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Lung Cancer-Related Emotional Growth:

The Role of Coping Styles and Prior Trauma

By

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Abstract

The objective of this study was to explore the relationship of prior traumatic history, coping styles, and post-traumatic emotional growth in participants diagnosed with lung cancer. Participants (n = 40) completed baseline questionnaire packets as part of their initial entry into the ongoing study "Understanding the Prognostic Significance of Circadian Disruption in Lung Cancer." Linear hierarchal regressions adjusted age at diagnosis, stage, and household income. Analyses revealed no relationship between traumatic history and post-traumatic emotional growth. However, lung cancer patients who endorsed active coping styles were significantly more likely to report post-traumatic emotional growth. Secondary analyses revealed this relationship appeared to be driven by data from subjects of male gender. The encouraging nature of this finding has potential clinical implications, including contributing to the knowledge that coping styles have a relationship with potential emotional growth in a traumatic event and promotion of active coping in therapeutic settings.

Lung Cancer-Related Emotional Growth: The Role of Coping Styles and Prior Trauma

Current statistics from the American Cancer Society state that lung cancer is the second most common cancer for both men and women. Lung cancer accounts for approximately 27% of all cancer deaths and is the leading cause of cancer death among both men and women. Each year, more people die of lung cancer than of colon, breast, and prostate cancers combined. Survival rates vary greatly among the different stages of lung cancer from 49% for stage IA to 1% for stage IV (American Cancer Society, 2015). Given the traumatic nature of a lung cancer diagnosis and acknowledgement that quantity of life may be shorter, quality of life becomes even more important. It becomes essential to look at the psychological well-being and quality of life of the patient and the potential for emotional growth post-diagnosis and during treatment.

The intent of this study was to explore the relationship between prior traumatic history, coping styles, and post-traumatic growth in participants in the ongoing study "Understanding the Prognostic Significance of Circadian Disruption in Lung Cancer and Piloting an Intervention." This thesis will explore the cancer-related emotional growth as defined by the Post-Traumatic Growth Inventory (PTGI). This inquiry explores the notion that the person's coping style could be related to emotional growth, related to the cancer experience.

Coping styles are defined as a person's responsive approach toward stressful information (Roth and Cohen, 1986). This finding is important in this study as the person's style or approach toward a traumatic event has been shown to have implications in latent emotional growth following a stressor. A study by Pineles et al. (2011) found that "individuals who are relatively highly reliant on avoidant coping strategies and relatively highly reactive to trauma reminders may be at greatest risk of maintaining or potentially increasing their PTSD symptoms within the

first few months following the trauma" (Pineles et al., 2011). This study emphasizes the importance of the style of coping an individual uses facing trauma and its aftermath.

The Post-Traumatic Growth Inventory (PTGI) is a pencil-and-paper measure of growth and is based on five factors: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. According to a study on breast cancer patients using the English version of the PTGI scale translated into Chinese (CPTGI), M. W. Chan states that, "Findings showed that negative cancer-related rumination partially mediated the relationship between negative attentional bias and PTSD symptoms, while positive cancer-related rumination partially mediated the relationship between positive attentional bias and PTG" (M.W. Chan, 2011). This study highlights the importance of positive thoughts regarding the cancer. This suggests that cancer provides an opportunity for modification of thought processes that may result in emotional growth. By focusing on the latent potential positive outcomes, and taking an active coping style in their approach to thought patterns, the focus may allow for emotional growth.

Current research suggests that self-reported patient coping styles play a role in potential psychological growth following a traumatic incident (Tedeschi, R. G., & Calhoun, L. G., 2004). Additionally, a study by Schroevers, M. J. and Teo, I. found that "greater use of the coping strategies, instrumental support, positive reframing, and humor was associated with more posttraumatic growth" (Schroevers, M. J. and Teo, I. 2008). As a lung cancer diagnosis can be considered a traumatic event due to the often grim prognosis. A study on those diagnosed with lung, neck and throat cancer found that 53% of participants (n=63) met the diagnostic criteria for Post-Traumatic Stress Disorder six months following lung cancer diagnosis (Kangas, M., Henry, J. L., Bryant, R. A., 2005). This diagnosis also carries a stigma attached due to the negative

connotation with smoking that may add to the additional stress of the diagnosis (Chapple, A., Ziebland, S., & McPherson, A., 2004). Because of the traumatic nature, it stands to reason that a patient's active coping style could play a role in post-diagnosis emotional growth. There is currently a growing body of research, in the context of breast cancer, exploring the role of prior trauma and the effect such previous incidents have on the potential post-traumatic growth (Antoni, M.H. et al., 2001; Carver, C. S., Antoni, M. H., 2004; Tomich, P. L.; Helgeson, V. S., 2004; Sears, S.R., Stanton, A. L., Danoff-Burg, S., 2003). However, little research has been done on these measures specific to lung cancer patients.

In a study focused on benefit finding as a predictor of better long-term adjustment among breast cancer patients during the first year after diagnosis, Carver and Antoni state that finding benefit was related to higher stage of diagnosis and higher age (Carver C.S., Antoni M. H., 2004). Benefit finding in a traumatic situation might be considered an active coping strategy, in that it requires positive reframing in a distressing situation, which could be considered a constructive action.

Tomich and Helgeson's study, also on women breast-cancer patients, state that there is a growing body of research that suggest that the more trauma someone experiences in their life, the more value they may find in the diagnosis. The study states that this may be because their life experiences have provided the opportunity and allowed the person to initiate and develop better coping skills (Tomich, P.L., Helgeson, V. S., 2004).

Interestingly, R.G. Tedeschi and L.G Calhoun (2004) state that there are multiple distressing outcomes when individuals face trauma and, because of that, the focus of much of the research is on the potential negative outcomes. However, empirical evidence highlights the

potential of positive changes in perspective due to an individual's willingness and ability to find meaning and adapt during a trauma.

Thornton et al. (2012) found that higher self-reported levels of trauma also yielded higher levels of perceived benefit. Also, Thornton et al. suggests that there are predictive factors in emotional growth following a traumatic experience (Thornton et al., 2012). According to this study, benefit finding is positively related to how much impact a traumatic event produces. Reports of benefit finding after lung cancer were higher in patients who experienced more intrusive stress symptoms related to their cancer. The measure of intrusive stress symptoms that was used may also be indicative of cognitive processing, which may be consistent with the theory suggesting that benefit finding arises as a result of engaging with a highly stressful event. This study also found that lower levels of perceived stress were related to higher levels of benefit finding (Thornton et al., 2012).

This seemingly paradoxical pattern of outcomes is consistent with Tedeschi and Calhoun's (2004) trauma theory that trauma is necessary to experience post-traumatic emotional growth and highlights the complexity of psychological response to a life-threatening illness like lung cancer. Andrykowski et al. elaborates on Tedeschi and Calhoun's findings, stating that trauma is needed to trigger post-traumatic emotional growth and that greater growth was found consistently with greater negative stress (Andrykowski et al., 2015). An article by Zoellner & Maercker (2006) repeats this finding. They emphasize that patients may report that, without the trauma they are experiencing, they would not have been forced to live in a better way (Zoellner, Maercker, 2006).

Highlighting the role of the participant's appraisal of the cancer diagnosis, M.J. Cordova and colleagues (2007) studied participants with breast cancer states, finding that demographics

such as age and perception of cancer were associated with greater growth. Additionally, the authors suggest that, "Psychosocial interventions should be sensitive to the potential for PTG, both in treatment design and in assessment of outcomes" (Cordova et. al, 2007).

Hypotheses

Based on the literature reviewed, it was hypothesized that among patients with lung cancer, higher levels of reported traumatic history would be associated with higher levels of reported active coping styles (Hypothesis A, Figure 1); participants self-reported active coping styles would increase reported levels of post-traumatic growth (Hypothesis B, Figure 1); and finally, participants reporting higher levels of prior traumatic history would have increased reports of post-traumatic growth (Hypothesis C, Figure 1).

Figure 1.
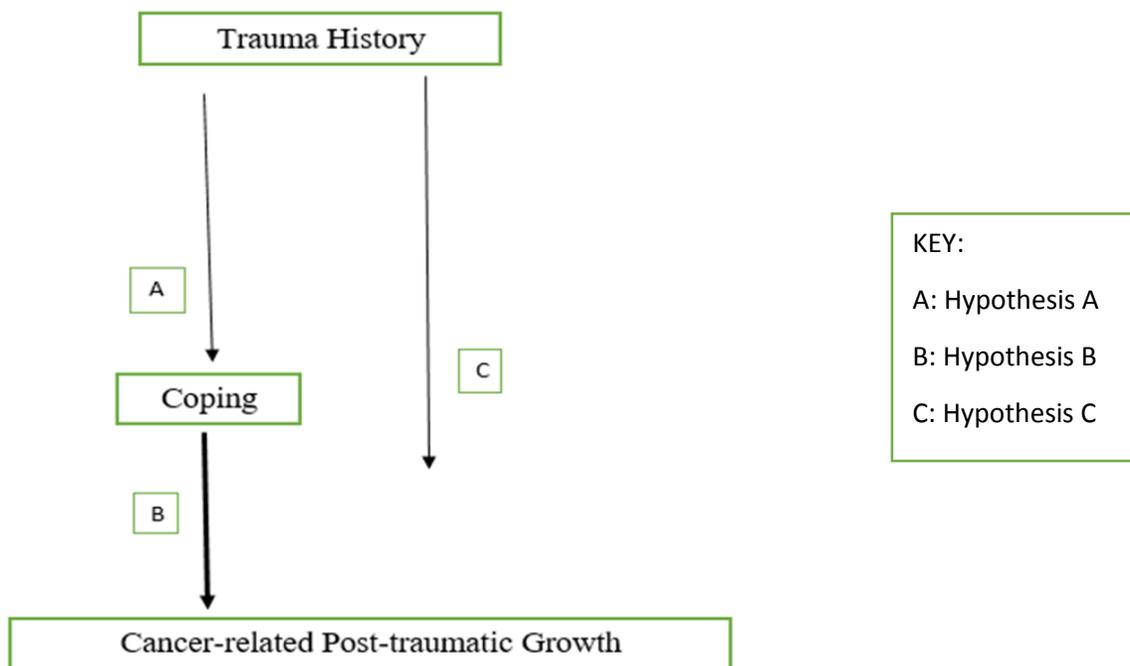
Method

This analysis utilized data from a study called "Understanding the Prognostic Significance of Circadian Disruption in Lung Cancer." This study is currently funded by a grant from the Kentucky Lung Cancer Research Board to Principal Investigator Dr. Sandra Sephton. The study funds a team of researchers and students who have initiated/completed data collection on 48 patients. The tests of hypotheses outlined above were conducted using data from the first 40 participants.

Participants

Enrollment of patients occurred with assistance from Co-Investigators Dr. Goetz Kloecker and Dr. Jorge Rios. Research personnel contacted potential participants on the day of their visit to clinics at the Cancer Center, University of Louisville Healthcare, or University Surgical Associates. Patients were informed of the study, had relevant questions answered, and provided informed consent including consent for continuing review of medical records.

Procedure

Research assistants conducted a one-hour interview with enrolled participants during which demographic and medical history were collected. Participants were provided with self-report questionnaires: self-report measures of demographic variables (age, cancer stage, income, etc.) to complete at home, as well as measures of trauma history, coping, and post-traumatic growth. Participants were provided with a $100 gift card when questionnaires and home-based data collection were returned.

Measures

To report traumatic history that participants had experienced, this study used the Trauma History Questionnaire (Appendix B). According to B.L. Green (1996), the Trauma History Questionnaire (THQ) is a 24-item self-report measure that examines experiences with potentially traumatic events such as crime, general disaster, and sexual and physical assault using a yes/no format. Participants are asked to provide the frequency of events they may have experienced (Green, 1996). THQ was the sum of how many traumatic incidents the participants reported experiencing (Hooper, 2011).

To record coping strategies, this study employed the Brief COPE questionnaire (Appendix A). As stated by C. Carver, the Brief COPE survey is a shortened version (28 item self-report measure) of a previous coping survey shortened to take in to consideration time constraints on participants in applied settings (Carver, C., 1997). The subscale that was used measured active coping, yielding one variable for use in the statistical analyses. Active coping measures were scored by adding the two items on the questionnaire packet that screened for that style of coping (item 2 and 7, Appendix A).

This study also utilized the Post-Traumatic Growth Inventory (PTGI) to measure emotional growth (Appendix C). R.G. Tedeschi and L.G Calhoun (1996) state that the PTGI was initially designed to measure and report a perceived benefit in response to trauma (Tedeschi, R.G., Calhoun, L.G., 1996). This questionnaire is a 10-item self-report keyed specifically to cancer-related emotional growth following diagnosis. The PTGI score was scored based on the sum of all responses.

Data Cleaning and Statistical Analysis

Two research assistants entered questionnaire data into independent databases. The databases were then compared to ensure correct entry. After cleaning data, questionnaires were scored before analysis. Descriptive data in the form of means and standard deviations were calculated, outliers were identified, and summary variables were evaluated for normality using visual examination of histograms. Box plots were used to identify any outliers in the coping, trauma, and growth measures. In an effort to meet the assumptions of the statistical tests to be used, natural log transformations were performed on the coping (BriefCOPE), trauma history (THQ), and post-traumatic growth (PTGI) variables, as none appeared to be normally distributed. Linear regressions testing for significance were run using the natural log transformed data. Significance was set at the p value at less than 0.05.

Tests of Hypotheses

Hypothesis A was tested using hierarchal linear regression. Control variables (age at diagnosis, cancer stage, income) were entered in the first block. Trauma history was entered in the second block as the independent variable in a regression examining the dependent variable, active coping.

Hypothesis B was tested using hierarchal linear regression. Control variables (age at diagnosis, cancer stage, and income level) were entered in the first block. Active coping was entered in the second block as the independent variable in a regression examining the dependent variable, cancer-related PTG.

Hypothesis C was tested using hierarchal linear regression. Control variables (age at diagnosis, cancer stage, and income level) were entered in the first block. Trauma history was

entered in the second block as the independent variable in a regression examining the dependent variable, cancer-related PTG.

Post Hoc Analysis

A hierarchal linear regression was run a second time on hypothesis A, hypothesis B, and hypothesis C with gender added to the control variable block. The data was then split by gender, and Spearman Rank correlations were run to evaluate the association between active coping and PTGI among men versus women.

Results

Sample Description Participants in this study ranged in age from 41 to 78 years at time of lung cancer diagnosis with a mean age of 58 years. Thirty of those enrolled were female and ten were male. Income levels before taxes had a large range with a mean that fell within the range of $30-39,999. Table 2 presents mean and standard deviation for annual household income, diagnostic age, and the scored psychosocial measures reported and for THQ, PTGI, and COPE.

Table 1.

	Frequency	Percentage (%)
Male	10	25
Female	30	75
Stage 1	7	17.5
Stage 2	6	15
Stage 3	13	32.5
Stage 4	14	35

Table 2.

	Mean	Standard Deviation	Possible Range for Measures
Descriptive Statistics			
Annual household income	4.61 (30-39,999K)	3.5	Less than 15K – Greater than 250K
Diagnostic Age	58.5	9.1	41 – 78 (actual range)
Measures			
Brief Score	5.5	1.7	2-8
THQ score	5.5	3.4	0-24
PTGI score	34.6	10.4	0-50

Test of hypothesis A and C proved nonsignificant. However, test on hypothesis B (active coping/PTG) had a significant positive association. Table 3 presents the results of hierarchical linear regressions which were performed to examine hypotheses A, B, and C, adjusted for the controls of stage at diagnosis, age at diagnosis, and annual household income. The addition of gender to the controls revealed that gender was a significant predictor of association between coping and post-traumatic growth. The association of active coping and PTG was significant for men ($r = .81$, $p = .003$, $n = 10$) but not for women ($r = .31$, $p = .11$, $n = 28$).

Table 3

	β	SE(control)	SE	R^2	R^2change(control)	R^2 change	p
COPE/THQ	-.041	.018	.012	.028	-.065	-.098	.925
COPE/PTGI	.622	-.002	.444	.387	-.066	.302	**.004**
PTGI/THQ	-.064	-.009	.137	.080	.007	.035	.598

Table 4 and Table 5 presents scatterplots the hierarchal linear regression of active coping and cancer-related PTG split by gender with additional controls of stage at diagnosis, age at diagnosis, and annual household income.
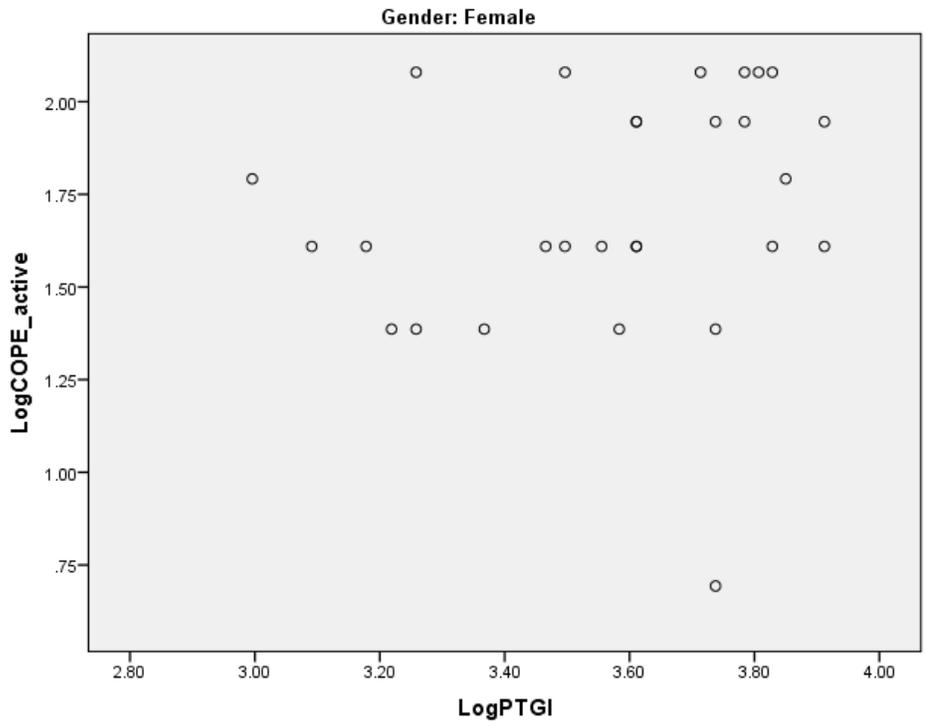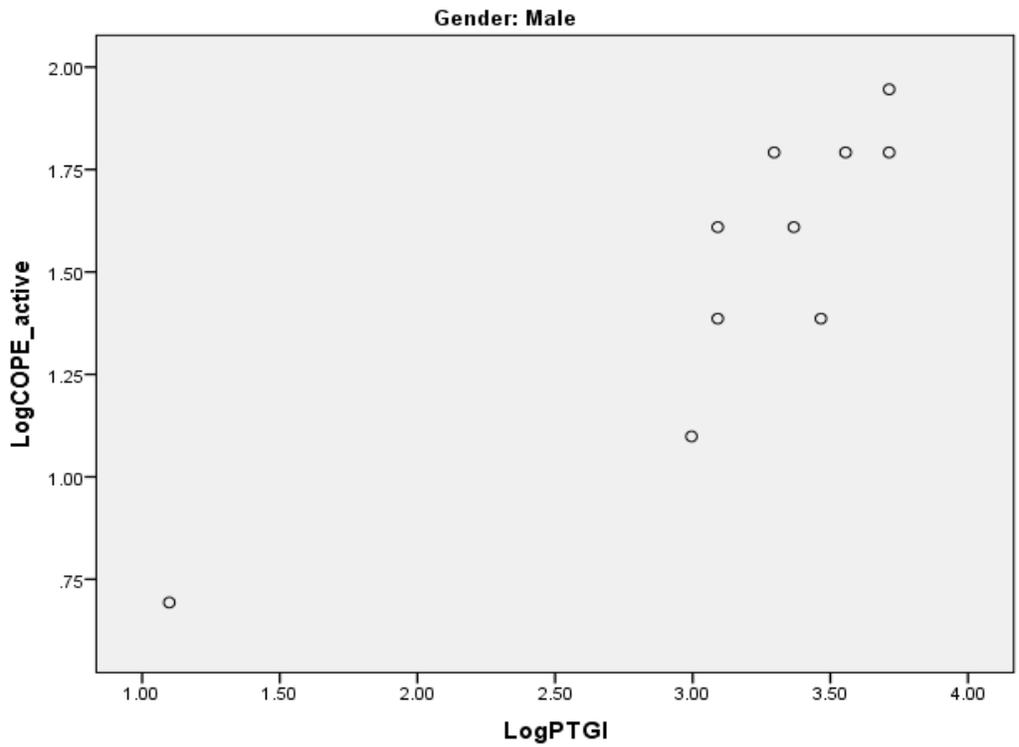
Table 4

Gender: Female scatter plot of LogCOPE_active versus LogPTGI

Table 5

Gender: Male scatter plot of LogCOPE_active versus LogPTGI

Discussion

No associations were found in this study between traumatic history and active coping styles (hypothesis A). This finding was contradictory to the literature reviewed. A more in-depth exploratory look into types of trauma and the severity of those events might yield different results, but was outside the initial scope of this study. Further research could be done to continue to explore the associations of trauma with the development of personal coping styles. The THQ also provides participants the opportunity to rate how severe their traumatic experiences were. Thus, future analyses could explore the severity and magnitude of events and their relationship with coping styles.

There was not a significant finding between traumatic history and post-traumatic growth (hypothesis C). This was directly contradictory to Tedeschi and Calhoun's (2004) study and Andrykowski's (2015) corroboration and elaboration that trauma is not only a factor in post-traumatic growth, but is necessary. This study focused on the number of events that the person experienced and not the severity--a possible factor in the results found. Further research is needed to explore the relationship between these variables, the severity of traumatic events, and the other psychosocial factors that could play a role in emotional growth following a traumatic event.

The finding of positive correlation and significance between active coping and post-traumatic growth (hypothesis B) is potentially clinically relevant. It is important to note that this data was collected at one point so causation cannot be inferred that one led to the other. This finding corroborates previous studies. However, because traumatic history did not have any significance within the analysis, it suggests that it is not what happens to the person but what they do with those incidents. Developing and encouraging active coping skills and styles may

lead to more emotional growth following a traumatic event. Clinical interventions that endorse

active coping skill development may have potential to make a profound impact on both short

term and long term quality of life post diagnosis (Carver, C. S., Antoni, M. H., 2004).

   Post hoc analyses of the relationship between coping styles and post-traumatic growth

with the addition of gender to the controls gave interesting results as well. The men in this study

that endorsed active coping techniques reported higher levels of post-traumatic growth (Table 5).

The women seemed to display higher levels of active coping overall regardless of PTG. This is

especially interesting because a lot of the research with active coping and post-traumatic growth

in cancer patients has been focused on breast cancer patients and predominately on female

participants. Carver and Antoni's study of breast-cancer patients found that benefit finding was

related to higher age and stage of cancer diagnosis (Carver, C.S., Antoni, M. H., 2004).

However, a similar result was noted in a study by Thornton and Perez (2006) on men with

prostate cancer. This study found that those participants using positive reframing and emotional

support had higher levels of PTG (Thornton, A. A., Perez, M. A., 2006). The cancer diagnosis

and modification of the patient's daily life may provide an opportunity for emotional growth.

Lung cancer is more commonly diagnosed in middle to later ages of life and may also account

for the post-traumatic growth with the men in this study.

   Lung cancer diagnoses are potentially traumatic and often comes with grim prognosis.

Because of the troubling nature of this particular cancer, it is especially important to focus on the

well-being and quality of life for the person affected. Lung cancer is frequently diagnosed in

mature adults while in their later stages of life. While a person's coping styles may have been

developed in earlier stages, it is still possible for the patient to develop new coping skills. This

study suggests that a more active coping style can lead to more emotional growth following a

diagnosis. Despite the older age of most cancer patients, emotional growth is still possible. It is important to focus on every stage of life as a potential for learning and growth, illness or not. The human experience relies on growth, both physically and emotionally.

Findings from this study have implications for the physicians and therapists of those diagnosed with lung cancer. The study contributes to the knowledge that coping styles have a relationship to potential emotional growth in a traumatic event, such as a lung cancer diagnosis. Combined with the findings in this study that trauma history, socioeconomic status, and income had no relationship, it could be encouraging to promote active coping skills in therapeutic settings.

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Appendix A

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B-COPE – 0

Instructions: We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress. Then respond to each of the following items by circling one number on your answer sheet for each, using the response choices listed just below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true for you as you can. Please answer every item. There are no "right" or "wrong" answers, so choose the most accurate answer for you-- not what you think "most people" would say or do.

Indicate **WHAT YOU USUALLY DO** when you experience a stressful event.
- **1- I have NOT been doing this AT ALL**
- **2- I've been doing this a LITTLE BIT**
- **3- I've been doing this a MEDIUM AMOUNT**
- **4- I've been doing this a LOT**

1. I've been turning to work or other activities to take my mind off things. 1 2 3 4
2. I've been concentrating my efforts on doing something about the situation I'm in. 1 2 3 4
3. I've been saying to myself "this isn't real." 1 2 3 4
4. I've been using alcohol or other drugs to make myself feel better. 1 2 3 4
5. I've been getting emotional support from others. 1 2 3 4
6. I've been giving up trying to deal with it. 1 2 3 4
7. I've been taking action to try to make the situation better. 1 2 3 4
8. I've been refusing to believe that it has happened. 1 2 3 4
9. I've been saying things to let my unpleasant feelings escape. 1 2 3 4
10. I've been getting help and advice from other people. 1 2 3 4
11. I've been using alcohol or other drugs to help me get through it. 1 2 3 4
12. I've been trying to see it in a different light, to make it seem more positive. 1 2 3 4
13. I've been criticizing myself. 1 2 3 4
14. I've been trying to come up with a strategy about what to do. 1 2 3 4
15. I've been getting comfort and understanding from someone. 1 2 3 4
16. I've been giving up the attempt to cope. 1 2 3 4
17. I've been looking for something good in what is happening. 1 2 3 4
18. I've been making jokes about it. 1 2 3 4
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. 1 2 3 4
20. I've been accepting the reality of the fact that it has happened. 1 2 3 4
21. I've been expressing my negative feelings. 1 2 3 4
22. I've been trying to find comfort in my religion or spiritual beliefs. 1 2 3 4
23. I've been trying to get advice or help from other people about what to do. 1 2 3 4
24. I've been learning to live with it. 1 2 3 4
25. I've been thinking hard about what steps to take. 1 2 3 4
26. I've been blaming myself for things that happened. 1 2 3 4
27. I've been praying or meditating. 1 2 3 4
28. I've been making fun of the situation. 1 2 3 4

Appendix B

THQ – 0

Instructions: The following is a series of questions about serious or traumatic life events. These types of events actually occur with some regularity, although we would like to believe they are rare, and they affect how people feel about, react to, and/or think about things subsequently. Knowing about the occurrence of such events, and reactions to them, will help us to develop programs for prevention, education, and other services. The questionnaire is divided into questions covering crime experiences, general disaster and trauma questions, and questions about physical and sexual experiences.

For each event, please indicate (circle) whether it happened and, if it did, the number of times and your approximate age when it happened (give your best guess if you are not sure). Then, please indicate how traumatic the event was on the scale from 1(*not at all traumatic*) to 7 (*extremely traumatic*). Also note the nature of your relationship to the person involved and the specific nature of the event, if specified.

Crime-Related Events
Circle one
If you circled yes, please indicate: If yes, how traumatic was this?

	(1)	**(4)**	**(7)**
	Not at all	Somewhat	Extremely

Number of times, Approx. age(s)

1. Has anyone ever tried to take something directly from you by using force or threat of force, such as a stick-up or mugging? No Yes   1 2 3 4 5 6 7

2. Has anyone ever attempted to rob you or actually robbed you (i.e., stolen your personal belongings)? No Yes   1 2 3 4 5 6 7

3. Has anyone ever attempted to or succeeded in breaking into your home when you were not there? No Yes   1 2 3 4 5 6 7

4. Has anyone ever attempted to or succeeded in breaking into your home while you were there? No Yes   1 2 3 4 5 6 7

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General Disaster and Trauma
Circle one
If you circled yes, please indicate: If yes, how traumatic was this?

	(1)	**(4)**	**(7)**
	Not at all	Somewhat	Extremely

Number of times. Approx. age(s)

5. Have you ever had a serious accident at work, in a car, or somewhere else? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

6. Have you ever experienced a natural disaster such as a tornado, hurricane, flood or major earthquake, etc., where you felt you or your loved ones were in danger of death or injury? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

7. Have you ever experienced a "man-made" disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones were in danger of death or injury? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

8. Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health?

No Yes   1 2 3 4 5 6 7

9. Have you ever been in any other situation in which you were seriously injured? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

10. Have you ever been in any other situation in which you feared you might be killed or seriously injured? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

11. Have you ever seen someone seriously injured or killed? (If yes, please specify who below)

_____

No Yes   1 2 3 4 5 6 7

12. Have you ever seen dead bodies (other than at a funeral) or had to handle dead bodies for any reason? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

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General Disaster and Trauma

Circle one *If you circled yes, please indicate: If yes, how traumatic was this?*

	(1)	(4)	(7)
	Not at all	Somewhat	Extremely

Number of times, Approx. age(s)

13. Have you ever had a close friend or family member murdered or killed by a drunk driver? (If yes, please specify relationship [e.g., mother, grandson, etc.] below)

_____

No Yes   1 2 3 4 5 6 7

14. Have you ever had a spouse, romantic partner, or child die? (If yes, please specify relationship below)

_____

No Yes   1 2 3 4 5 6 7

15. Have you ever had a serious or life threatening illness? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

16. Have you ever received news of a serious injury, life-threatening illness, or unexpected death of someone close to you? (If yes, please indicated below)

_____

No Yes   1 2 3 4 5 6 7

17. Have you ever had to engage in combat while in military service in an official or unofficial war zone? (If yes, please indicate where below)

_____

No Yes   1 2 3 4 5 6 7

Physical and Sexual Experiences
Circle one *If you circled yes, please indicate: If yes, how traumatic was this?*

	(1)	**(4)**	**(7)**
	Not at all	Somewhat	Extremely

Repeated?, Approx. age(s) and frequency

18 Has anyone ever made you have intercourse or oral or anal sex against your will? (If yes, please indicate nature of relationship the person [e.g., stranger, friend, relative, parent, sibling] below)

_____

No Yes   1 2 3 4 5 6 7

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Physical and Sexual Experiences
Circle one *If you circled yes, please indicate: If yes, how traumatic was this?*

	(1)	**(4)**	**(7)**
	Not at all	Somewhat	Extremely

Repeated?, Approx. age(s) and frequency

19. Has anyone ever touched private parts of your body or made you touch theirs under force or threat? (If yes, please indicate nature of relationship with person [e.g., stranger, friend, relative, parent, sibling] below)

_____

No Yes   1 2 3 4 5 6 7

20. Other than incidents mentioned in questions 18 and 19, have there been any other situations in which another person tried to force you to have an unwanted sexual contact?
No Yes   1 2 3 4 5 6 7

21. Has anyone, including family members or friends, ever attacked you with a gun, knife, or some other weapon?
No Yes   1 2 3 4 5 6 7

22. Has anyone, including family members or friends, ever attacked you without a weapon and seriously injured you?
No Yes   1 2 3 4 5 6 7

23. Has anyone in your family ever beaten, spanked, or pushed you hard enough to cause injury?
No Yes   1 2 3 4 5 6 7

24. Have you experienced any other extraordinarily stressful situation or event that is not covered above? (If yes, please specify below)

_____

No Yes   1 2 3 4 5 6 7

Appendix C

PTGI–SF – 0

Instructions: The following section consists of a list of changes that may have occurred **as a result of your diagnosis of lung cancer**. Reflect on the following statements and then circle the number that most accurately depicts your feelings towards these statements. Answers are on a scale of 0 to 5 with a 0 indicating you did not experience the listed change and a 5 indicating the change was experienced to the greatest degree.

As a result of my diagnosis with lung cancer…

(0)   (1)   (2)   (3)   (4)   (5)
Did not experience this change   Very small degree   Small degree   Moderate degree   Great degree   Very Great degree

1. I changed my priorities about what is important in life.	0 1 2 3 4 5
2. I have a greater appreciation for the value of my own life.	0 1 2 3 4 5
3. I am able to do better things with my life.	0 1 2 3 4 5
4. I have a better understanding of spiritual matters.	0 1 2 3 4 5
5. I have a greater sense of closeness with others.	0 1 2 3 4 5
6. I established a new path in my life.	0 1 2 3 4 5
7. I know better that I can handle difficulties.	0 1 2 3 4 5
8. I have a stronger religious faith.	0 1 2 3 4 5
9. I discovered that I'm stronger than I thought I was.	0 1 2 3 4 5
10. I learned a great deal about how wonderful people are.	0 1 2 3 4 5