconstructive Surgery*, 76, 713-718.
- World Health Organization. (2013). Latest world cancer statistics. Press Release, no. 223, available at http://www.iarc.fr/en/media-centre/pr/2013/pdfs/pr223_E.pdf.