Emotional Distress in Patients with Chronic Lymphocytic Leukemia Compared to the General Population

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Table of Contents

Abstract

Cancer has a massive impact on an individual's physical status, along with their mental health and quality of life. Chronic lymphocytic leukemia (CLL) is a disease that progresses more slowly than many other cancers, and attacks the immune system, making the patient very susceptible to disease. If the psychological symptoms of chronic lymphocytic leukemia are different or more prevalent than that of other cancers, it could change the way patients are treated. For example, treatment with a person who is more mentally unstable should include therapy, and a lower dose of chemotherapy, while for a mentally healthy person, therapy may not be needed, and a higher dose of chemotherapy could be tolerated. In this study, data was taken from a variety of individuals, those with CLL and those with no physical illnesses. This was done using specific tests used to determine the levels of depression, anxiety, stress, and psychological distress in the participants. The data was obtained by sending surveys to each of the individuals and recording their responses. The results from the data relayed that patients with chronic lymphocytic leukemia have increased levels of stress, anxiety, depression, and psychological distress. Patients with chronic lymphocytic leukemia may be able to be treated differently and therefore better, by accessing their mental health status when deciding on a treatment plan.

Introduction

This project studied the psychological symptoms of individuals with chronic lymphocytic leukemia compared to people without physical illnesses to find out if CLL patients have increased levels of depression, anxiety, stress, and a better or worse quality of life. This was done so more will be known about the psychological symptoms of CLL in the population. The main data set was based on the level of anxiety, stress, and depression that the patients have. There have been links made between the mental health of patients and the amount of medical attention needed to keep them healthy (Turner, 2000), which supports that when patients are sicker, they will have greater levels of depression, anxiety, stress, and a lower quality of life. The data was collected by contacting people online and recording their answers to a survey. This method is appropriate because it can get many people from a variety of races, backgrounds, and locations. As CLL is a chronic disease, people may adapt to it better, yet some may not be able to deal with and develop a psychiatric disorder over time (Turner, 2000). Cancer has a major toll on an individual, putting stress on their family, work, and friendships (Zabora, 2001). One of the major causes of depression or psychological distress is strained relationships with family or work. The second leading cause is an illness or disease that affects the quality of life, and the third being age (Lauber, 2003). Most patients diagnosed with CLL are between 60-70 years of age, therefore they must also deal with other oncoming health problems that come with age (Shanafelt, 2007). Additional stress to patients with CLL is not receiving treatment. The cancer is not treated until stage 3 (Holzner, 2004), which could instill anxiety into the patients as they wish more could be done. Along with not being treated, the risk of depression is greatest among cancer patients in the first year after diagnosis (Ringdal, 2019). With these many

risk factors combined, the risk for depression in patients with chronic lymphocytic leukemia gets much larger, resulting in increased rates of anxiety, stress, depression, and psychological distress.

Research question

To what extent are the emotional/psychological symptoms in patients with CLL different than that of individuals without cancer?

Methodology

Data was collected by sending a survey to various people within the community, half of which have chronic lymphocytic leukemia. The individuals were gathered by posting the survey on Facebook. 38 individuals responded, 9 have CLL, and 13 have no illnesses. These two groups were used in the data analysis, all other participants were discarded. The survey is composed of various tests used to professionally determine levels of stress, depression, anxiety, and psychological distress in an individual's life. This method is best because the data collected has a large variety, and therefore is able to be used for different studies. Individuals that participated in the survey included those with varying locations, backgrounds, races, economic status, illnesses, etc. The ages of the participants ranged from 50 to 80, as this is the general age range of patients with chronic lymphocytic leukemia, and as people get above the age of 90 their mental status generally starts to decrease, which would invalidate their data. Individuals in the survey included those with no chronic illnesses, CLL, and other cancers. Individuals who do not live in the United States were excluded as the varying political conditions, leadership, economy, and climate could have an influence on the physiological factors being tested. Individuals who participated in the survey were asked a series of questions, along with 4 mental health assessments. These assessments touched on levels of depression (PHQ-9), anxiety (GAD-7), stress (PSS), and overall psychological distress (K10). The PHQ-9 survey contains 9 questions, revolving around the symptoms of depression. One of the questions asked was ‘During the last two weeks, how often have you felt bad about yourself - that you are a failure or have let yourself or your family down?’. The answers for this survey consisted of ‘not at all’, counting for 0 points, ‘several days’, counting for 1 point, ‘more than half the days’, counting for 2 points, and ‘nearly every day’ counting for 3 points. The total results range from 0-27 points, 27 being the highest level of depression. The GAD-7 survey contains 7 questions, revolving around anxiety. One of these questions is ‘over the last two weeks, how often have you felt nervous, anxious, or on edge?’. The available answers for this survey is the same as the PHQ-9 survey. The total results range from 0-21 points, 21 being the highest. The PSS survey has 10 questions, revolving around major stressors in life and an individual's ability to handle them in a controlled manner. An example of one the questions asked is ‘in the last month, how often have you found that you could not cope with all the things that you had to do?’. The answers for this survey consisted of ‘never’ which counts for 0 points, ‘almost never’ which counts for 1 point, ‘sometimes’ which counts for 2 points, ‘fairly often’ which counts for 3 points, and

'very often' which counts for 4 points. The results for this survey range from 0-40 points, 40 being the highest level of stress. When adding up scores, questions 4,5,7, and 8 need to have reversed scores, as the questions are aimed more positively, an example being 'in the last month, how often have you felt that things were going your way?'. By reversing the scores, the opposite of what the question asks is presented, granting uniformity for the ending scores. The K10 survey contains 10 questions and incorporates symptoms of depression, anxiety, and stress into the questions. One of the questions asked is 'during the last 30 days, how often did you feel that everything was an effort?'. This question specifically incorporates similar symptoms from anxiety, stress, and depression, as they all make simple things feel like an effort. The answers for this survey were 'none of the time', counting for 1 point, 'a little of the time' counting for 2 points, 'some of the time' counting for 3 points, 'most of the time' counting for 4 points, and 'all of the time' counting for 5 points. Scores range from 10-50, 50 being the highest. This test is often used as it can be a gateway to diagnosing other mental diseases that cause psychological distress. As displayed in the question and answer examples, the questions were often personal and therefore were sufficient in getting true and accurate results. The scores of each participant were calculated, then rounded into a mean score with the other individuals in the same group. Groups were divided based on whether they had chronic lymphocytic leukemia or any outstanding physical illnesses. Group 1 contained individuals with chronic lymphocytic leukemia and group 2 contained those who had no illnesses. Other participants who had physical illnesses were excluded from the data, as the control group was composed of those with no medical problems.

Results

Patients with chronic lymphocytic leukemia display significantly worse mental health

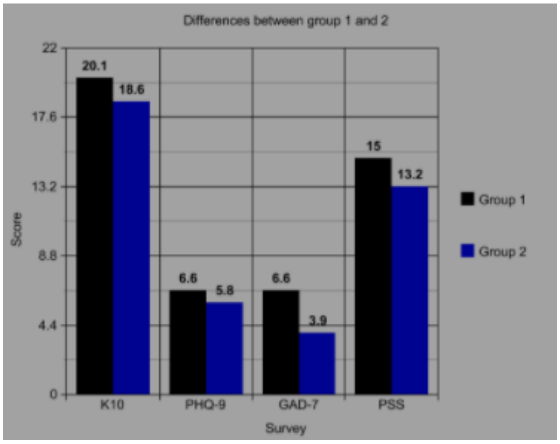
then patients with no chronic diseases or physical illnesses. Group 1 displayed elevated scores, which are displayed in Table 1

Total mean scores for groups 1 and 2

Survey	Group 1	Group 2
K10	20.1	18.6
PHQ-9	6.6	5.8
GAD-7	6.6	3.9
PSS	15.0	13.2

Table 1

The K10 survey displayed a difference of 1.5 points, and the mean score of 20.1 for group 1, while group 2 got a mean score of 18.6. The PHQ-9 survey displayed a difference of 0.8 points, and a score of 6.6 for group 1, while group 2 came with a mean score of 5.8. The GAD-7 survey had a significant difference of 2.7 points between the groups, which signified a greater difference than the other surveys. The PSS survey had a difference of 1.8, with 15.0 for group 1 and 13.2 for group 2. The surveys had a general difference of 1.7 points, which charts a significant difference in mental health between the groups. The data difference is shown in graph 1.



Graph 1

Discussion

Group 1 displayed higher scores than group 2, which are shown in Table 1. The K10 survey, which assessed the psychological distress of an individual showed that most of group 1 fell into the mild-severe psychological distress range, while group 2 fell mostly into the no or mild distress. The PHQ-9 survey evaluated the presence of a depressive disorder in the participants. While both of the groups fell into the mild category, there were outliers in the data set which brought group 1 down. There were several participants out of the ordinary who brought both groups down and up. This would have been solved with a larger data sample. The GAD-7 survey accessed general anxiety within the participants. Group 1 resulted in a score of 6.6, which falls into the higher end of the mild category, while group 2 had a 3.9, which falls into the lower end. The PSS survey analyzed daily stress in individuals. Group 1 qualified for moderate stress, while group 2 fell into low stress. The reasoning for these results can be attributed to the way chronic lymphocytic leukemia works, as it is a chronic disease, allowing individuals suffering from it to have more time to accept what is happening to them and come to terms with it. The survey with the biggest point gap was the GAD-7 survey. This is most likely because chronic lymphocytic leukemia makes an individual very prone to illnesses, infections, or diseases. Dealing with the worry of getting a fatal disease can exacerbate one's levels of anxiety and stress, therefore getting higher scores on the survey.

Conclusion

Patients with chronic lymphocytic leukemia generally present higher levels of anxiety, depression, stress, and psychological distress than individuals with no physical diseases.

Significance of findings

Patients with chronic lymphocytic leukemia tend to have higher rates of depression, anxiety, stress, and psychological distress, making it an important factor in treatment. When treating a patient for CLL, it is important to access their mental health, which could affect the aggression of treatments and could lead to incorporating complementary medicines, such as therapy, holistic nursing, or yoga. These treatments can help ease the stress and anxiety of dealing with cancer and can make the patient more ready for aggressive treatment.

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