

The Effect of Positive Psychotherapy on the Meaning of Life in Patients with Cancer: A Randomized Clinical Trial

Batool Saeedi, Zohreh Khoshnood¹, Mahlagha Dehghan¹, Farokh Abazari¹, Ali Saeedi²

Nursing and Midwifery School, Kerman University of Medical Sciences, ¹Nursing Research Center, Nursing and Midwifery School, Kerman University of Medical Sciences, Kerman, ²Islamic Azad University, Psychology Department, Zarand, Iran

Abstract

Background and Aim: Cancer, as a social phenomenon, disrupts the daily functions and social activities of a person and changes his ability to perform roles and responsibilities and reach the meaning of life. The purpose of this study was to investigate the effect of positive psychotherapy on understanding the meaning of life in patients with cancer. **Materials and Methods:** This was a randomized clinical trial study. Sixty-one patients with cancer were selected by convenience sampling method and were assigned randomly into two positive psychotherapeutic ($n = 30$) and control ($n = 31$) groups. Positive psychotherapy included eight 90-min sessions held weekly in group form. The life attitude profile-Gary Reker was completed before and after the intervention. **Results:** The results showed that there was no significant difference between the mean scores of meaning of life and all its dimensions (purposes, existential vacuum, death acceptance, goal seeking, coherence and responsibility choice) before intervention, but there was a significant difference between the two groups after intervention ($P < 0.05$). Also in the control group, the mean score was reduced after the intervention. **Conclusion:** The positive psychotherapy is effective in increasing the level of meaningful life, enjoyable and committed life of people with cancer. Therefore, based on the results of this study, health-care managers can plan to train and increase the empowerment of nurses in providing these interventions to patients in need.

Keywords: Cancer, meaning, nurse, patient, positive psychotherapy

INTRODUCTION

Cancer is one of the major health problems in the world as well as in Iran.^[1] It is estimated that more than 15 million new cases of cancer worldwide will have been detected by 2020.^[2] On the other hand, with an increase in life expectancy and an increase in the percentage of aging, the incidence of cancer in the next decade is expected to increase sharply. This situation, while imposing a high burden on the health system, will have a psychological and economic impact on the family and society.^[3]

There are many illnesses that, despite being fatal, more painful and more dangerous than cancer, do not induce the horror of the word, cancer. This fear, in turn, causes stress and neuropsychological pressures and undesirable effects on the body and the psyche of the patient.^[4,5] The range of these disorders varies from depression, anxiety, incompatibility with the disease to emotional disturbances, and fear of recurrence of illness and death. Such symptoms cause harmful effects, such as a decrease in quality of life, a negative impact on the

patient's capacity to accept physical treatments, reduction of the resiliency and life expectancy, reduction of survival and ultimately, the meaninglessness of life.^[6,7] This sense of meaninglessness in life leads to absurdity and existential vacuum, in such a way that one quits trying to create a purposeful life.^[8-11] In this case, the person is uncertain and faces the concern that cancer has endangered his life.^[12] Thinking about this issue and trying to understand it, get sick patients to ask questions such as why I got sick? If I am going to die, why am I born? What is the reason for being alive? What is the meaning and purpose of life? What is my place in the world? And who am I? Subsequently, the person's opinion about the meaning of life will change.^[13] Reker has put forward

Address for correspondence: Dr. Zohreh Khoshnood, Nursing Research Center, Razi Nursing Faculty of Nursing and Midwifery, Kerman University of Medical Sciences, Kerman, Iran. E-mail: z.khoshnoud@kmu.ac.ir

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the meaning of life in five dimensions which are life purpose, death acceptance, freedom and responsibility, existential vacuum, and goal-seeking.^[11,14,15] Cancer patients experience five existential concerns, including death, separation, identity, freedom, and meaning. All matters, except the meaning of life, have a positive relationship with depression and existential thinking, and meaning-seeking represents positive existential thinking as well as a sense of purposefulness, coherence, satisfaction, and value of life in a person.^[14,16] Increasing the meaning in life is to expand thoughts and change the angle of vision, and makes the person aware that if he cannot change the certain events of his life, but he can learn to choose another way to confront them. For example, in the face of incurable illness, cancer or aging condition, one must try to change himself.^[8,17-20]

In this regard, Frankl believes that the understanding of the meaning of life in those who face a terrible phenomenon such as death can provide them with incredible courage for death.^[21] Therefore, in new ways of psychotherapy, in addition to restoring the patient for work and enjoyment of life, it is tried to help the patient tolerate his illness by understanding the meaning of the pain he is suffering from.^[20] Thinking and how to think are an essential part of human life. Negative thinking can affect the human mind, the emotions, and the body; therefore, if one wants to change his feelings, it is enough to change his thoughts and feel pleasure and happiness.^[22,23] Positive psychology focuses on improving well-being and desirable performance and includes concepts such as beauty, appreciation, kindness, promotion of positive relationships, and the pursuit of hope and meaning in life.^[24] According to studies, negative thoughts reduce the mood of the patients, which leads to the continuation of depression in the individual. Therefore, the practice based on positive psychotherapy programs, in addition to eliminating the effects of negative emotions, encourages more effective strategies to cope with problems. The expression of emotion is encouraged in the individuals, make them feel positive about themselves and their abilities, make them satisfied and happy in the life and reduce pain, suffering, and pessimism. It also affects the reduction of stress in cancer patients and encourages the expression of feelings, and searches for pleasure, as well as attempts to search for meaning.^[25-29] Considering the prevalence of cancer in Iran and the impact of cancer on the formation of psychological disorders and reduction of the meaning of life, interventions to improve these disorders must be presented to patients. Individual and group psychological treatments can be effective in the adaptability and recovery of these patients. Therefore, this study aimed to determine the effect of positive psychotherapy education on understanding the meaning in the life of cancer patients in Kerman city.

MATERIALS AND METHODS

Study design and setting

It is a randomized clinical trial intervention. The statistical population included all patients with cancer who referred to

centers affiliated to Kerman University of Medical Sciences. Moreover, the study site of the association for the support of patients with cancer “Yas.”

Sampling and sample size

The inclusion criteria include being able to answer the questions, not having a particular mental illness, being over the age of 18 years and suffering from at least one type of cancer. Sixty-two individuals participated in the study by convenient sampling method, and they were assigned randomly into the groups based on age, sex, and duration of the disease (31 in the intervention group and 31 in the control group). It is worth noting that one of the patients in the intervention group died and the intervention group became 30. The randomization process done with simple random sampling method for choose patients in the trial and control groups.

Measurements

Two questionnaires were used to collect information. The first questionnaire included demographic information that measured age, sex, marital status, economic status, occupation, level of education, the location of cancer, and duration of the disease. The second questionnaire was the life attitude profile-Gary Reker that has been provided by Reker and Peacock.^[30] This questionnaire is a 6-point Likert scale ranging from zero (strongly disagree) to 6 (strongly agree). This scale had 47 items with six dimensions including: “life purpose” (11 items), “existential vacuum” (9 items), “death acceptance” (6 items), “goal seeking” (6 items), “coherence” (5 items), and “choice/responsibility” (5 items).^[31] The validity of this scale has been measured in Iran by Ghaffari *et al.* (2016) in Iran. Reliability of the instrument was 0.81, and the content validity index was 0.99% through the test-retest. The participants responded to the questionnaire before and after the intervention.^[31]

Intervention

The intervention group received positive psychotherapy. Positive psychotherapy sessions included eight 90-min training sessions run by a psychologist. The structure and content of the sessions were designed and implemented according to Seligman and Rashid protocol (2006) for the intervention group [Table 1]. In addition, the control group received the routine care.

Ethical considerations

We received the code of ethics from the Ethics Committee of Kerman University of Medical Sciences (IR. KMU. REC.1396.2026) and clinical trial code from the Iranian Clinical Trials Registry (IRCT20180517039696N1). Furthermore, participants entered the study with complete knowledge and consent. The participants were told that their information would be completely confidential. The participants could leave the study whenever they wished. The results of the research were presented to related centers for their use in clinical settings, and after the completion of the work and the identification of its effectiveness, this intervention was also conducted for the control group.

Table 1: The sessions based on the treatment protocol of Rashid and Seligman (2006)

Session number	Objective	Practice
One	Taking an introduction of patients, Describing how to do the project, the reason for selection of people	Familiarity with the concept of positive thinking, the group and the rules governing it
Two	Familiarity with the formation of the thinking and positive attitude and record of one's abilities by himself	Identifying personal abilities, familiarizing with the classification of abilities, moral virtues and the use of personal abilities in a new way
Three	Getting acquainted with negative thoughts and ways to adjust it, the impact of positive thinking on health and longevity of people, mention of blessings with the reminder of three good things in daily life	Embedding positive emotions and mentioning the blessings and good things in life
Four	Teaching to be positive by challenging negative thoughts, changing mental images, using constructive language, and revising beliefs	Reviewing whether writing three good things or three blessings, and the emphasis on positive thoughts and memories during the past week have had a positive effect
Five	Teaching to be positive by institutionalizing, continuing to practice on positive thinking opportunities through coping with problems that they cannot solve. Use of worksheet related to thanksgiving	Focusing on Thanksgiving, as well as examining the role of bad memories
Six	A positive living test by creating a positive relationship, establishing good relationships with people around you, and loving oneself wholeheartedly	Writing the advancement of the clients in the booklet and the letters of forgiveness and thanksgiving and the use of their capabilities
Seven	Being positive by learning how to stop thinking, relaxing, and changing attitudes such as the requirement to inhibit and challenge	Focusing on hope, faith, and optimism. Practice by writing three events or three things they wanted to do but they failed, then try to solve them
Eight	Entering laughter in life, creating self-confidence and creating the habit of exercising	Teaching responsiveness style and how to improve relationships. Completion of questionnaires by participants

Statistical analysis

For data analysis, Spss version 15-SPSS Inc. 233 South Wacker Drive, 11th Floor Chicago, IL, USA was used. In the beginning, the homogeneity of the two groups was studied regarding the studied variables using the Chi-square test. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used for descriptive purposes. Before analyzing the data, the normal distribution of data was studied using Kolmogorov and Smirnov tests. Data were normal and independent *t*-test and paired *t*-test were used.

RESULTS

There were no significant differences between the two intervention and control groups regarding underlying variables ($P > 0.05$) [Table 2].

The total score of meaning of life was reduced 4.06 scores after intervention in the control group while it increased 55.7 scores in the intervention group ($P < 0.001$). The mean scores and standard deviation of the dimensions of the meaning of life in both groups before and after the intervention show that there was no significant difference in the baseline scores between the two groups ($P > 0.05$), but there was a significant difference after intervention ($P < 0.001$). Also in the control group, the scores of all dimensions of the meaning of life decreased compared to before intervention [Table 3].

DISCUSSION

This research was conducted with the aim of determining the effect of positive psychotherapy education on understanding

the meaning in the life of cancer patients in Kerman city in 2017–2018. The hypothesis showed that positive psychotherapy has a significant effect on the dimensions of the in cancer patients. The results of this study are consistent with previous studies demonstrated the effectiveness of positive treatment. The comparison of the mean score of “life purpose” before and after intervention in the control and intervention groups showed the effect of positive psychotherapy on the life expectancy and purposeful life in these patients. Low scores of the life purpose in these patients are consistent with the study of Issazadegan *et al.*,^[32] meaning healthy people have stronger goals and meanings in life compared to cancer patients.^[32] Cancer patients have low happiness, pleasure, hope, and purposefulness. Therefore, positive psychotherapy can affect them and increase their life expectancy and life purposes.^[33]

According to the results of this dimension, the present study is also consistent with the studies of Kuk and Guszowska (2018),^[28] Oleś and Jankowski(2018),^[29] and Pourfaraji and Rezazadeh (2019),^[33] Karimi and Shariatnia (2017),^[34] Safaei *et al.* (2008),^[35] Bagheri Zanjani *et al.* (2016),^[4] Zanjiran *et al.*(2015),^[36] Taleblo and Zakeripour (2013),^[37] Kamari and Foolad Changh (2016),^[38] Afrooz *et al.*, (2018),^[39] and Wu *et al* (2013).^[40]

The comparison of the mean score of “existential vacuum” before and after the intervention in the control and intervention groups showed the effect of positive psychotherapy on the existential vacuum in these patients. The meaning of life is the main motive of life, which its absence leads to an existential challenges that lead patients to suicide and depression.^[41] Cuijpers *et al.*^[42] and Breitbart *et al.*^[43] concluded

Table 2: Distribution of underlying variables in the control and intervention groups

Variable	Group				Mann–Whitney U-test	Significance
	Control (31)		Intervention (30)			
	Mean	SD	Mean	SD		
Age (year)	47.87	11.78	47.53	14.41	−0.37	0.71
Disease duration (month)	60.35	34.80	68.30	42.46	−0.56	0.58
	Frequency (%)				Chi-square test	Significance
	Control		Intervention			
Sex						
Male	2 (6.5)		2 (6.7)		0.001	>0.99
Female	29 (93.5)		28 (93.3)			
Marital status						
Single	3 (9.7)		2 (6.7)		0.31	>0.99
Married	24 (77.4)		24 (80)			
Widow/divorced	4 (12.9)		4 (13.3)			
Education						
High school	10 (32.3)		7 (23.3)		1.34	0.51
Diploma	12 (38.7)		16 (53.3)			
Higher	9 (29)		7 (3.23)			
Job						
Unemployed	22 (71)		20 (66.7)		0.13	0.72
Employed	9 (29)		10 (33.3)			
Economic status						
Poor	7 (22.6)		6 (20)		0.06	>0.99
Moderate	24 (77.4)		24 (80)			
Location of cancer						
Breast	17 (54.8)		20 (66.7)		0.89	0.34
Others	14 (45.2)		10 (33.3)			

SD: Standard deviation

that psychotherapy methods were significantly more effective on obsessive–compulsive disorder, depression and anxiety than medication therapy and this treatment is more effective on existential suffering, existential vacuum, and spiritual suffering of advanced cancer patients compared to other therapies^[42,43] Vehling *et al.*^[44] also found that meaning-centered therapy interventions had an effect on existential suffering and the sense of existential vacuum in a patient with cancer, and can have a positive effect on the facilitation of their personal meaning and promotion of psychological adjustment, and they support them with an uncertain and potentially anticipated future.^[44] With this regard, the present study is consistent with studies by Oleś and Jankowski, Kuk and Guskowska.^[28,29]

The mean score of “death acceptance” before and after intervention in the control and intervention group indicates the effect of intervention and reduction of death anxiety in these patients. One of the problems that cancer patients face even after the end of the treatment period is a health concern and a fear of death, which, due to its ambiguous nature, presents a threat to many people, especially in patients with dangerous diagnoses, such as cancer, who inevitably face with their own death.^[45,46] Moreover, the cultural influences of these patients may affect the acceptance of death.^[47] Furthermore, Grossman *et al.*^[48] also showed in their systematic study that interventions that target

the meaning in life have a more significant effect on the death anxiety of these patients.^[48] In this direction, the studies of Long *et al.*, Soleimani *et al.*, Borjali *et al.*, Hajiazizi *et al.*^[21,47,49,50] are consistent with the present study. Unlike current studies, the results of^[28] are not consistent with the current study. Hence, the impact of participation in the psychology workshop of “Love Forgiveness” was ineffective on the meaning in the life of Polish students in the dimension of the life acceptance of students.^[28] This discrepancy can be due to differences in the cultural type and context of the subjects being studied. The comparison of mean scores of “goal seeking” before and after intervention in the control and intervention group indicated the effect of positive psychotherapy education on this dimension. Having meaning in life is associated with physical health and physical well-being is the basis of the goal in life.^[51] Therefore, the detection of cancer causes disappointment, fear and anxiety, change of mental image, and a reduction in the resilience and absurdity of these individuals.^[52] According to a study by Sanders *et al.*,^[53] patients who participated weekly in supportive sessions with guidelines such as the expression of positive emotions and experiences and training on the tumor function had more effective improvement than the control group, and their survival was significantly increased.^[53] The results of Kuk and Guskowska^[28] in this dimension are not consistent with that of the present study.^[28] The main motive and purpose of life are

Table 3: Mean scores of dimensions of meaning in life before and after intervention in two groups of control and intervention

Meaning of life and its dimensions	Group time	Before intervention		After intervention		Paired- <i>t</i> -test	<i>P</i>	Score difference before and after intervention	
		Mean	SD	Mean	SD			Mean	SD
Life purpose	Control	35.35	12.93	34.52	12.29	1.66	0.11	-0.84	2.8
	Intervention	39.1	12.22	53.47	8.67	-8.27	< 0.001	14.37	9.52
	Statistic test	<i>t</i> =1.16		<i>t</i> =6.94				<i>Z</i> =-6.51	
	<i>P</i>	0.25		<0.001				<0.001	
Existential vacuum	Control	20.67	9.54	19.70	8.80	-2.08	0.46	-0.98	2.59
	Intervention	24.26	9.48	43.20	4.90	10.93	< 0.001	18.93	9.49
	Statistic test	<i>t</i> =12.80		<i>t</i> =1.47				<i>Z</i> =-6.27	
	<i>P</i>	0.146		<0.001				<0.001	
Death acceptance	Control	22.03	5.14	21.16	5.41	-3.33	0.002	-0.87	1.45
	Intervention	22.60	5.76	27.83	4.92	5.24	< 0.001	5.47	1.0
	Statistic test	<i>t</i> =5.03		<i>t</i> =0.4				<i>Z</i> =-4.98	
	<i>P</i>	0.68		<0.001				<0.001	
Goal seeking	Control	23.25	5.23	22.50	5.07	-2.83	0.008	-0.77	1.52
	Intervention	24.66	4.07	31.53	2.65	9.04	< 0.001	6.87	4.16
	Statistic test	<i>t</i> =1.17		<i>t</i> =8.69				<i>Z</i> =-6.45	
	<i>P</i>	0.24		<0.001				<0.001	
Coherence	Control	20.25	5.20	20	4.91	-0.84	0.40	-0.26	1.69
	Intervention	21.80	4.82	25.96	2.73	6.35	< 0.001	4.17	3.59
	Statistic test	<i>t</i> =1.19		<i>t</i> =5.83				<i>Z</i> =-5.46	
	Significance	0.23		<0.001				<0.001	
Choice/responsibility	Control	15.45	5.85	15.09	5.22	-1.06	0.29	-0.35	1.85
	Intervention	17.06	5.71	23.20	4.17	6.92	<0.001	6.13	4.85
	Statistic test	<i>t</i> =1.09		<i>t</i> =6.68				<i>Z</i> =-5.35	
	Significance	0.28		<0.001				<0.001	
Total	Control	137.03	32.28	132.96	31.4	-3.61	0.001	-4.06	6.26
	Intervention	149.5	29.03	205.2	17.71	14.46	<0.001	55.7	21.1
	Statistic test	<i>t</i> =1.58		<i>t</i> =11.01				<i>Z</i> =-6.62	
	Significance	0.11		<0.001				<0.001	

SD: Standard deviation, *t*: Independent *t*-test, *Z*: Mann-Whitney U-test

not to escape pain and enjoy life, but it is the meaning-seeking that gives life a real meaning. New methods of psychotherapy try to help the patient be more tolerant by understanding the meaning of suffering.^[18] Patients with cancer are using the avoidance coping more negatively and inappropriately, which means that they will avoid facing the problem in a harsh and difficult condition in order not to be affected. They, when faced with the problem, are trying to escape and clear the problem, which, of course, is not a good strategy and may even be a threat to their health.^[54] The comparison of the mean score of “coherence” before and after intervention in the control group and the intervention group indicates the effect of the intervention on this dimension of the meaning of life. Therefore, the study is consistent with that of Kuk and Guszowska, Oleś and Jankowski Kekäläinen *et al.*^[28,29,55] The sense of integrity reflects the general tendency of a person to life. The sense of coherence guides the person in finding and using resources to maintain health and manage stress. Moreover having a sense of integrity is a complement to plans aimed at protecting patients during treatment.^[56] According to the results of this study, the mean score of all dimensions of the meaning in life of the

control group has decreased which can be confirmed according to the studies of Soroush *et al* (2015), Masterson *et al.*(2018), Sharpe *et al.*(2018), Tang *et al.*(2011), and Lindblad *et al* (2018).^[56-60] The passage of time, unstable business, fear of recurrence of disease, being a woman and lack of purpose in life can be the reasons for the low score in this group. Are these variables measured? Since palliative care and psychotherapy are unofficial and unfortunately unsatisfactory in Kerman University of Medical Sciences, this can also be a reason for the low score of the meaning in the life of the control group who did not receive any intervention. Comparison of the mean score of “choice/responsibility” before and after intervention in the control and intervention groups shows the effect of positive psychotherapy education on this dimension of the meaning of life. By creating a sense of duty and responsibility, positive psychotherapy, helps them, instead of focusing on negative and disappointing thoughts, spend their energy and time on enriching and boosting the values and meaning of their lives. Death awareness increases the sense of responsibility of individuals for life. The result is that people who are aware of their own deaths do their best in the responsibility they have for

the life in all the time. With the knowledge of the flaws, they continue to live courageously.^[47] With this regard, the present study is consistent with the study by Kuk and Guskowska, Harder *et al.*^[28,61]

The comparison of mean scores of the meaning in the life of cancer patients before and after intervention in the control and intervention groups indicates that positive psychotherapy education has an impact on understanding the meaning in life in cancer patients. The thoughts we choose for our moments of life determine the results we will experience.^[52] If we decide to be happy, the first requirement for joy and happiness will be positive thinking. According to Carr,^[62] it is our thoughts that make our life happy or sad. When human thought is negative, the feeling is also negative, and with negative thinking and feeling, negative performance results. Humans, given their different thoughts, offer a different interpretation and analysis of the same situation. Some find that the situation is terrible, and some find it an unpleasant situation. If we are looking for joy, we should know that as each lock is opened with its own key, the lock of each problem is opened with its own solution. If we cannot solve a problem, we may be caught in repetition, that is, we expect a desirable outcome from repetitive solutions.^[62] Therefore, positive practices are entirely based on the same goal. For example, in several studies, the effectiveness of gratitude practice and the writing of gratitude letters have been confirmed in increasing the positive emotions, overall satisfaction of life and optimism. Furthermore, practice of three good things, practice of kindness and forgiveness, writing about a positive future, getting an unexpected gift, reading positive self-expression, remembering a positive event, or listening to music, in addition to eliminating the effect of negative emotions, have a high impact on the satisfaction with life and happiness and can reduce pain, suffering and pessimism in these patients.^[25,63] Furthermore, studies by Ochoa *et al.*, (2017),^[26] Cozaru *et al.*, (2014),^[64] Howell *et al.*, (2017),^[65] van der Spek *et al.*, (2017),^[66] Breitbart *et al.*, (2018),^[43] Manne *et al.*, (2015),^[67] Harder *et al.*, (2012),^[61] Casellas-Grau *et al.*, (2014),^[68] the studies of Afshari Moaser (2016),^[69] Mousavi *et al.*, (2015),^[5] Binaei *et al.* (2015),^[70] Haidarabadi (2014),^[71] Taimory *et al.*, (2015)^[72] Khodabakhsh *et al.*, (2015)^[73] Yazdanbakhsh *et al.* (2016),^[74] Lotfi Kashani *et al.* (2014),^[75] and khoshnood *et al.*, (2019)^[76] are also consistent with the results of this study on the effect of positive psychotherapy education on the meaning in life of patients with cancer.

In the present study, due to the limited statistical population, voluntary and convenient sampling was performed. Another limitation was the impossibility of using more questionnaires and more sessions in the present study due to the specific condition of the sample group. Failure to follow-up patients is another limitation of the present study. The research was done on a small sample group which is another limitation. Therefore, the use of larger sample groups is required. Fatigue and impatience caused by the nature of the disease reduced their willingness to participate in positive thinking sessions. Therefore, the sessions

were held when all of them were satisfied. Other researches such as hope-seeking interventions have an overlap with our study in the limitation and interventions.

CONCLUSION

Regarding the results of this study, it seems that positive psychotherapy has affected the attitude of individuals to life and has increased the meaning in patients. Since high levels of meaning in life have a positive relationship with physical and psychological well-being, positive thinking, and super social relationships, and positive emotions are a barrier to disease and an important factor for the elimination of depression, it can be concluded that positive psychotherapy reduces costs, improves the quality of care for cancer patients, and reduce hospitalization. Therefore, the choice of this type of treatment for those who face seriously with the phenomenon of death was considered appropriate by the researchers of the present study. It is suggested that the current study be repeated on other groups and samples even in the country. Age groups and a specific type of cancer should be taken into account so that the resulting conclusions can be more generalized to the same extent.

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Conflicts of interest

There are no conflicts of interest.

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