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Naturopathic Cancer Treatment: Associated with Increased Quality of Life

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Abstract: The purpose of this investigation was to assess the effects of an individualized naturopathic treatment plan on the overall quality of life (QOL) of cancer patients as pertaining to fatigue, pain and overall mood. Twenty-two male (n = 10) and female (12) cancer patients ranging in age from 32 to 82 years-of-age volunteered from a cancer rehabilitation center in Kalispell, MT. Subjects were given the option to utilize a naturopathic treatment option via their physician. Each subject completed a FACT-G questionnaire at the beginning and the end of the study. This short survey asked the subjects a range of questions pertaining to subscales including personal well-being (PWB), social well-being (SWB), emotional well-being (EWB), functional well-being (FWB) and total score. A Dependent t-test was used to examine whether difference (s) existed within the cancer patients from pre to post survey scores ($P < 0.05$). Significant differences were found in PWB, SWB, EWB and total score ($P < 0.05$). In all categories, the QOL subscales favorably increased from the pre to post values. These findings demonstrate that naturopathic rehabilitation can be a positive alternative treatment for cancer patients undergoing therapy.

Key words: Naturopathic, cancer, quality of life.

1. Introduction

Cancer is a general term for a group of over 100 different types of diseases. Although there are numerous types of cancer, they all start due to abnormal cell growth which becomes ramped in the body [1, 2]. The most common types of cancer treatment include surgery, chemotherapy radiation therapy and photodynamic therapy [1, 3, 4]. Other options are utilized less often include hyperthermia therapy, targeted therapy, stem cell transplant and laser treatments [1]. In addition to such procedures mentioned, naturopathic medicine can be implemented which incorporates whole body lifestyle adaptations nutrition, herbs, manipulation of the body, exercise, stress reduction and acupuncture [5].

Naturopathic medicine is a complete alternative care system that uses a wide range of approaches such as nutrition, herbs, manipulation of the body, exercise, stress reduction, and acupuncture. Parts of naturopathy are sometimes used as complementary therapy along with mainstream medicine. Naturopathic medicine is a holistic approach (meaning it is intended to treat the whole person) that tries to enlist the healing power of the body and nature to fight disease [5, 6].

Naturopathic medicine shows varied degrees of effectiveness. Naturopathic interventions such as homeopathy has shown in research to not be helpful in a cancer population, on the other hand, evidence strongly concludes that nutritional changes produce positive results. The present study will investigate the effects of an individualized naturopathic treatment plan on the overall QOL of cancer patients as pertaining to fatigue, pain and overall mood.

2. Methods

2.1 Participants

A total of 22 newly diagnosed subjects were included in the study, 12 females and 10 males. None of subjects prior to beginning the study had received cancer treatment, traditional or other forms. The subject's demographic information is listed in Table 1.

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2.2 Procedure

Two types of data collection tools/techniques including the FACT-G questionnaire and a semi-structured interview. Each subject completed a FACT-G questionnaire at the beginning and the end of the 12 week study. This short survey asked the subjects a range of questions pertaining to their overall health status, mood, pain/fatigue and symptom severity. The surveys were reviewed by the investigator to increase understanding of the baseline QOL values. Furthermore, patient related outcome measures (PRO's) were used as a form of QOL analysis in the form of a semi-structured interview.

2.3 Statistical Analysis

Scores from the study were analyzed using a dependent t-test (Table 2) and pre and post mean data (Table 3). A level of $P \leq 0.5$ significance was established for testing the validity for the obtained results. Data was analyzed using the SAS software JMP version 11.

3. Results

The survey looked at QOL increases associated with naturopathic treatment options amongst cancer patients also receiving traditional treatment. Descriptive statistics were used and are presented in table form. A chi dependent t-test was ran between the pre and post survey scores of numerous subscales including personal well-being (PWB), social well-being (SWB), emotional well-being (EWB), functional well-being (FWB) and total score to see if there the addition of naturopathic treatments aided QOL. The intent of this study was to determine the effectiveness of naturopathic treatment of cancer patients in relation to increased QOL pertaining to pain/fatigue symptom reduction and overall mood

The 27 question survey was graded based on a score sheet formulated by the makers of FACT-G. The 27 questions were split into 4 sections all with varying amounts of questions: PWB, SWB and FWB had 7 while EWB had 6. As displayed in Table 2, PWB, SWB and FWB had a total of 28 points, EWB had a total of 24 potential points and the total possible points was 108 (70). On the FACT-G version 4 score sheet the answer was to be recorded in the "item response" column. The next step was to perform the reversal, formulated addition or subtraction, and sum individual items to get a score. Next the scorer had to multiply the sum of the item scores by the number of items in the subscale, then divide by the number of items answered which produces the subscale score. Lastly, addition of the subscales was performed to receive the total FACT-G score. The higher the total score the better in associated QOL.

Table 2 shows the normative scoring ranges for each subscale and the total score being measured by the FACT-G survey. These score ranges were calculated by a group of statisticians when the FACT-G was formulated. Looking at the ranges the higher the score, the better the associated QOL.

Table 3 displays the average scores for the pre and post trials of the scoring subscales and total score with the sample size ($n = 22$). The mean difference values all showed increases in the post-mean values. The following QOL increases were shown: PWB by 2.19 points, SWB by 1.13 points, EWB by 0.93 points, FWB by 2.19 points and total score by 6.43 points. In all categories the QOL score increased from the pre to post values. These values all show positive trends and significance of increased QOL amongst the subjects.

Table 1 Subject demographic.

N	Males/Female	Age Range (yrs)
22	10/12	32-48 ($N = 4$) 49-65 ($N = 8$) 66-82 ($N = 10$)

Table 2 Score ranges of FACT-G SUBSCALES and total scores.

PWB	0-28
SWB	0-28
EWB	0-24
FWB	0-28
Total	0-108

Table 3 Average scores for the pre and post trials of the scoring subscales and total scores.

	PWB	SWB	EWB	FWB	Total
Total Sample (N = 22)					
Pre-Mean	19.52	22.63	18.71	16.33	77.23
Post-Mean	21.70	23.76	19.64	18.52	83.67
Mean Difference	2.19*	1.13*	0.93*	2.19*	6.43*

*($P < 0.05$).

Table 4 FACT-G Subscale T-ratio results.

FACT-G Scales	PWB	SWB	EWB	FWB	Total Scores
T-Ratio	2.62*	2.11*	1.98*	-1.02	3.68*

*($P < 0.05$) and ($P < 0.01$).

Table 4 displays the results of the dependent t-test including the t-ratio. This data represents significance amongst each subscale and the total score. In addition, the t-ratios values from the dependent t-test showed significant in almost every scale and subscale at both the 0.05 and 0.01 significance levels. According to the T-distribution critical values table, the t-ratio needed for a population of 22 subjects to show significance at a 0.05 and 0.01 is 1.72. Using that value in comparison to the t-ratios obtained for the four subscales and total score of the FACT-G form were as followed: FWB: -1.02, EWB: 1.98, PWB: 2.62 SWB: 2.11 and total score: 3.68.

4. Discussion

The current study compared the pre and post QOL values of cancer patients receiving traditional treatment such as chemotherapy in addition to naturopathic treatment. It examined the total score of the FACT-G survey and four subscales of QOL including PWB, SWB, EWB and FWB. A dependent T-test was conducted to identify reliability and significance of the study.

An additional study which utilized the FACT-G survey conducted by Brucker et al [7] which looked at mixed cancer QOL norms in relation to a non-cancerous population. Brucker et al [7] used dependent t-test statistics and focused on mean interpretation to show positive trends which pointed to increased overall QOL. The mean values of the scores were as followed: PWB—21.3, SWB—22.1, EWB—18.7, FWB—18.9 and total score—80.9 [7]. These values compare to those of the current study PWB—19.52, SWB—22.63, EWB—18.71, FBW—16.33 and total score—77.23 [7]. The two mean data sets display some variation, however, due to the mixed cancerous populations data differences are unavoidable. The authors further explained the need for individual interpretation of differences or changes of scores/statistics and whether the reported differences are statistically significant.

The Brucker et al [7] study had many similarities to the current study including a mixed cancerous sample, use of an internal control group and small mean differences illustrated in the subscale and total score results. The means of the current study helped to identify a positive trend of score increases from pre to post among the mean scores, and a significant difference noted in the dependent t-test analysis. Much like the Brucker et al [7] study, these trends can be

interpreted different ways related to increased QOL.

Similarly to the Brucker et al [7] study, Cella, Hahn and Dineen [8] conducted a study which utilized parametric statistics to illustrate significance of QOL increases using the FACT-G questionnaire amongst a mixed cancerous population [8]. Both studies utilized the dependent t-test to assess the ability of the FACT-G subscales and total scores to differentiate variable of the subscales amongst experimental groups. The baseline means for both studies proved to be similar. The average mean difference being within both data sets equaled less than 2 points in the subscales and total scores. Additionally, in both studies only small difference were seen in the subscales scores [8]. This small difference in the scores is similar to the parametric statistics ran in the current study.

Further research on naturopathic medicine as a whole is needed to elaborate on the QOL benefits associated with naturopathic cancer treatment option. Since the results of the dependent t-test were significant, this may mean there is a more important use for naturopathic cancer treatment than some may think. The results show an increase in overall quality of life and on a larger scale this means viable treatment options are available for cancer patients undergoing additional treatment. Further research is warranted, however positive stats reveal hope for cancer patients and their loved ones.

5. Conclusion

Considering the limitations of this analysis the following conclusions can be drawn from the results of this study: QOL improvements were evident in the dependent t-test data and positive trends were also displayed in the pre and post mean data. The FACT-G and semi-structured phone interview was a desirable way of measuring an individual's QOL. More research needs to be conducted in this field to discern the effects of naturopathic treatment options of the QOL of cancer patients.

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