

A Comparative Study to access the Stress and Coping Strategies among Gastrointestinal Cancer Patients and Non-Cancerous Chronic Gastrointestinal Disease Patients

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Abstract

Background: Improved diagnosis and treatment methods, increasing incidence rates and prolonged life expectancy have steadily increased the number of people living with cancer diagnosis.

Objectives: The objective of the study was to assess and compare the level of stress and coping strategies adopted by gastrointestinal cancer patients with other non-cancerous chronic gastrointestinal disease patients at selected hospital, New Delhi, in view to develop an educational pamphlet.

Methods: This descriptive comparative study was conducted in oncology day care and OPD of Institute of Liver and Biliary Sciences, New Delhi. Total 200 patients (100 GI cancer patients and 100 other non-cancerous chronic GI disease patients) were selected using convenience sampling technique and matched for age and gender. Perceived Stress Scale and Brief COPE was used to collect data regarding stress and coping strategies among GI cancer patients and other non-cancerous chronic GI disease patients. Data was analyzed using descriptive and inferential statistics.

Results: Study findings shows significant higher proportion of GI cancer patients (64%) had stress as compared to other non cancerous chronic GI patients (5%). Problem focused coping strategies were most used by GI cancer patients and other non-cancerous chronic GI disease patients. Emotion focused coping strategies was significantly ($r = 0.267, p = 0.007$) correlated with stress in other non-cancerous chronic GI Disease Patients.

Conclusion: On the basis of study findings, it is concluded that GI cancer patients had high stress. The study helped in identifying psychological needs of the patients and the educational pamphlet aided the patients to reduce the stress and adopt an effective coping strategies.

Keywords: Coping Strategies, Stress, Gastrointestinal Cancer Patients, Other non-cancerous chronic GI disease patients

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I. Introduction

Living with a chronic illness is a stressful experience that may unbalance an individual's life, possibly leading to negative psychological consequences (Greydanus, Patel & Pratt, 2010; Lopez-Lopez, Montorio, Izal & Velasco, 2008; Winters, Cudney & Sullivan, 2010). Cancer is one of the leading causes of deaths worldwide and is often a devastating disease which causes severe psychological and physical stress (Noghani, Monjamed, Borhani & Ghodratijablo, 2006). Digestive tract is a major site of cancer in human. The absolute number of cancer deaths in India is projected to increasing because of population growth, urbanization, industrialization, lifestyle changes and increasing life expectancy. The aggressiveness of the disease and need for improvement in therapeutic options is discerned by the fact the gastric cancer is the second most common cause of cancer death globally. (Alberts, Cervantes & Van de Velde, 2003). Cancer causes huge burden on society in developed and developing countries. (Torre et al., 2015). It can intimidate one's freedom (liberty) and bound oneself to play an effective role in family and society. This may lessen the self-confidence in these patients. A cancer diagnosis may appear with an unpredictable prognosis and probability for an early death can add to the stress in Cancer patients (Noghani, Monjamed, Borhani, Ghodra-tijablo, 2006). These patients are also anxious with losing the job, social interactions & may be concerned about becoming physically and financially dependent on others (Nazemi, 2014). Costanzo et al. (2012) reported various types of stressful events in cancer patients and non-cancerous patients.

Cancer related distress is defined as an "unpleasant emotional experience of a psychological, social and/ or spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms and its treatment". (National Comprehensive Cancer Network, Distress management, version 1, 2011). In a study by Holland, Korzum, Tross, Silberfarb, Perry, Comis & Oster (1986) patients with advanced

pancreatic carcinoma reported significantly more psychological distress including both depression and anxiety, than was reported by patients with advanced gastric cancer.

Stressful events in cancer have been shown to lead increase risk of disease progression and decrease survival. (Penninx, Guralnik, Pahor et al, 1998; Watson, Haviland, Grees, Davidson, & Bliss, 1999; Stommel, Given & Given, 2009; Loberiza, Rizzo, Bredeson, et al., 2002).

Coping is generally assumed to be an important meditating factor in the relationship between stressful events and physical and psychological adaptation. Lazarus & Folkman defined coping as constantly changing cognitive and behavioral efforts to manage specific external and /or internal demands that are appraised as taxing/ exceeding the resources of the person. (Lazarus & Folkman, 1984). Coping can generally be defined as an individual's cognitive/ behavioral efforts to manage (decrease/ tolerate) situations that are appraised as stress to individuals (Ogden, 2000). Coping is a progressive, continuous, dynamic & life preserving process for adapting to continual changes. Coping Strategies facilitate an individual to maintain health and avoid mental disorder (Carson & Arnold, 1996). Coping has been defined in psychological terms by Susan Folkman and Richard Lazarus as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing" or "exceeding the resources of the person. Coping is thus expending conscious effort to solve personal and interpersonal problems, and seeking to master, minimize or tolerate stress or conflict. (Dave, 2007; Psikiyatri, Cerrahpasa, Fak & Cerrahi, 2007). The term coping generally refers to adaptive or constructive coping strategies, i.e., the strategies reduce stress levels.

The two main functions in coping are management of the situation resulting the problem focused coping and regulations of an individual's emotional response to the situation (emotion focused coping) (Tobin, Holroyd & Reynolds, 1989). Kasparian, McLoone and Button (2009) suggested that patients diagnosed with melanoma using Problem Focused Coping Strategies showed better coping to illness than patients diagnosed with melanoma using passive coping strategies. (Kasparian McLoone & Butow, 2009).

Coping style can be classified into two primary categories: problem focused coping and emotional focused coping. In a stress model coping is viewed as a major component of the overall stress process, and is treated as a mediating link between stressors and psychological strain or as a moderator of the stress, strain relationship (Ogden, 2000). It is evident that the effective use of problem focused coping strategies may lower distress even in patients with advanced diseases (Uitterhoeve et al, 2004; Naaman et al, 2009). Generally a problem focused coping may be linked to better health outcome, whereas emotion focused coping is possibly related to poor health outcome (Ogden, 2000).

However, some coping strategies can be considered maladaptive resulting in increase in stress level. Maladaptive coping can thus be described, in effect, as non-coping. Coping responses are partly controlled by personality, but also partly by the social context, particularly the nature of the stressful environment.

II. Methodology:

This was a descriptive comparative study conducted among one hundred GI cancer patients and one hundred non-cancerous chronic GI disease patients.

The patients were selected through purposive sampling technique. The inclusion criteria for the GI cancer were the patients who were diagnosed with gastrointestinal cancer; knew English or Hindi; age > 18 years. The criteria for selection of non-cancerous chronic GI disease patients were the patients who were diagnosed with non-cancerous chronic gastrointestinal diseases; knew English or Hindi; age > 18 years. The patients who were at terminal stage of cancer were excluded.

During the data collection process, the Perceived Stress Scale and Brief COPE were used.

Perceived Stress Scale

Perceived Stress Scale contains 10-items which help in evaluating stress level of a person. It is a standardized tool which was developed by Cohen (1988). Each of the items on the PSS-10 are rated on a 5-point Likert scale, ranging from 0 (never) to 4 (very often). The PSS-10 consisted of 6 positively (items 1, 2, 3, 6, 9 and 10: Positive factor) and 4 negatively (items 4, 5, 7 and 8: Negative factor) worded items. Negative worded items were re-coded during analysis. The minimum and maximum possible score of PSS is 0 and 40 respectively. The scores of Perceived Stress Scale were categorized as low (0-13), moderate (14-26) and high stress (27-40). The reliability for the Perceived Stress Scale was 0.78 (Cohen et al., 1983).

Brief COPE

Brief COPE is self reported standardized questionnaire developed by Carver (1997), is used to assess a number of different coping between behaviors and thoughts a person may have in response to a specific situation. This questionnaire has 28 questions on a four-point Likert scale ("I haven't been doing this at all", "I've been doing this a little bit", "I've been doing this a medium amount", and "I've been doing this a lot"), where two items each form the following 14 sub-scales: active coping, planning, positive reframing, acceptance,

humor, turning to religion, using emotional support, using instrumental support, self distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Internal reliability of 14 sub-scales range from alpha 0.57-0.90 (Carver, 1997).

III. Results

Majority of GI cancer patients and the non-cancerous chronic GI disease patients aged between 36-59 years. Males and females were equally stratified into both groups.

Most of the GI cancer patients and non-cancerous chronic GI disease patients were married.

Nearly half of the GI cancer patients and one third of the other non-cancerous chronic GI disease patients were graduates. One third of the GI cancer patients and one fourth of other non-cancerous chronic GI disease patients were retired or housewife. Half of the GI cancer patients and one third of GI diseases patients had private job. Nearly half of the GI cancer patients and more than one third of non-cancerous GI diseases patients had no source of monthly income. Two-third of GI diseases patients had expense for treatment in a month in the range of 10000-50000 rupees.

Two-third of GI cancer patients and half of the non-cancerous chronic GI disease patients had no financially dependent members. One fourth of the GI cancer patients and only one-tenth of GI diseases patients had Government health scheme as a source of financial support.

Majority of the GI cancer patients and other non-cancerous chronic GI diseases patients didn't have any health insurance. Nearly half of the GI cancer patients and one third of GI diseases patients were the sole bread-winners of the family. Nearly one fourth of GI cancer patients and GI diseases patients were the contributing bread-winners of the family. More than half of the GI cancer patients and GI diseases patients lived in nuclear family. Nearly one third of the GI cancer patients and other non-cancerous chronic GI diseases patients had two no. of children

Half of the GI cancer patients and two third non-cancerous GI diseases patients resided within 1-200 km of distance from the hospital.

Half of the GI cancer patients had stage III of cancer. Nearly half of the GI cancer patients and majority of non-cancerous GI diseases patients had liver as the affected organ. Most of the GI cancer patients underwent chemotherapy as nature of treatment underwent whereas only one-tenth underwent radiation as current treatment. Most of the GI cancer patients and non-cancerous chronic GI disease patients did not undergo any surgery. One-third of GI cancer patients and GI diseases patients had partial surgery. Majority of the GI cancer patients and GI diseases patients had no family history of the disease. One-fourth of the GI cancer patients had metastasis of cancer. Nearly half of the GI cancer patients and majority of the GI diseases patients were diagnosed with disease for last 1 year. One third of GI cancer patient and majority of GI diseases patients had frequency of follow ups in more than 21 days.

The stress level was significantly higher among GI cancer patients than that of non-cancerous chronic GI disease patients as shown in table 1 (Fig. 1).

Table 1

Frequency and Percentage distribution of GI cancer patients and non-cancerous GI disease patients according to their stress level

Level of Stress	n ₁ +n ₂ =100+100		χ ²	df	p-value
	GI cancer patients Frequency (%)	Non-cancerous chronic GI disease patients Frequency (%)			
Low stress	10(10.0)	55(55.0)			
Moderate stress	26(26.0)	40(40.0)	84.57	2	<0.001*
High stress	64(64.0)	5(5.00)			

*p<0.05

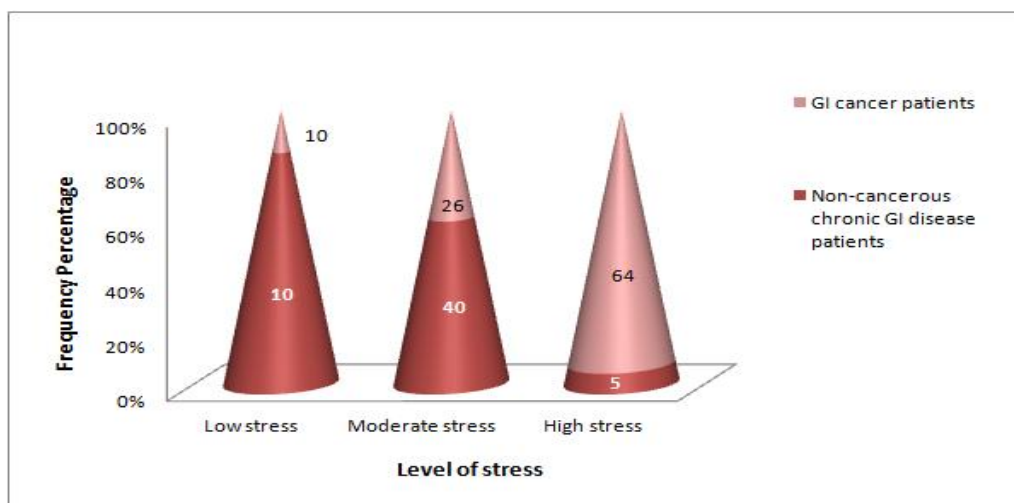


Figure. 1. Cone diagram showing the frequency percentage of stress in GI cancer patients and non-cancerous chronic GI disease patients.

The most used coping strategies among GI cancer patients and non-cancerous GI disease patients were problem focused coping strategies whereas the least used was emotion focused coping strategies.

Among problem focused coping strategies, significantly higher proportion of GI cancer patients used 'Use of emotional support', whereas significantly higher proportion of non-cancerous chronic GI disease patients used 'Denial' among emotion focused coping strategies.

Table 2

Comparison of the mean of the types of coping strategies adopted by GI cancer patients and non-cancerous chronic GI disease patients

$$n_1+n_2=100+100$$

Coping Strategies used	GI cancer patients M±SD	Rank	Non-cancerous chronic GI disease patients M±SD	Rank	t-value	p-value
Problem- focused						
Religion	6.09±1.793	II	5.77±2.014	V	1.187	0.237
Acceptance	5.71±1.719	VII	5.70±1.925	VI	0.039	0.969
Use of emotional support	6.39±1.363	I	5.90±1.761	IV	2.201	0.029*
Use of instrumental support	5.74±1.715	V	5.57±1.929	VII	0.629	0.511
Positive reframing	5.96±1.595	III	5.97±1.883	III	-0.041	0.968
Active coping	5.94±1.369	IV	6.12±1.677	I	-0.831	0.407
Planning	5.71±1.871	VI	6.01±1.795	II	-1.157	0.249
Humor	3.15±1.743	VIII	2.93±1.320	VIII	1.006	0.316
Emotion- focused						
Self distraction	5.42±1.865	I	5.27±1.476	I	0.631	0.529
Venting	4.90±1.446	III	4.41±1.736	III	2.169	0.031*
Substance use	2.42±1.065	VI	2.47±1.065	VI	-0.331	0.741
Self- blame	3.67±1.891	V	4.05±2.027	V	-1.371	0.172
Denial	5.25±1.982	II	4.15±1.708	IV	4.205	0.000*
Behavioral disengagement	4.85±1.546	IV	4.59±1.296	II	1.289	0.199

*p<0.05

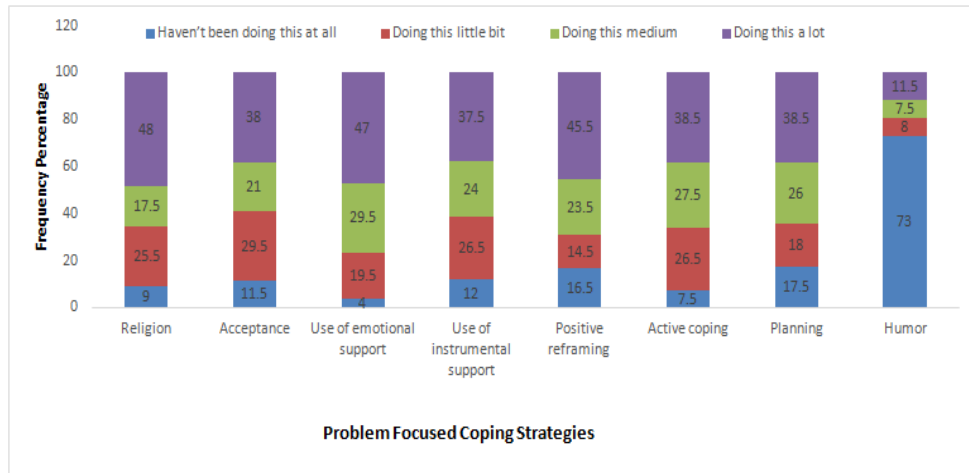


Figure. 2. Clustered graph showing the percentage of problem focused coping strategies used by GI cancer patients .

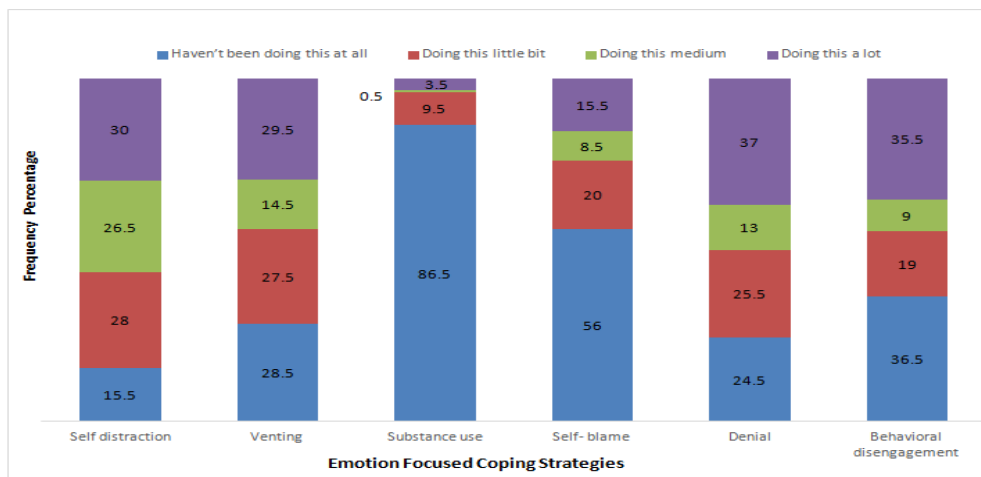


Figure. 3. Clustered graph showing the percentage of emotion focused coping strategies used by GI cancer patients.

There was no significant co-relation between problem focused coping strategies with stress of GI cancer patients. There was significant co-relation between emotion focused coping strategies and stress of GI cancer patients. Higher the stress level in GI cancer patients, more of emotion focused coping strategies is used. There was no significant co-relation between problem focused coping strategies and emotion focused coping strategies with stress of non-cancerous chronic GI disease patients.

Table 3

Correlation of Stress score with Coping Strategies among GI cancer patients and non-cancerous chronic GI disease patients $n_1+n_2=100+100$

Stress score	Coping Strategies			
	Problem-focused		Emotion-focused	
	r	p value	r	p value
GI cancer patients	-0.028	0.779	0.267	0.007*
Non-cancerous chronic GI disease patients	-0.083	0.411	0.016	0.872

*p<0.05

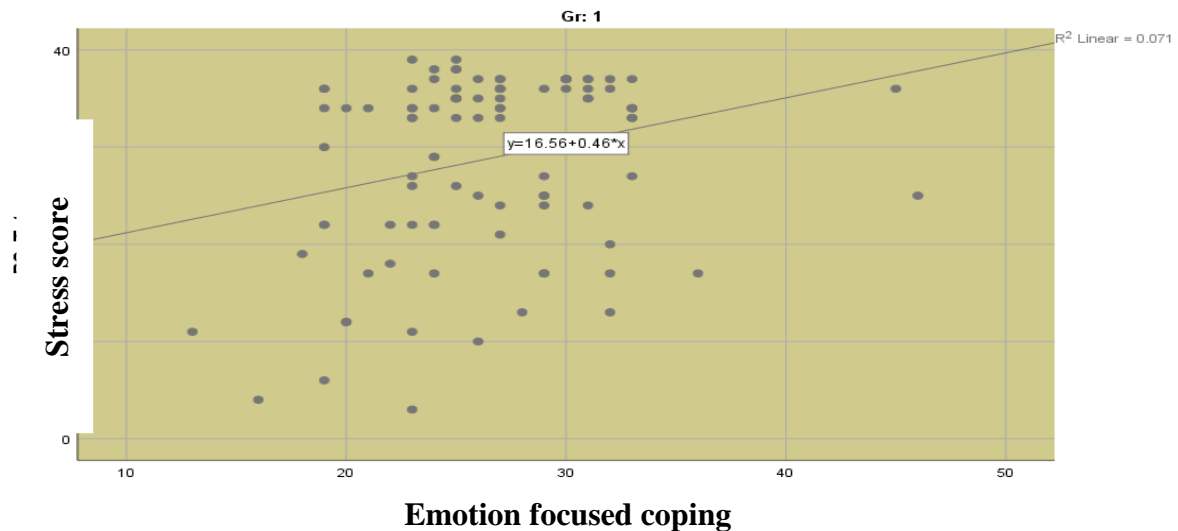


Figure. 4. Scattered plot diagram showing the correlation of stress score with emotion focused coping strategies in GI cancer patients.

IV. Discussion

In the present study, majority of GI cancer patients (64%) had high stress and one-tenth of GI cancer patients (10%) had low stress. These findings are similar to the finding of a study conducted by Atieh&Hamidreza (2016), in which the level of stress in GI cancer patients was found to be 65.60 ± 3.65 . It was found that the prevalence of psychological distress in cancer patients was 51% (mean score = 3.6). (Zainal et al, 2007).

In the current study, higher proportion of non-cancerous chronic GI disease patients (55%) had low stress and only 5% of non-cancerous chronic GI disease patients. These findings are in compliance with findings of other study (Kraus, Csef, Scheurlen& Faller, 2000; Castera, L. Constant, Bernard, Ledinghen&Couzigou, 2006) where psychological symptoms were seen in lower proportion of patients with chronic hepatitis.

In the current study, the most used coping strategies among GI cancer patients were problem focused coping strategies. The findings of our study is comparable with a study conducted by Faye, Wilson, Chater, Viola & Hall (2006) in which more problem focused coping strategies (4.19 ± 3.01) were reported by the cancer patients with physical stressors. Other studies show the similar findings (Galic, Galic&Cesarik, 2014; Alves, Santos &Fernandes, 2012). The coping strategies adopted by cancer patients also depends on disease stage (Dunkel-Schetter et al., 1992). Although, in contrary it was concluded that patients cope with cancer using mainly emotion-focused avoidance (Maes, Leventhal& Ridder, 1996). This is because there is no single strategy that is effective in all situations. Choosing the coping strategies depends on demands of the situation, factors linked to personality which determines the subjective appraisals of stress situations (Galic, Galic&Cesarik, 2014). It is seen that people who have had cancer appear to use a large range of behaviours to cope flexibly with the threats from the disease, rather than adhering to a particular coping style (Folkman& Lazarus, 1980; Folkman, Lazarus, Gruen&DeLongis, 1986).

Problem focused coping strategies were more frequently used than emotion focused coping strategies in this study which is also similar to the findings of several studies conducted (Ben-Zur et al., 2001; Gilbar and Zusman, 2007; Wang et al., 2012; Butow et al., 2013; Price et al., 2013; Tuncay, 2014). However, other studies have reported emotion-focused coping strategies being more commonly used than problem-focused strategies (Zabalegui, 1999; Kim et al., 2002; Tan, 2007; Genc and Tan 2011). A study conducted by Yahaya, Subramanian, Bustam&Taib (2015) rationalized that this inconsistency may be due to differences in the cultural background of patients studied or from a possible problem of the sample being generalized. Coping is a multidimensional concept where individual perception can be affected by an individual's beliefs and values (Lazarus and Folkman, 1984).

In the present study, the most common problem focused coping strategies used by GI cancer patients were "Use of emotional support" with a mean of 6.39 ± 1.363 whereas "Humor" (3.15 ± 1.743) was the least used. In contrary to these findings, study conducted by Priscilla et al. (2011) revealed that the most common problem focused coping strategies used by GI cancer patients were "Active coping" with mean score of 6.4 ± 1.5 whereas "Planning" (3.5 ± 1.6) was the least used. The study conducted by Yahaya, Subramanian, Bustam&Taib (2015)

revealed that “Religion” (6.5±1.8) was the most used problem focused coping strategies whereas “Humor” (3.6±1.5) was the least used.

In emotion focused coping strategies the most common coping strategies used by GI cancer patients were “Self distraction” with a mean of 5.42±1.363, whereas “Substance Use” (2.42±1.065) was used the least. In contrary to these findings, study conducted by Priscilla et al. (2011) revealed that the most common problem focused coping strategies used by GI cancer patients were “Behavioural disengagement” with mean score of 7.2±1.2 whereas “Self-blame” (2.5±0.9) was the least used. The study conducted by Yahaya, Subramanian, Bustam&Taib (2015) revealed that “Self distraction” (6.0±1.8) was the most used emotion focused coping strategies whereas “Behavioural disengagement” (2.6±1.3) was the least used.

In the present study, there was no significant co-relation between problem focused coping strategies with stress ($r = -0.028$; $p = 0.779$) of GI cancer patients. Similar findings were reported by Faye et al. (2006) who examined the association between coping and distress and revealed that there was no significant co-relation between problem focused coping strategies and stress ($p > 0.10$). Yahaya, Subramanian, Bustam&Taib (2015) also revealed that there was no significant co-relation between problem focused coping strategies and distress ($r = 0.093$, $p = 0.129$).

There was significant co-relation between emotion focused coping strategies and stress ($r = 0.267$; $p = 0.007$) of GI cancer patients in the current study signifying that as the stress increases, non-cancerous chronic GI disease patients tend to use emotion focused coping strategies more. Similar findings were revealed by Yahaya, Subramanian, Bustam&Taib (2015) that there were significant relationships between emotion focused coping strategies and distress ($r = 0.424$, $p = 0.000$). Kuo and Ma (2002) and Tuncay (2014) reported a similar finding. They found that the frequency of emotion-focused strategies used was positively correlated with distress ($p < .05$). Contradicting findings were reported by in the study conducted by Faye et al. (2006) who revealed that there was no significant co-relation between emotion focused coping strategies and stress ($p > 0.10$).

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