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Emotional intelligence, life satisfaction, and depression in breast cancer among women

Badr El Marjany[1], Mohammed Karam Saoud[2], Mohammed El Marjany[3], Zakaria Badri[3], Smail Alaoui[1]
[1]Faculty of Arts and Humanities - Dhar El Mahraz, Sidi Mohamed ben Abdellah University, Fez, Morocco
[2]Faculty of Medicine, Pharmacy, and Dentistry, Sidi Mohamed ben Abdellah University, Fez, Morocco
[3]Faculty of Education Sciences, Mohamed V University, Rabat, Morocco

ABSTRACT

Depression among cancer patients is a serious issue that is underestimated and poorly addressed in hospitals in developing countries. The management of depression is now integrated into all international care protocols for cancer patients. The aim of our study is to evaluate the positive impact of socio-emotional parameters, such as emotional intelligence and vital satisfaction, on the depression of breast cancer patients. Our study included 96 women who were treated at the Hassan II University Hospital in Fez. The participants completed a questionnaire consisting of 3 scales measuring the variables of interest, which were adapted and validated for the Moroccan population. The main results of our study show a direct positive impact of increased emotional intelligence on depression, as well as an indirect positive impact through increased vital satisfaction.

Key words: emotional intelligence, breast cancer, depression

Address for correspondence:

Badr El Marjany, Faculty of Arts and Humanities - Dhar El Mahraz, Sidi Mohamed ben Abdellah University, Fez, Morocco. E-mail: Badrelmarjany.psychologie@gmail.com

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INTRODUCTION

The battle against breast cancer is a very challenging process for patients, which can cause intense psychological distress ranging from profound emotional distress to severe depression. In addition to the physical sequelae that are difficult to bear, breast cancer disrupts the marital, social, family, and professional aspects of patients' lives. Whether it is during the diagnosis, treatment, or post-treatment period, variables such as social support and vital satisfaction appear as key factors influencing depression symptoms in women with breast cancer. The aim of our study is to evaluate the impact of these parameters on depression in women with breast cancer.

METHODS

Participants and Procedure

Prior to conducting the present study, the researchers obtained permission from the Biomedical Research Ethics Committee of Oujda (CERBO) at the Faculty of Medicine and Pharmacy of Mohammed 1 University in Oujda and the General Directorate of the University Hospital Center of Fez (CHU Fez). These entities approved the study procedures and consent forms, and authorized access to the target population at CHU Fez hospital. Out of the initial 120 women, 24 participants were excluded due to incomplete questionnaires. The final sample of this study consisted of 96 Moroccan women, with 25% aged between 18 and 30, 46% aged between 30 and 45, and 30% aged over 46. 85% of the women had a medium-low level of education, and only 25% had completed university studies. Regarding marital status, 43% were married, 21% were single, 23% were divorced, and 13% were widowed. 69% of the participants lived in urban areas and 31% in rural areas. The participants completed a questionnaire consisting of 3 scales measuring the variables of interest, which were adapted and validated for the Moroccan population. The questionnaire was administered individually and anonymously by a single collaborator (who followed the approved ethical procedures) in a primary care room while the participants were waiting for their turn to undergo a radiographic test. The women took between 15 and 25 minutes to complete the entire questionnaire. The inclusion criteria were being a Moroccan woman who had suffered from breast cancer with or without mastectomy. All participants gave their consent to participate.

Instruments

- Socio-demographic variables measurement questionnaire: Women indicated their age, educational level, place of residence, family situation, duration of the illness, and location of the illness.
- Satisfaction with Life Scale [1]. Adapted to Arabic by Ayyash-Abdo and Sánchez-Ruiz, and adapted to the Moroccan context in the adolescent population by El Ghoudani et al. [2,3]. The scale focuses on the cognitive evaluation of a person's satisfaction with their life in general. The original scale consists of 5 Likert-type items, with a 7-point response range (1, completely disagree; 7, completely agree). The internal consistency is α=.86.
- Social Support Perception Scale, adapted and validated for the Moroccan context by El Ghoudani and Lopez-Zafra [4,5]. This instrument assesses the perception of the relationship maintained with others. It contains a total of 23 items, which are divided into three subscales according to the source of support: family α=.86, friends α=.80, and others α=.84, forming a general index of social support α=.93. The scale is scored using four response alternatives, ranging from completely agree to completely disagree.
- The Beck Depression Inventory, adapted to Arabic by Hamdi Abdallah, and adapted to the Moroccan context for the adolescent population (BDI-IA. AL-MA) by Alaoui et al. , to measure depressive symptoms and their intensity. The adapted version consisted of 21 items, with a 4-point Likert-type response format (from 0, not at all, to 3, most severe). The reliability coefficient reported in different studies ranges from 0.89 to 0.93 , and in the present study, α=.87[6-8].

RESULTS

For the analysis of the results, we used the statistical software IBM SPSS V.20 and PROCESS v. 3.4 for the mediation analyses [9]. To address the first hypothesis and examine whether life satisfaction decreases with disease progression, one-way analysis of variance (ANOVA) was conducted to test for significant differences in levels of life satisfaction based on disease duration and disease localization. The results show that the level of life satisfaction is significantly lower among women who have had the disease for more than 6 months compared to those who have had it for less than 3 months ($F(2, 95)=5.306$, $p=0.007$) (Table 1). Regarding disease localization, although the results are not statistically significant ($t(94)=1.78$, $p=0.077$), there is a trend for lower levels of life satisfaction among women who are in an advanced stage of the disease compared to those who still have localized disease ($M=13.31$, $SD=4.60$ vs. $M=15.19$, $SD=5.52$). To address the second hypothesis, which examines the significant correlation between life satisfaction and depression, a Pearson correlation analysis was conducted. The results show a statistically significant negative correlation between the two variables ($r=-.379$, $p < .05$). Women who report lower levels of life satisfaction experience higher levels of depression. Furthermore, through a linear regression analysis, we verified that life satisfaction significantly predicts levels of depression, indicating that a decrease in life satisfaction leads to an increase in depression levels ($\beta=0.379$, adjusted R-squared=0.134, F-change=15.71, $p < 0.01$). Finally, to test our hypothesis regarding the moderating effect of social support on the relationship between life satisfaction and depression, a moderation analysis was conducted using the Process macro (Hayes, 2018). The results confirm the presence of an interaction between life satisfaction and social support (B=0.02 (0.01), $t=2.40$, $p=0.018$) (Figure 1). As shown in Figure 1, a decrease in life satisfaction predicts an increase in depression levels only at low levels of social support, but not at high levels of social support. Therefore, social support buffers the negative effect of a decrease in life satisfaction on depression. Social support acts as a protective factor. Women who have high levels of social support are protected against the negative effect of a decrease in life satisfaction on depression (Figure 2).

Tab 1. Mean (M) and standard deviation (SD) of vital satisfaction by duration of the disease

Disease duration	Vital Satisfaction M(SD)
Less than 3 months	17.75 (5.65)
Between 3 to 6 months	15.17 (5.41)
Less than 6 months	12.94 (4.45)

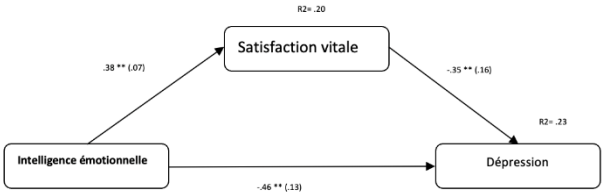

Fig 1. Social support moderating the effect of vital satisfaction on depression among women with breast cancer

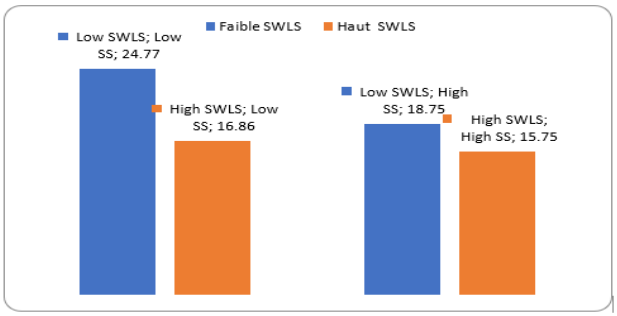

Fig 2. Levels of depression based on vital satisfaction and social support

DISCUSSION

Our study demonstrated that emotional intelligence, depression, and life satisfaction of patients with breast cancer were correlated with each other. Additionally, the mediation analysis revealed the mediating role of life satisfaction between emotional intelligence and depression in these breast cancer patients.

The results of our study showed a significant negative correlation between Emotional Intelligence (EI) and depression, which supports our first and second hypotheses. A Chinese cross-sectional study conducted on 215 patients with breast cancer showed a significant negative correlation between EI and fear of breast cancer recurrence, which is a source of depression [10].

Asad Ali Shah et al. also demonstrated a correlation between EI and fear-based depression using the conservation of resources theory. Emotional intelligence is a personal psychological resource that can help prevent and alleviate stress and stress-induced negative mood [11,12].

In fact, breast cancer patients with higher levels of EI are able to better manage their emotional responses, which reduces depression in this population. For breast cancer patients, EI not only reduces the negative effects of mood but also generates positive emotions [13].

This study revealed that EI and depression were significantly associated with life satisfaction, confirming our third hypothesis. This is consistent with the study by Baudry, which concluded that depression related to a greater fear of cancer recurrence has a detrimental effect on the quality of life of patients, indicating the need for early screening and intervention for depression. The importance of EI impacts daily life: an individual with high EI can better cope with life's challenges to prevent the deterioration of psychological and physical health [14,15]. This concept could be applied to cancer patients [16]. Rey explored the relationship between EI and health-related quality of life in a sample of 62 cancer patients and found that high EI scores were moderately and significantly associated with higher emotional role, social functioning, mental health, and vitality. He concluded that, regardless of the influences of dispositional personality traits and sociodemographic variables, the results suggest that EI could also play an important role in how cancer patients can experience positive physical, mental, and social well-being in their lives.

Patients who are able to recognize and understand their negative emotions may have more control over their stressful and challenging experiences as they can confer meaning, which can lead to higher life satisfaction. Additionally, emotionally intelligent individuals may experience lower emotional intensity in response to a cancer diagnosis, which could result in a lower effective response to their cancer experience and less emotional distress.

In a Portuguese study, the authors compared the differences between cancer patients and healthy subjects regarding the relationship between EI, life goals, and life satisfaction [17]. The results showed that in healthy subjects, the perception and regulation of emotions were significantly related to Life Satisfaction (SWL), while emotional facilitation and understanding were not. In cancer patients, emotional perception, understanding, and regulation had a significant relationship with SWL, unlike emotional facilitation. EI has shown positive effects in the context of pain and chronic illnesses such as cancer, as EI abilities are prominent in coping with stress associated with the illness, minimizing its impact, and facilitating adaptation [18-21]. According to Teques, these interesting results show that cancer patients have a more significant relationship between EI and SWL than healthy subjects.

EI as a moderator of the relationship between stressful experiences and mental health has shown that in healthy subjects, emotional perception and regulation were positively correlated with experiential and existential dimensions of life meaning. Emotional facilitation was not related to either dimension. Furthermore, emotional understanding was significantly related to the experiential dimension but not the existential meaning. The relationship between the experiential and existential dimensions of life meaning in cancer patients was significant in emotional perception, understanding, and regulation, while emotional facilitation was not positively correlated with any dimension.

The impact of Emotional Intelligence (EI) on mental health also affects physical health, as shown by empirical studies. A high level of EI is associated with positive health behaviors in both cardiovascular activity (exercise behavior) and the immune system (reduced tendency for alcohol consumption, etc.).

Depression greatly influences the relationship between EI and life satisfaction. In other words, breast cancer patients with lower emotional

intelligence levels may experience higher levels of depression, which, in turn, can reduce life satisfaction. Severe depression often leads to mental disorders and dysfunctions, which can explain its mediating effect on the relationship between EI and life satisfaction.

This study demonstrated the correlation among these three variables: EI, depression, and life satisfaction, based on significant statistical data. Moreover, it revealed the mediating role of depression in the relationship between EI and life satisfaction. While this relationship has been established in the general population literature, the merit of this study lies in demonstrating this correlation among a specific target population represented by breast cancer patients.

The unique and independent association between EI, depression, and life satisfaction is particularly important, as this variable can potentially be used as a screening evaluation to identify patients likely to have low life satisfaction after receiving a cancer diagnosis. The practical implication of these results would be to screen vulnerable patients by healthcare professionals and provide them with early psychological counselling to prevent the onset of depression or its deepening. Healthcare professionals can also propose a training program to enhance patients' EI, thus avoiding progression towards depression and reduced life satisfaction.

Interventional studies suggest that emotional abilities can be improved, yielding beneficial and effective results in personal and interpersonal functioning. Training in EI capacities, focusing on perception, use, understanding, and management of emotions, could play a role in health promotion programs, thereby helping to alleviate negative distress associated with well-being and life satisfaction of cancer patients.

STUDY LIMITATIONS

1. This study included breast cancer patients at different stages of their care journey (newly diagnosed patients, ongoing treatment, or after treatment: patients in complete remission, with local or metastatic recurrence, etc.). Therefore, the conclusions should be interpreted with caution due to the heterogeneity of this population.
2. The cross-sectional design of this study precludes causal inferences. Hence, longitudinal studies should be conducted to demonstrate the causal associations among these variables.
3. The small sample size: only 94 patients were included, whereas larger sample sizes are generally recommended.

CONTRIBUTION OF THE STUDY

The importance of this study lies in measuring and evaluating the levels of emotional intelligence and vital satisfaction in women with breast cancer and their role in protecting against depression.

The objective of the study is to provide us with the opportunity to develop protocols and programs for cognitive remediation and emotional intelligence development for women with breast cancer.
Contribute to the guidance of public policies, especially the Ministry of Health, by providing support structures, sponsorship, and psychological assistance, and benefiting from specialized cognitive and emotional rehabilitation programs for cancer.
The study confirms the results obtained in other scientific studies, particularly in breast cancer, which is a very important finding.

CONCLUSION

Regardless of the type of emotion, it can mediate the effect of EI on individuals' life satisfaction. The need to study and prioritize the development of EI in the field of health and cancer disease is revealed. Although these results merit replication, they can be useful for psychological practice by suggesting potential avenues for developing future psychoeducational approaches to improve the life satisfaction of cancer patients, optimize the development and acquisition of emotional skills, and establish life goals. Healthcare professionals interested in psycho-oncological care may consider EI-based training programs as an additional intervention strategy to complement current psychoeducational approaches in oncology (such as social support and local control).

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

AUTHORS' CONTRIBUTIONS

Badr El Marjany: data collection, literature review, and article writing. Other authors: literature review and article writing.

REFERENCES

1. Diener E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction with Life Scale. J Pers Assess. 1985;49:71–75.
2. Ayyash-Abdo H, Sánchez-Ruiz MJ. Subjective wellbeing and its relationship with academic achievement and multilinguality among Lebanese university students. Int J Psychol. 2012;47:192–202.
3. Cortés-Denia D, El Ghoudani K, Pulido-Martos M, Alaoui S, Luque-Reca O, et al. Socioemotional Resources Account for Academic Adjustment in Moroccan Adolescents. Front Psychol. 2020; 11:1609.
4. Vaux A, Phillips J, Holly L, Thomson B, Williams D, et al. The social support appraisals (SS-A) scale: Studies of reliability and validity. Am J Community Psychol. 1986. doi:10.1007/BF00911821.
5. Lopez-Zafra E, El Ghoudani K. The influence of culture of honor and emotional intelligence in the acculturation of Moroccan immigrant women. Span J Psychol. 2014;17: E49.
6. Beck AT, Steer RA, Ball R, Ranieri W, et al. Comparison of Beck Depression Inventories -IA and -II in psychiatric outpatients. J Pers Assess. 1996;67:588–597.
7. Hajduska-Dér B, Kiss G, Sztahó D, Vicsi K, Simon L. The applicability of the Beck Depression Inventory and Hamilton Depression Scale in the automatic recognition of depression based on speech signal processing. Front Psychiatry. 2022;13. https://www.frontiersin.org/articles/10.3389/fpsyt.2022.879896. Accessed 24 May 2023.

8. Sanz J. 50 años de los inventarios de depresión de Beck: Consejos para la utilización de la adaptación española del BDI-II en la práctica clínica. [50 years of the Beck Depression Inventories: Recommendations for the use of the Spanish adaptation of the BDI-II in clinical practice.]. Papeles del Psicólogo. 2013; 34:161–168.

9. Introduction to Mediation, Moderation, and Conditional Process Analysis: Third Edition: A Regression-Based Approach. Guilford Press. 2023.

10. Chen WY, Wang S, Peng X, Zhu Y, et al. Trait emotional intelligence and quality of life among breast cancer patients: The mediating role of fear of cancer recurrence. Int J Nurs Pract. 2022;28:12953.

11. Asad Ali Shah S, Yezhuang T, Muhammad Shah A, Khan Durrani D, Jamal Shah S, et al. Fear of Terror and Psychological Well-Being: The Moderating Role of Emotional Intelligence. Int J Environ Res Public Health. 2018;15:2554.

12. Hobfoll SE. Conservation of resources: A new attempt at conceptualizing stress. Am Psychol. 1989;44:513–524.

13. Zysberg L, Kelmer G, Mattar L. Emotional Intelligence, Attachment and Satisfaction with Romantic Relationships among Young Adults: A Brief Report. Psychol. 2019;10:694–700.

14. Baudry J, Pointereau P, Seconda L, Vidal R, Taupier-Letage B, Langevin B, et al. Improvement of diet sustainability with increased level of organic food in the diet: findings from the BioNutriNet cohort. Am J Clin Nutr. 2019;109:1173–1188.

15. Tsaousis I, Nikolaou I. Exploring the relationship of emotional intelligence with physical and psychological health functioning. Stress Health. 2005;21:77–86.

16. Rey NL, Petit GH, Bousset L, Melki R, Brundin P. Transfer of human α-synuclein from the olfactory bulb to interconnected brain regions in mice. Acta Neuropathol. 2013;126:555–573.

17. Teques AP, Carrera GB, Ribeiro JP, Teques P, Ramón GL. The importance of emotional intelligence and meaning in life in psycho-oncology. Psychooncology. 2016;25:324–331.

18. Extremera N, DURAN A, Rey L. Perceived emotional intelligence and dispositional optimism–pessimism: Analyzing their role in predicting psychological adjustment among adolescents. Pers Individ Dif. 2007;42:1069–1079.

19. Eack SM, Newhill CE. Psychiatric symptoms and quality of life in schizophrenia: a meta-analysis. Schizophr Bull. 2007;33:1225–1237.

20. Nelis D, Quoidbach J, Mikolajczak M, Hansenne M, et al. Increasing emotional intelligence: (How) is it possible? Pers Individ Dif. 2009;47:36–41.

21. Nelis D, Kotsou I, Quoidbach J, Hansenne M, Weytens F, et al. Increasing emotional competence improves psychological and physical well-being, social relationships, and employability. Emotion. 2011;11:354–366.