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Comparative study: the quality of life of patients with leukemia, anxiety and depressive disorders

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Abstract

The purpose of this research was that of comparing the differences in the quality of life at three groups of patients, one comprised of individuals diagnosed with acute leukemia, the second one including individuals with anxiety disorders and the third one with individuals with depression. The participants (N=593) were asked to fill in the questionnaire of the quality of life assessment elaborated by the World Health Organization (WHOQOL). The data gathered were processed on the base Anova One Way and as a planned contrast. The results obtained showed significant differences among the three groups compared. The group of the individuals with leukemia obtained significantly weaker results on the physical dimension and significantly stronger results on the psychological, environmental and social relations dimensions. Still for the patients with leukemia, depending on the groups of treatment they belong (induction, re-induction and consolidation) important variations were noted for all WHOQOL dimensions.

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1. Introduction

There are many voices that underlie the idea that improvement in quality of life (QoL) is a relevant endpoint for the patients affected by leukemia (Molica, 2005). Literally the quality of life for the patients affected by leukemia is seen from different points of view. Some studies are concerned by the definition of the concept, by searching ways of operating suitable for the patients with leukemia (Cella et al., 2012, Watson, 1996). Other studies are analyzing

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the dimensions which describe and predict a certain level of the quality of life for the patients with leukemia (Arnold et al., 2009; Trask et al., 2013). Another category of studies is concerned by finding new ways of treatment in order to improve the quality of life for these patients (Else et al, 2012; Saini et al., 2011; Zent, 2012). Kanellopoulos et al. (2013) observe that for the long term survivals, the variables related to health such as fatigue, anxiety, depression and insomnia were correlated with a low QoL. In another study dedicated to the exploitation of QoL, Holzner et al. (2004) were comparing the patients with leukemia, establishing that they scored significantly lower for all QoL dimensions compared to a control group (healthy individuals). The authors did not discover any differences in QoL dimensions between the patients with leukemia who initiated the chemotherapy compared to the ones who had already started it.

As already known, the QoL at patients with leukemia is affected by the appearance of depression and anxiety. These are common responses to a cancer diagnosis and subsequent treatment with anticancer medication. Often, the patients feel overwhelmed by this condition of cancer. During this research we were concerned by the following question: "If the QoL profile of the patients with acute leukemia is different than the one of the patients diagnosed with anxiety and depression disorders". We thus formulated the following two hypotheses: H1: The quality of life measured with WHOQOL is perceived differently depending on the diagnosed disease: acute leukemia, anxiety and depression. H2: The quality of life at patients with acute leukemia varies significantly depending on the phase of treatment.

2. Method

2.1. Participants and procedure

The total sample of the research consisted of 593 individuals hospitalized in a clinic for treatment, a percentage of 51.4% being men. Out of the total of individuals who had been medically investigated, a number of 327 were diagnosed with acute leukemia (LAL or LAM), thus following a chemotherapeutic treatment. Depending on the stage of the disease (initial, relapse and remission) the patients were divided into three groups, formed according to the criteria of the phase of the treatment: Induction group (N=117), Re-induction group (N=112), Maintenance group (N=98). The rest of the individuals represented the group of patients with psychiatric diagnosis of anxiety (N=135) and depression (N=131). The average age of the group with leukemia was of 51.16 years (Std.Dev.= 14.8), and for those with psychiatric disorders of 48.23 years (Std.Dev.=12.14).

2.2. Measures

A specialist hematologist diagnosed the cases of acute leukemia. The group of the patients with acute leukemia was made up only of individuals with LAL or LAM diagnosis. And a specialist psychiatrist diagnosed the cases of anxiety or depression, according to DSM-IV-R criteria. The individuals of this group received a specialized pharmacological treatment for one of the following diseases: anxiety disorder, panic disorder, generalized anxiety disorder, health anxiety (hypochondria), undifferentiated somatoform disorder, recurrent depression disorder with an average length duration episode. All the individuals were asked to fill in the questionnaire of the life quality assessment elaborated by the World Health Organization (WHOQoL). The questionnaire contains 24 items grouped on 4 domains (Physical health, Psychological, Social relations and Environment), the result being evaluated on the five-level Likert scale.

2.3. Data analysis

For testing our hypothesis we used the analysis of variance (ANOVA). More specifically we tested if the disease type (acute leukemia, anxiety and depression) differs significantly from the aspect of the level of the quality of life reported to the 4 dimensions operated on the WHOQoL scale.

Planned contrast was used to test the potential differences between the three groups, at the level of the first hypothesis, and between the three phases of treatment at the level of the second hypothesis.

3. Results

In the table below we are presenting the means and the standards deviations for the groups compared: acute leukemia (induction, re-induction, or consolidation), anxiety and depression.

Table 1. Mean level of WHOQOL dimensions for acute leukemia, anxiety and depression groups

Group	Physical health		Psychological		Social relations		Environment	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
aggregate level	17.31	5.31	18.78	5.74	8.77	2.89	19.93	5.41
Acute leukemia								
Induction phase	18.38	3.97	18.71	3.77	9.80	2.73	24.44	4.12
Re-induction phase	12.91	3.20	13.70	3.91	7.54	2.57	17.64	4.69
Consolidation phase	21.08	5.10	24.67	3.37	8.96	2.91	17.17	3.82
Anxiety	21.18	4.33	14.11	3.12	6.46	1.63	16.37	2.91
Depression	18.50	4.00	13.18	3.39	5.85	1.19	16.20	2.49

First hypothesis was confirmed by ANOVA results, as long as for all four dimensions of QOL there were discovered significant differences between the medical groups. Thus, the physical health was different across the three groups $F(2, 590) = 30.66, p < .001$, with an overall small effect size of $r = .31$. Planned contrast revealed that physical health is significantly lower in the group of acute leukemia compared to depression and anxiety group $t(590) = 6.32, p < .001, r = .25$, and significantly higher in anxiety group compared with depression group $t(590) = -4.51, p < .001, r = .18$.

The perceived psychological quality of life was different across the three groups $F(2, 590) = 85.06, p < .001$, with an overall medium effect size of $r = .47$. For the psychological dimension, planned contrast revealed a significantly higher quality of life reported by the group with acute leukemia, compared with anxiety and depression group $t(590) = -12.97, p < .001, r = .47$. The contrast between anxiety and depression group was insignificant $t(590) = -1.57, p > .05$.

The quality of social relations was different across the three groups $F(2, 590) = 92.59, p < .001$, with an overall medium effect size of $r = .49$. In this case planned contrast revealed a significantly higher quality reported by the group with acute leukemia, compared with anxiety and depression group $t(590) = -13.48, p < .001, r = .49$. The contrast between anxiety and depression group was also significant $t(590) = -2.08, p < .05$, but the effect was weak $r = .09$.

Finally, the quality of environmental conditions was also different across the three groups $F(2, 590) = 50.17, p < .001$, with an overall small effect size of $r = .38$. The contrast analysis revealed here a significantly higher quality reported by the group with acute leukemia, compared with anxiety and depression group $t(590) = -10.02, p < .001, r = .38$. The contrast between anxiety and depression group was insignificant $t(590) = -.31, p > .05$.

Regarding the second hypothesis the ANOVA results showed significant differences for all 4 dimensions of the quality of life assessment. Thus at the level of the dimension physical health the value was $F(2, 324) = 109.18, p < .001$, with an overall big effect size of $r = .63$. Planned contrast analysis performed in this case compared in the first place the induction and re-induction groups with the consolidation one, and secondly the induction group with the re-induction group.

For the physical health the first contrast was significant $t(324) = -10.93, p < .001, r = .52$, showing that the patients with acute leukemia in the consolidation phase present a better quality of life compared with the induction and re-induction groups. The second contrast was also significant $t(324) = -10.05, p < .001, r = .49$, proving a weaker quality of physical health for the patients in the re-induction phase.

For the perceived psychological quality of life, strong differences were obtained $F(2, 324) = 229.34, p < .001, r = .77$. Planned contrast revealed that the group of patients in the consolidation phase is significantly better positioned than the groups of induction and re-induction $t(324) = -18.94, p < .001, r = .72$. The contrast between these last two showed that the patients in the re-induction phase are reporting a weaker psychological quality of life than the ones in the induction phase: $t(324) = -10.23, p < .001, r = .49$.

A different configuration of the data was registered for the quality of social relations $F(2, 324) = 19.97, p < .001, r = .33$. In this case, the first planned contrast revealed that the patients with acute leukemia in the consolidation phase do not register better scores than those in the induction and re-induction phases $t(324) = -.877, p > .05$. The second planned contrast showed that the patients in the induction phase reported a better quality of social relations than the ones in the re-induction phase $t(324) = -6.27, p < .001, r = .33$.

Finally, for the quality of environmental conditions the ANOVA test emphasized significant differences $F(2, 324) = 103.01, p < .001, r = .62$. First planned contrast revealed that the patients in the consolidation phase perceive a weaker quality of the environment compared to the ones in the induction and re-induction phases $t(324) = 7.55, p < .001, r = .39$. The second planned contrast underlined the fact that the patients in the re-induction phase reported lower scores here than the ones in the induction phase: $t(324) = -12.11, p < .001, r = .56$.

4. Discussion and conclusions

The results of the research, with small exceptions, confirm the hypotheses we have initially formulated. Thus the quality of life perceived depends on the type of the disease. As expected, the physical aspect of the quality of life is perceived in a worse manner by the patients with acute leukemia and with depression. It is interesting the fact that the patients with acute leukemia are reporting better levels of the quality of mental, social and environmental life, compared to the patients with anxiety and depressive disorders. Still the supplementary comparisons made among the patients with acute leukemia, depending on the treatment phase, pointed out extremely powerful variations. As a rule, the group of patients in the re-induction phase is reporting a lower level of the quality of life for the first three of the total four dimensions of operated WHOQOL analysis. The differences obtained could offer an orientation to the psychotherapeutically intervention plans and the psycho – oncologic support at the patients suffering of acute leukemia.

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