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Do chronological age and selected socio-demographic factors affect quality of life in females with breast cancer?

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ABSTRACT The main aim of this study is to determine whether chronological age and selected socio-demographic factors affect quality of life in females with breast cancer. The sample group consisted of 145 females between 32.0 and 84.4 years of age, after radical surgery treatment, chemotherapy, radiotherapy and undergoing hormonotherapy. The results indicate no significant differences between individuals varied by chronological age, and by place of residence. The time elapsed since the diagnosis was a significant differentiating factor in terms of the self-reported extent of positive emotions, cognitive problems and sexual functioning. Higher educated females were more inclined to social avoidance and more severely affected by fatigue – those with partners more so than single ones. The distress related to the disease and its treatment degrades the patients' quality of life so severely that other factors, such as socio-demographic, chronological age or period since diagnosis, do not play as an important role in a subjective evaluation of quality of life. One needs to be cognizant of the variety of coexisting factors, including psychological and characterological, that contribute to the quality of life evaluation.

KEY WORDS: cancer survivors, mastectomy, life satisfaction, stress coping

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In developed countries, cancers are the second most frequent cause of death behind diseases of the cardiovascular system. In Poland, they account for 26% of deaths among males and 23% of deaths among females. According to the World Health Organization [WHO 2007], each year nearly 3.2 million new cases of cancer are diagnosed throughout Europe and 1.7 million people die of it. Neoplastic diseases and

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their associated mechanisms have been the subject of continuous research focusing on four key issues: prevention, early diagnosis, treatment and care. Cancer diagnosis and treatment generate a long-lasting, stressful situation both for the diseased and their close ones [Northouse *et al.* 2005, Wimberly *et al.* 2005]. This follows from a number of overlapping factors, such as the discomfort of physical pain, fatigue, concern about appearance, concerns about recurrence and metastasis, social avoidance and family-related distress [Carver *et al.* 2006, Osoba *et al.* 2006]. However, one of the most frequently mentioned symptoms of emotional reaction is fear of death [Carver *et al.* 2000*a*, Wong-Kim *et al.* 2005]. Women confronted with cancer react emotionally, feel empty, shocked, completely broken down, and are certain that their life will end in a couple of months. They report a threat of premature death, because "Cancer is death" [Salander and Hamberg 2005: 690]. Psychologists have created the common theory that both healthy and ill people fear death because they do not know what will happen afterwards. The high levels of emotional distress caused among patients with a diagnosis of cancer is due to the fact that although breast cancer has become more treatable, women still die from this disease. Colussi *et al.* [2001] indicate that older people cope better with cancer diagnosis and treatment, because they have already started to think about own mortality.

The concept of quality of life as a component of individual health and biological condition is well-known. Dividing health status into physical and mental domains indicates the influence of the biological condition on individual psychological state. So, general well-being researches are tried and tested measures of mental and physical status, including both objective and subjective indicators of the human condition. In recent years, more emphasis has been placed on the need to improve the quality of life among patients under or after cancer treatment and the search for ways of handling the cancer-related distress [Ben-Zur *et al.* 2001]. Distress, as defined by medicine, is associated with the impact of stressors interfering with an organism's homeostasis [Grygorczuk 2008]. In the case of cancer, the stressors are found to occur at the two overlapping spheres of the physical and mental condition. They affect an individual in a multifaceted and sustained way bringing about serious cognitive, emotional and behavioral consequences. They lead to severe functional disorders which frequently require psychological and psychiatric intervention [Miniszewska and Chrystowska-Jabłońska 2002]. Therefore, treatment of malignant cancers should not only aim to control the growth of neoplastic cells in order to prolong the patient's life, but also to ensure the patient's well-being [Piątek *et al.* 2004].

The concept of Health Related Quality of Life (HRQL) was first introduced by Schipper [1990] who defined it as a resultant of four domains of life: physical condition, mental condition, socio-economic status and locomotion efficiency. Interesting and useful for the present work is the quality of life model in patients with cancers, including females with breast cancer, presented in 1996 by Ferrel and her associates from the City of Hope National Medical Center. Ferrel [1996: 212–13] stressed that the model is an "inclusive concept that incorporates aspects of physical, psychological, social, and spiritual well-being". Figure 1 shows the aspects considered in evaluating the quality of life of patients affected with cancer-related pain.

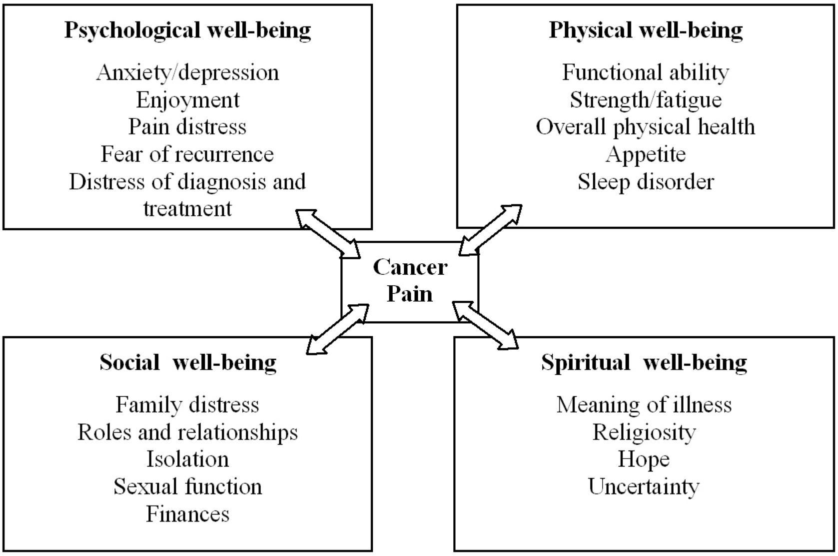

Fig. 1. Dimensions of quality of life in cancer disease [modified from Ferrel 1996: 213].

Age is one of the most frequently mentioned determinants of emotional reactions and quality of life in females with breast cancer [Stępień 2007]. It needs to be noted at this point that there is a strong correlation between age and risk of contracting a malignant neoplasm. The risk of breast cancer becomes considerably higher in women after menopause, particularly those over 50 years of age (midlife) and doubles in the eighth decade of life compared to the fourth decade [Arndt *et al.* 2001, Krebs *et al.* 2006, Guglas *et al.* 2007]. Older women seem to be more adaptable to age-associated conditions such poorer physical health and functioning, increasing complaints, greater psychological distress, and comorbidity, than younger ones [Reuben 1997, Thome *et al.* 2004]. Many researchers emphasize that the midlife transition as a time of biological and psychosocial changes evokes negative as well as positive feelings [Avis *et al.* 2004, Kaczmarek 2004]. Young breast cancer patients have a significantly more symptoms of distress, higher anxiety levels and a lower quality of life [Wong-Kim *et al.* 2005]. But results published by other researchers are not consistent in this respect. The tendency for higher anxiety and depression in older breast cancer patients were also observed by Willits [1994], Majkowicz *et al.* [1994], Stępień [2007] and others.

The main aim of this study is to determine whether chronological age and selected socio-demographic factors affect the self-reported quality of life in females with breast cancer.

Materials and methods

The sample group consisted of 145 females who had been diagnosed with breast cancer. They had undergone radical surgery (unilateral mastectomy), chemotherapy and radiotherapy, and were undergoing hormonotherapy. All of them were patients of the Greater Poland Cancer Centre and members of the “Amazonki” club (post-mastectomy women's association) from the Wielkopolska and Małopolska regions. This cross-sectional research project was conducted from 2007 to 2008 under the name "Long-term quality of life research in patients treated for neoplastic diseases" and was approved by the Bioethical Committee of the Regional Chamber of Doctors in Poznań. The subjects completed a voluntary survey containing a number of detailed questions concerning their socio-demographic status (education, marital status, place of residence), lifestyle (diet, alcohol, smoking, physical activity), health (medicines taken, past gynecological procedures, hormonal therapies undergone, period since diagnosis and treatment completion, past record of cancer, diagnoses in the family, how the disease was identified), and current quality of life evaluation following the experience of breast cancer.

Data regarding this group's quality of life were obtained by means of the Quality of Life in Adult Cancer Survivors (QLACS) questionnaire proposed in the study by Avis *et al.* [2005]. The new QLACS indicator was based on the definition formulated by Gotay *et al.* [1992] which postulates that human well-being is composed of two components: (1) an ability to conduct every-day activities, reflecting mental, psychological and social well-being; and (2) patient satisfaction with his/her therapy results and health. The definition emphasizes both an individual's functioning with disease and his or her level of satisfaction with that functioning, thus assigning a subjective dimension to the idea quality of life [Gotay *et al.* 1992]. The QLACS questionnaire consists of 47 detailed items referring to 12 domains classified into two groups:

A. Generic domains (GE): (1) negative feelings, (2) positive feelings, (3) cognitive problems, (4) physical pain, (5) sexual problems, (6) fatigue, (7) social avoidance;

B. Cancer-specific domains (CS): (1) financial problems, (2) appearance concerns, (3) distress over recurrence, (4) family-related distress, (5) benefits of cancer.

The evaluation rates for the above-listed domains were determined on the basis of total scores received from the relevant items, with responses scaled from one to seven (1 – never, 7 – always). Higher scores indicated stronger perception of a problem, i.e., lower quality of one's life. For example, cognitive problems were expressed by the following statements: (1) you were bothered by having a short attention span, (2) you had trouble remembering things, (3) you had difficulty doing activities that require concentrating, (4) you were bothered by forgetting what you started to do. The score from items referring to cognitive domain could range from 4 (high quality of life due to the lack of cognitive problems) to 28 (very poor quality of life caused by serious cognitive disorders). To standardize interpretation of results, the questions reflecting positive feelings and cancer benefits were scored inversely. For items concerning the other domains, see the study by Avis *et al.* [2005]. Additionally, GE and CS overall indicators were calculated by adding together scores from items referring to particular domains (seven domains for GE and five domains for CS).

Computations were performed using the Statistica 8.0 Soft. Inc. 2008 - Statistica for Windows package. Statistical decisions were taken with a 5% error probability. Distributions of the analyzed QLACS domains were checked for normality using the D Kolmogorov-Smirnov test. Where a distribution was not normal, the median and quartile values (*Q1, Q3*) were used for analysis. For evaluation of significant differences between domains points for sub-groups based on study variables, the Kruskal-Wallis rank test was used.

Results

The statistical analysis was based on 145 questionnaires correctly completed by females whose median chronological age at study entry was 57.1 (*Q1* = 50.3; *Q3* = 62.5; *Min* = 32.0, *Max* = 84.4) and age at diagnosis was 53.1 (*Q1* = 46.0; *Q3* = 58.8; *Min* = 25.9, *Max* = 79.0). The most numerously represented were females from the 51-60 age group (at study entry: 41.4%, at diagnosis: 38.7%). The time interval between the cancer diagnosis and the survey dates ranged from 0.1 to 15.3 years (*Me* = 3.1; *Q1* = 0.6; *Q3* = 6.1).

The analysis of the subjects' socio-demographic status showed a predominance of women with secondary education, married or having a partner, and residents of large and medium-sized cities. A detailed breakdown by chronological age at study entry and socio-demographic variables is shown in Table 1. Table 2 provides basic descriptive statistics for the selected QLACS domains and overall GE and CS indicators.

The next stage was to determine whether there are differences in evaluation of the 12 domains between the groups separated by chronological age, period since diagnosis and selected socio-economic variables (the Kruskal-Wallis rank test). The results obtained indicated lack of significant differences between individuals varied by chronological age ($p > 0.05$). It was observed, however, that the older women (over 70) showed a stronger tendency to avoid social contacts and reduced concern over appearance as compared to the younger women. It was found that the time elapsed since diagnosis was a significant differentiating factor in terms of self-reported positive emotions ($H = 7.44, p = 0.023$), cognitive problems ($H = 10.34$, $p = 0.001$) and sexual functioning ($H = 14.64$, $p = 0.001$). The differences manifested themselves in the rise of positive emotions relative to the period of time passed since diagnosis, accompanied however by the decline in cognitive functions and sexual desire (Fig. 2). The level of education and marital status proved to affect the quality of life implying differences in the area of social contacts. More highly educated females showed higher tendency to social avoidance ($H = 4.60, p = 0.032$) (Fig. 3) and were more severely affected by fatigue and exhaustion – those living with partners more so than single ones ($H = 4.75$, $p = 0.034$) (Fig. 4). Subjects' places of residence were also examined, but no important differences in general and cancer-specific domains were found between responses of urban and rural residents.

Table 1. Selected characteristics of studied women

Characteristics	*N*	%
Chronological age (years):		
31-40	6	4.1
41-50	27	18.6
51-60	60	41.4
61-70	40	27.6
>70	12	8.3
Period since diagnosis:		
≤ 1 year	48	33.1
> 1 year	97	66.9
Education:		
primary	20	13.9
vocational	33	22.9
secondary	62	43.1
high	30	20.1
Marital status:		
married/ partnered	107	73.8
divorced/separated	10	6.9
never married	9	6.2
widowed	19	13.1
Place of living:		
village	43	29.7
small town (pop. ≤25 k)	21	14.5
town (pop. 25–100 k)	35	24.1
city (pop. > 100 k)	46	31.7

Table 2. Descriptive statistics of QLACS domains

Domains	*Me*	*Q1*	*Q3*	*Min*	*Max*
Negative feelings	12	10	16	4	25
Positive feelings	19	15	24	7	28
Cognitive problems	10	7	14	4	25
Physical pain	12	9	16	4	28
Sexual problems	12	8	15	4	26
Fatigue	15	12	17	6	25
Social avoidance	10	6	13	4	25
Financial problems	12	8	17	4	28
Benefits of cancer	20	16	23	4	28
Family-related distress	15	13	18	4	21
Appearance concerns	14	12	18	4	28
Distress over recurrence	18	11	23	4	28
Generic domains index GE	90	81	103	47	153
Cancer-specific domains index CS	92	75	102	20	139

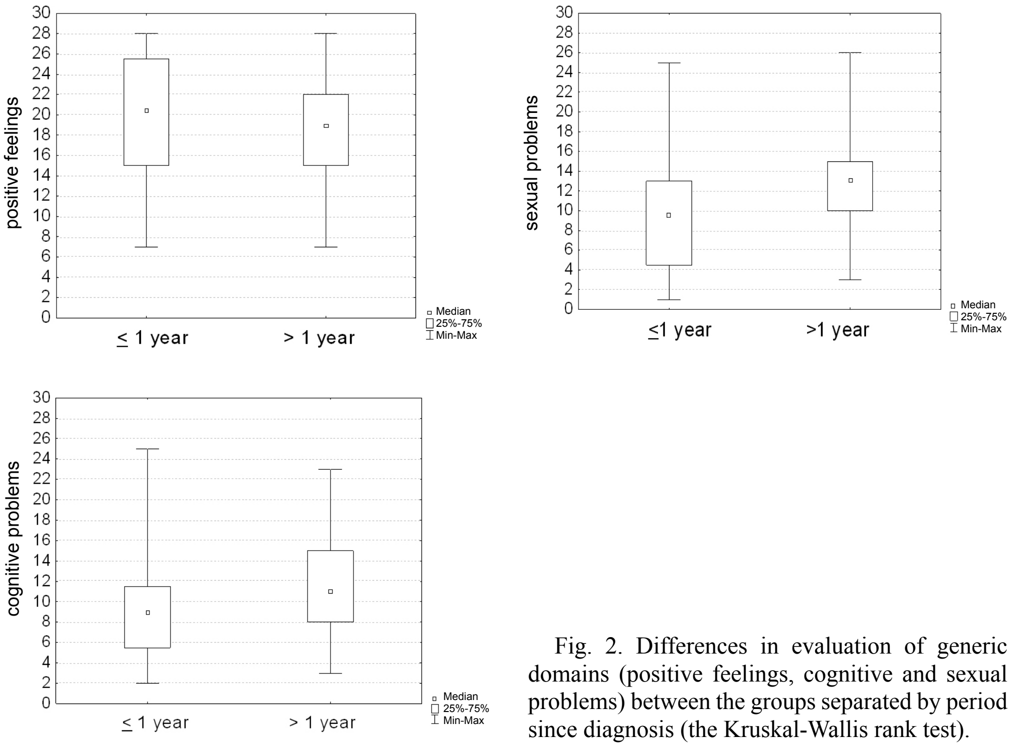

Fig. 2. Differences in evaluation of generic domains (positive feelings, cognitive and sexual problems) between the groups separated by period since diagnosis (the Kruskal-Wallis rank test).

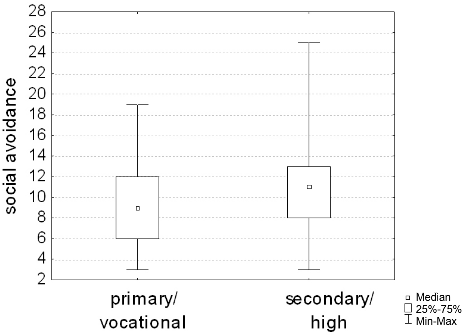

Fig. 3. Differences in evaluation of social avoidance between the groups separated by level of education (the Kruskal-Wallis rank test).

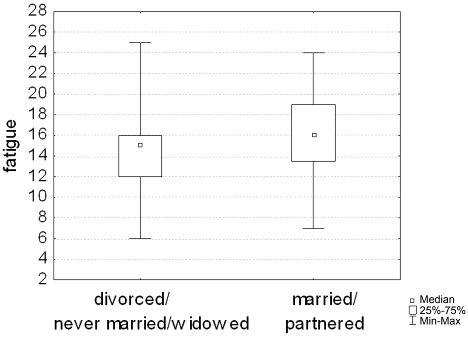

Fig. 4. Differences in evaluation of feeling of fatigue between the groups separated by marital status (the Kruskal-Wallis rank test).

An overall evaluation of GE and CS domains was conducted. The results of the Kruskal-Wallis rank test ($p > 0.05$) indicated that the variables used (age, period since diagnosis, socio-demographic factors) had no significant effect as regards differences in the general and cancer-specific quality of life evaluations. Figure 5 shows GE and CS indicators as total scores received from particular categories of examined factors.

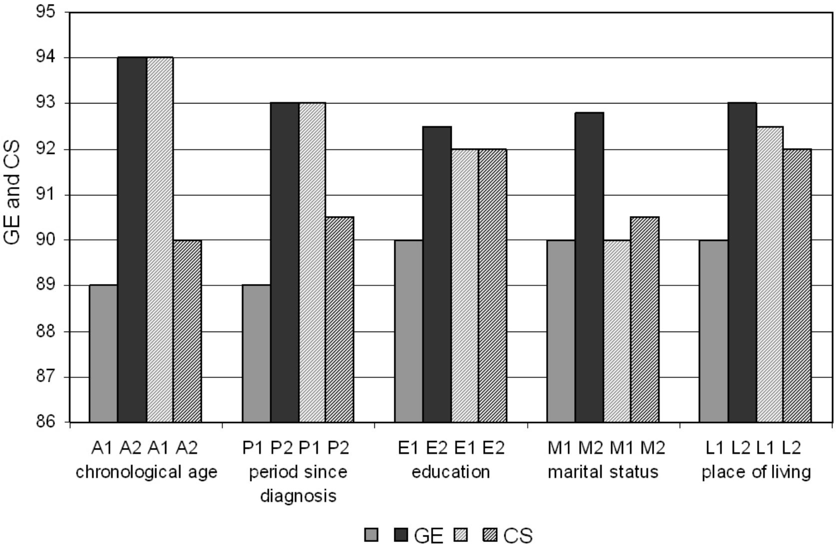

Fig. 5. The median values of overall GE and CS domains in analyzed factors sub-groups (abbreviations: chronological age: A1: <1 year, A2: >1 year; period since diagnosis: P1: <1 year, P2: >1 year; education: E1: primary/vocational, E2: secondary/high; marital status: M1: divorced/never married/widowed, M2: married/partnered; place of living: L1: village/small town, L2: town/city).

While lacking statistically significant differences in terms of indicator values, particular groups did exhibit some interesting tendencies. Older females and those with the disease diagnosed more than one year before the survey regarded the quality of their lives as worse in the GE domain and better in the CS domain. In regard to education level, respondents with secondary and higher education were characterized with lower self-perceived quality of life in the general domain, but did not differ in the cancer-specific domain. Women living with a partner (husband or cohabiting partner) evaluated their quality of life as worse both in the general and cancer-specific terms. Residents of medium-sized and large cities reported impaired quality of life in the general domain, but a better quality of life in the cancer-specific one.

Discussion

Relations between changes on three levels – biomedical, psychological and social – make for a complex description of human developmental processes. Therefore quality of life researches are useful for the assessment of both mental and biological conditions. Psychological well-being, related to an individual's psychological satisfaction, emotional and social comfort, is significantly dependent on physical well-being, which provides information (particularly important for human biologists) about personal biological and health conditions. The results obtained from this study were aimed to demonstrate the influence of certain variables, e.g., chronological age, period since diagnosis, and socio-demographic status, on females' emotional attitudes towards their post-mastectomy quality of life.

The analyses conducted in this study reveal that quality of life evaluations are not diversified by age, neither in the general nor in the cancer-specific domains. Results published by other researchers are not homogeneous in this respect, however. Osowiecki and Kompas [1999] found that older women are characterized by a lower risk of cancer-induced depression than younger ones. The analysis of distress levels carried out by Stępień [2007] by means of the Hospital Anxiety and Depression Scale (HADS) showed that older patients (over 50) had a significantly higher anxiety level than their younger counterparts (below 50). The tendency for stronger anxiety and depression in older breast cancer patients was also observed by Majkowicz *et al.* [1994], who explained it by age-correlated impairment of adaptation capability. Willits [1994] explained this by arguing that older women are often lonely, more exposed to anxiety and uncertainty, more frustrated by being stigmatized with cancer and perceiving of themselves as "scarred" by their disease. This observation was corroborated in the present study, with the oldest females (over 70) admitting to avoidance of social contacts more than the other age groups. Owing to their physical limitations it may be more difficult for them to keep in touch with their families and friends or to participate in support groups, or, if they have lost their close ones, even impossible. Moreover, the overall GE and CS indicator analysis for older females show that they evaluated their lives lower in the GE domains, but higher in the CS domains.

Appearance concerns apply mostly to changes following radical surgery of mastectomy with removal of surrounding lymph nodes. This procedure causes many unfavorable changes in the upper limb and shoulder of the affected side. This not only leads to physical disability (disturbance of body static, engorgements, limited efficiency of the upper limb) that may hinder the performance of everyday activities, especially in the older women, but also strongly affects the psyche. The loss of a breast may be a serious threat to the sense of femininity as breasts continue to be cultural symbols of female gender and maternity [Piątek *et al.* 2004]. Therefore, younger patients may suffer more from being unable to fulfill themselves as wives and mothers as opposed to older women who have already passed this stage of their lives. Engel *et al.* [2004], in their cross-sectional studies, demonstrated that patients after mastectomy were marked with deteriorated body self-image and decline in sexual activity. This applies in particular to younger females, who are afraid to expose their body to a partner and report more appearance concerns than older females. Another important issue is the anxiety over irreversible loss of attractiveness, given that methods of breast reconstruction are not always aesthetically perfect [Mika 1984].

Numerous sources claim that younger patients are characterized by a higher level of emotional distress. In many cases, diagnosis of breast cancer at a young age proves to be destructive for a woman's family-related, professional and social roles, for her material standing, and every-day functioning [Weitzner *et al.* 1997, Engel *et al.* 2004]. On the other hand, younger women are more energetic, have better access to social support resources, are bolder and more rational in their life approach. They are also more likely to be cured than older patients [Jassem 1998]. Because of the large discrepancies in published research results, there are no grounds for establishing a general correlation between age and quality of life evaluation. The emotional response of females after mastectomy is influenced by a range of intertwining factors, such as culture, past experiences, or personality traits. Barraclough [1997] notes that people sharing similar personality traits function in similar ways. Those with a so-called "hard personality", or optimists, can more efficiently cope with stressful experiences (regardless of age) as they associate the removal of the breast gland with recovery from the disease. Consequently, they are more likely to return to their normal life activities [Brissette *et al.* 2002, Piątek *et al.* 2004].

The level of education is reflected by the amount of knowledge acquired, but also often by the professional activity performed, material situation and the ability to cope with problems. Some studies also indicate that highly educated and professionally active females pay more attention to their appearance. For them, a successful breast reconstruction constitutes one of the major determinants of the quality of life in the area of interpersonal contacts. Females with primary and vocational education have been found to be less concerned about their physical appearance [Nowicki and Nikiel 2006]. Opinions on socio-demographic determinants of neoplastic diseases are mixed. Some researchers emphasize that lower educated females are often characterized with lower living standards and worse-off lifestyles corresponding to their material standing, while a higher level of education and higher income may have a protective effect, if only for better access to treatment opportunities and preventive measures, e.g., mammography [Manjer *et al.* 2000, Arndt *et al.* 2001, Kravdal 2002, Ponczek *et al.* 2006]. This may account for a much higher percentage of breast reconstruction surgery among highly educated, professionally active and, consequently, better-off females. Our own research shows that women representing different education levels differed in their quality of life evaluations relating to social contacts in that women with higher education were more inclined towards social avoidance. It was found that the disease, as a problem, does not apply exclusively to the affected women but also has a strong impact on family and friends. Better educated patients with higher level of knowledge and stronger learning abilities are also reported to have given up social contact to avoid talking about their disease as they associate such contact with feelings of embarrassment and, sense of disability or awkwardness which in turn makes them avoid personal interactions and social contact [De Walden-Gałuszko and Majkowicz 1994]. As shown by other researchers, contacts with the closest family brings about an improvement in quality of life [Ponczek *et al.* 2006]. Notably, higher educated females are less vulnerable to episodes of depression [Osowiecki and Kompas 1999, Ponczek *et al.* 2006]. On the other hand, they have been observed to show more anxiety about the consequences of the disease [Nowicki and Rządkowska 2005].

Place of residence is highly significant due to the inequalities in access to specialist health facilities (specialist doctors, support groups, „Amazonki" clubs), but also to differences in mind-set between residents of large urban centers and those living in small towns and rural areas [Nowicki and Nikiel 2006]. Our research demonstrates that place of residence is not a differentiating criterion in the quality of life evaluation – a conclusion corroborated by Stępień [2007]. Researchers, however, stress that the place of residence matters in that it conditions the access to aid and consultation needed to combat the physical and psychological effects of cancer [Tchórzewska 1996].

The relevant literature is equivocal about the relationship between females' post-mastectomy quality of life evaluations and their marital status [De Walden-Gałuszko and Majkowicz 1994, Nowicki and Nikiel 2006, Stępień 2007]. The comparison of results analysed in terms of marital status show that females in a relationship evaluated their lives less favorably in terms of both the overall GE and overall CS indicators. The lack of significant differences in self-reported life evaluation in women of different marital status was also pointed out by Roussi *et al.* [2007]. Other researchers have demonstrated that depression and anxiety are more intense in single patients. In the absence of a partner, a patient may lose the motivation to battle the disease, surrender sooner, think about death more often, and feel more anxious [Kravdal 2002, Nowicki and Rządkowska 2005, Ponczek *et al.* 2006]. Czapiński [1992], in his study on the sense of happiness under diverse conditions, suggested that people evaluating their more highly, who are married, naturally more cheerful and optimistic, are more likely to have a favorable view of reality than born pessimists with difficulties entering into interpersonal relations and who are less inclined to get married. In face of the disease, one might therefore perceive that this factor, so closely linked with psychology and personality, as to be of great importance. However, as pointed out by De Walden-Gałuszko and Majkowicz [1994], it is difficult to discern a clear-cut relationship between marital status and quality of life. Our survey results show that women representing different marital status differed in respect of fatigue and exhaustion, with those in relationships being more affected. As mentioned before, cancer therapy influences patients' physical condition which may lead to greater fatigue in women who wish to continue their normal household activities.

Humans strive to achieve a good quality of life. A subjective quality of life evaluation is a comparison between an actual and an ideal reality. Therefore, in the pursuit to improve their quality of life, individuals try to reduce that difference by bringing both realities closer together. This is achieved in different ways, often by distorting the evaluation of actual situation and regarding it as better than it really is, e.g., through the mechanism of rejection, underestimation, or hope enhancement. People may also improve their quality of life by changing the content and hierarchy of desired values. By becoming accustomed to their pathologic condition, they come to recognize it as "normal", replace previous dreams, e.g., recovery to health, with lesser, attainable goals, such as control of pain or improvement of locomotive efficiency [Majkowicz 2000]. When confronted with a serious disease, many people completely change their existing system of values, tend to assign sense to the disease that affects them, start to perceive and appreciate issues they have not noticed before, ignore consequences, organize their lives anew, show more optimism and hope and thus, in a way, benefit from the disease [Carver *et al.* 2000b, Antoni *et al.* 2001, Urcuyo *et al.* 2005].

Comparison of our own research with that carried out by Barraclough [1997] confirms the correlation between quality of life and time elapsed between diagnosis and the study. Longer survivors are characterized with a better quality of life as regards benefiting from the disease. Favorable mind-set changes are associated with an increased quality of life evaluation, ability to enjoy the present, changes to life priorities, elevated spirituality and greater tolerance for others. The respondents were found to show a rising tendency to feel positive emotions. However, their self-reported cognitive functions and sexual interest seemed to deteriorate in the course of time. The results of the present study corroborate the findings made by Engel *et al.* [2004], namely that concerns over one's future health and quality of life improve with time, contrary to diminished body image aesthetics and sexual functioning [Ponczek *et al.* 2006]. Results concerning this issue are equivocal, though: Ringdal and Ringdal [2000] demonstrated that changes in female patients' quality of life within four years following diagnosis are relatively small.

Conclusions

Quality of life research is an important category of actions performed for the benefit of the diseased having implications for clinical, theoretical and methodological approaches. In terms of clinical implications, the research shows that breast cancer patients after mastectomy combined with chemotherapy and radiotherapy report long-lasting physical discomfort which may indicate the need for further physiotherapy. Theoretical implications refer to the disease as an event requiring psychological support, whereas methodological implications point to the importance of the quality of life evaluations in the context of social support for patients experiencing physical and psychological suffering [Andrykowski *et al.* 1996].

Breast cancer and its consequent mutilating surgery, radiotherapy and chemotherapy have negative influences on patients emotional condition leading to a substantial decline in their quality of life. The distress related to the disease and its treatment severely diminishes patients' quality of life that other factors, such as socio-demographic environment, chronological age or period since diagnosis, play a relatively unimportant role in a subjective evaluation of quality of life. One needs to be cognizant of the variety of coexisting factors, including psychological and characterological, that contribute to the quality of life evaluation.

Notes

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Streszczenie

Procesy rozwojowe człowieka zachodzą na trzech wzajemnie przenikających się płaszczyznach: biologiczno-medycznej, społecznej i psychologicznej, stąd badania jakości życia są użyteczne dla szacowania kondycji zarówno psychicznej jak i biologicznej osób zdrowych lub chorych. Działania prowadzone w celu leczenia i opieki nad osobami, u których wystąpiła choroba nowotworowa powinny skupiać się nie tylko na likwidacji lub kontroli rozwoju choroby, ale również na gwarantowaniu pacjentom dobrego samopoczucia fizycznego, psychicznego, społecznego oraz duchowego (ryc. 1). Celem pracy było określenie, czy wiek kalendarzowy oraz wybrane czynniki społeczno-demograficzne wpływają na jakość życia kobiet, u których wystąpiła choroba nowotworowa piersi. Badaną grupę stanowiło 145 kobiet, w wieku od 32,0 do 84,4 lat (*Me* = 57,1 lat) po jednostronnej mastektomii, chemio-, radio- oraz w trakcie hormonoterapii. Badane były pacjentkami Wielkopolskiego Centrum Onkologii w Poznaniu oraz członkiniami klubów „Amazonki" z Wielkopolski i Małopolski. Badane różniły się wiekiem kalendarzowym, czasem, jaki minął od momentu zachorowania oraz pozycją społeczno-demograficzną (tab. 1). W pracy wykorzystano metodę oceny uzależnionej od choroby nowotworowej jakości życia (QLACS), przy pomocy której oceniono stopień zadowolenia z siedmiu ogólnych (GE) oraz pięciu specyficznych dla choroby nowotworowej (CS) sfer życia. Ponadto wyliczono wskaźniki kompleksowe GE oraz CS (tab. 2). Wyniki testu rang Kruskala-Wallisa (p>0,05) wykazały brak istotnych różnic w ocenie swojego życia, zarówno w sferach GE, jak i CS, wśród kobiet różniących się wiekiem kalendarzowym. Czas, jaki upłynął od momentu zachorowania istotnie różnicował odczucia pozytywne (H = 7,44; p = 0,023), problemy poznawcze (H = 10,34; p = 0,001) oraz seksualne (H = 14,64; p = 0,001) w taki sposób, że im więcej czasu minęło od momentu zachorowania, tym częściej kobiety deklarowały wzrost odczuwania pozytywnych emocji, ale również pogarszanie się funkcji poznawczych i spadek zainteresowania seksem (ryc. 2). Kobiety lepiej wykształcone częściej unikały kontaktów towarzyskich (H = 4,60; p = 0,032) (ryc. 3), pozostające w związku wskazywały na silniejsze odczuwanie zmęczenia i wyczerpania (H = 4,75; p = 0,034) (ryc. 4), zaś badane pochodzące z miejscowości o różnym stopniu urbanizacji nie różniły się jakością życia w żadnej z analizowanych sfer. Ocena kompleksowych wskaźników GE oraz CS wykazała kilka, choć nieistotnych statystycznie, ale ciekawych tendencji. Kobiety starsze, takie, u których choroba zdiagnozowana była dawniej niż rok od momentu ankietowania, lepiej wykształcone, pozostające w związku i będące mieszkankami miast gorzej oceniały swoje życie ze względu na GE. Dolegliwości związane z chorobą CS były bardziej uciążliwe dla kobiet młodszych, pozostających w związku małżeńskim lub partnerskim i mieszkanek wsi (ryc. 5). Wyniki uzyskane w niniejszej pracy wykazały, że stres wywołany chorobą nowotworową oraz jej leczeniem, na tyle silnie obniża jakość życia pacjentów, że czynniki natury biologicznej i społeczno-demograficznej nie odgrywają pierwszoplanowej roli w subiektywnej ocenie życia. Na subiektywną ocenę jakości życia nakłada się wiele współzależnych czynników, a wśród nich również takie, które wynikają z natury psychicznej i charakterologicznej osoby badanej.