The Problem Strategy and Emotion Focus Coping with Pain Intensity in Post Major Surgery

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Abstract: Adaptive individual coping strategies are needed for post-major surgery patients to minimize the patients' pain after surgery. If the patient's coping is increasingly adaptive so the patient's pain intensity decreases. This study used cross sectional design with 96 respondents who were post-major surgery patients in the category of post-oncology and digestive surgery, with Spearman statistical test. The results showed that there was relationship between problem ($r = 0.445$) and emotion focus coping ($r = 0.449$) with pain intensity ($\alpha < 0.005$). After identifying the types of coping strategies that majority used by patients are emotion problem coping with social withdrawal domains and the minority are problem focus coping domain express emotion. Respondents followed the instructions to minimize pain, and get closer to God..

1 INTRODUCTION

Pain is an unpleasant individual experience that can cause potential and actual tissue damage (Elahe, 2018). Pain in postoperative patients has characteristics that involve damage starting from the integument, muscle tissue, vascular and causing long-lasting pain effect during recovery (Roht, 2017). Pain in postoperative patients is reported at severe level (Lamontagne, 2017). Pain is problem that must receive attention, not only in postoperative patients, because pain can negatively affect the health status of patients (Roykulcharoen, 2017).

Individuals who feel pain feel depressed or suffer and seek efforts to relieve pain. Nurse uses various interventions to relieve pain or restore comfort. The nurse cannot see or feel the pain the patient feels. Pain is subjective, there are no two individuals who experience the same pain and nothing two similar pain events generate response or identical feelings for individuals. Pain is a source of frustration, both patients and health workers (Potter and Perry, 2017)

Providing analgesics does not the main control holder to overcome the patient's pain complaints because it has side effects that increase the recovery time. In addition to pharmacological therapy, there are also non-pharmacological therapy options available to control pain. This method can be combined with pharmacological methods that focus on better management in reducing pain (Tetti, 2017).

Coping strategy is the way it is done to change the environment or the situation or solve the problem which is being felt or faced. Effective coping will produce persistent adaptation which is a new habit and repair from old situations, while coping which is not effective end up maladaptive namely behavior the deviant from normative desires and can hurt yourself or other people or the environment, each individual Coping is not alone and not only use one strategy but it can do it varies, it depends from ability and individual conditions (Rasmun 2017)

If pain occurs after surgery, the combination of non-pharmacological techniques with pharmacologists is the most effective method for pain relief (Suza, 2017).

According to Marialaura (2017) Coping can resolve pain in chronic patients, namely Fibromyalgia. In this study, patients used problem focus coping. Effective coping will produce permanent adaptation which is a new habit and improvement of the old situation, while ineffective coping ends in maladaptive namely behavior that deviates from normative desires and can harm

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oneself or others or the environment, each individual in doing coping is not alone and not only use one strategy but can do it varies, it depends on the abilities and conditions of the individual (Rasmun 2017).

In addition to coping strategy of Benson's relaxation in minimizing the intensity of pain in post section patients, it is very effective to do where the patient is able to manage his pain, so the patient's pain intensity decreases (Sedigheh, 2017). Distraction giving in minimizing pain in patients on intra-spinal injections given for patients who will undergo effective chemotherapy is done (Shirkey, 2019)

According to International Association for the Study of Pain (IASP), there are five models used in dealing with patient pain, including: cognitive / behavioral models, emotional models, coping models, fear avoidance models and acceptance models. From the five models, the coping model is one of the best models used to insure the pain experienced by patients. Coping strategy is one of the strategies used by patients in reducing, overcoming, dealing with pain that involves the behavior and cognitive of the patient itself. Effective coping will produce permanent adaptation which is a new habit and an improvement from the old situation, while ineffective coping ends in maladaptive i.e. behavior that deviates from normative desires.

2 METHOD

This research was quantitative study by using an explanatory analytic design with cross-sectional approach. Research location was in RSUP. H Adam Malik Medan. The population of this study were post-major surgery patients with minimum sample size of 96 people. Taking samples used consecutive sampling. The selected respondents were postoperative digestive patients, postoperative oncology patients, postoperative patients at least 3rd day, maximum patient pain scale of 6, patients willing to be respondents, patients understood instructions both verbally and writing and they were ≥ 18 years old.

The respondent coping strategy was measured by using coping strategy inventory (CSI) instrument consisting of 32 statement items, consist of Problem Solving, Cognitive Restructuring, Express Emotions, Social Support, Problem Avoidance, Wishful Thinking, Self Criticism, Social Withdrawal whereas each each item consist of 4 statements. Pain intensity was measured by using numeric rating scale (nRs) on 1-10 scale. Before conducting research, the instrument is tested for validity and reliability. In the results of content validity testing given to 3 experts, value of 0.895 was obtained. While the testing results of construct validity from 30 respondents obtained all items of valid statement with a Cronbach Alpha value of 0.90.

Data were analyzed by using Pearson correlation, where previously the data were analyzed by normality test with Kolmogorov-Smirnov.

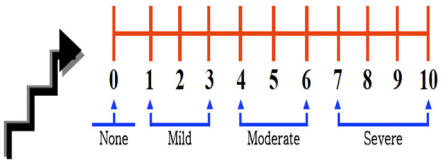

Figure 1 : *Numeric Rating Scale*

3 RESULT

3.1 Respondents Characteristics

The sample in this study amounted 96 respondents with characteristics showed the majority of late adulthood namely 36-45 years as many as 23 people (24%), male sex as many as 35 people (36.5%), the majority of Islamic religion as many as 72 people (77.1 %), the majority Batak tribe as many as 34 people (35.4%), with the majority marital status married as many as 91 people (94.8%), with senior secondary education as many as 39 people (40.6), the average job as many as 55 entrepreneurs (57.3) %), with operations history that had never been carried out before as many as 52 people (54%) with the type of oncology surgery as many as 55 people (57%).

3.2 Respondents' Coping Strategy

In this study coping strategies are divided into two namely problem focus coping and emotion focus coping. Based on problem focus coping, it is found that the highest mean is 9.49 in sub social support with standard deviation value of 2,294 and the lowest mean is 9.16 and standard deviation of 2,390 in sub cognitive restructuring. Whereas based on emotion focus coping, the highest mean is 10.55 with standard deviation of 2,280 in sub social withdrawal and the lowest mean is 8.98 and a standard deviation of 2,371 on sub wishful thinking.

Table 1: Frequency distribution based on problem focus coping.

Problem Avoidance	Cognitive Restructuring	Express Emotion	Sosial Support
96	96	96	96
0	0	0	0
9.89	9.16	9.44	9.49
2.401	2.390	2.214	2.294
12	11	11	11

Table 2: Frequency distribution based on emotion focus coping.

Problem Avoidance	Wishful Thinking	Self Critism	Social Withdraw
96	96	96	96
0	0	0	0
9.89	8.98	9.43	10.55
2.401	2.371	2.051	2.280
12	12	10	12

3.3 Pain Intensity

Based on the study result, it was found that the pain intensity with coping strategies: problem focus coping experienced mild pain as many as 15 people (14.4%) and moderate pain as many as 22 people (21.12%) while in emotion focus coping experienced mild pain as many as 36 respondents (34.56%) and moderate pain as many as 23 respondents.

Table 3: Pain intensity

Category	frequensy	percent
Mild	50	52
Moderate	46	48
Total	96	100

3.4 Normally Test

The results of the study explain that data is not normally distributed by using Kolmogorov-smirnov with a p-value of 0,000 Where p-value <0.05 means data is not normally distributed.

Table 4: Data normally test problem focus coping with pain intensity

Problem coping	focus	Kolmogorov-Smirnov[a]		
		Statistic	Df	Sig.
Mild		.452	22	.000
Moderate		.361	74	.000

Emotion focus coping normality test results with pain intensity explain that that data is not normally distributed by using Kolmogorov-smirnov with a p-value of 0,000 Where p-value <0.05 means data is not normally distributed.

Table 5: Data normally test emotion focus coping with pain intensity

Emotion coping	focus	Kolmogorov-Smirnov[a]		
		Statistic	Df	Sig.
Mild		.456	19	.000
Moderate		.357	77	.000

3.5 The Relationship between Coping Strategy with Pain Intensity

The study results about the relationship between coping strategies: problem focus coping with pain intensity obtained results with p-value of 0.02 with correlation value of 0.430 in the negative direction where if the coping strategy is good then pain decreases

Table 6: Relationship problem focus coping with pain intensity

		Problem focus coping	Pain intensity
Problem focus Coping	Correlation Coefficient	1.000	.430*
	Sig. (2-tailed)	.	.027
	N	96	96
Pain intensity	Correlation Coefficient	.430*	1.000
	Sig. (2-tailed)	.027	.
	N	96	96

The result between emotion focus coping with pain intensity obtained results with p-value of 0,000 with correlation value of 0.449 means there is relationship between coping strategies with the pain intensity in post-major surgery patients with negative direction where if we use the the better coping, so the pain that feels decreases

Table 7: Relationship emotionfocus coping with pain intensity

		Problem focus coping	Pain intensity
Emotion focus Coping	Correlation Coefficient	1.000	.449*
	Sig. (2-tailed)	.	.000
	N	96	96
Pain intensity	Correlation Coefficient	.449*	1.000
	Sig. (2-tailed)	.000	.
	N	96	96

4 DISCUSSION

4.1 Coping Strategy

Coping is a process that continually strives to change the cognitive and behavioral efforts of both external and internal demands where the judgment is obtained from humans themselves (Garbee.D, 2017). Coping strategies are ways that individuals do in solving problems, adjusting to changes, and responding to threatening situations (Keliat, 2016). If an individual is under stress, he will use variety of ways to overcome it, individuals can use one or more available coping sources (Rasmun, 2017).

Reportedly, in general the coping strategy that is often used by post-major surgery patients is adaptive coping strategy (Kaczynski, 2017). These results are reinforced by studies conducted by Kaczynski that based on respondents' coping strategies, it shows that coping strategies used by post-major surgery patients are generally adaptive obtained from social or family support, trust in God and ability in emotional management (DeGraff, 2018). It is also illustrated from the results of research conducted by Wong (2017) that coping strategies used by post-major surgery patients are generally adaptive coping strategies where family support plays an important role in the recovery period for pain felt by patients.

According to DeGraff the most universal coping strategy used by respondents is emotion focus coping which aims to minimize the perceived stress that triggers pain in spinal injury (DeGraff, 2018). Likewise, Borland expressed that post-oncology patients used emotion focus coping more identical in dealing with perceived problems (Lily M, 2018). It is also supported by studies conducted by Lilly that patients who experience identical collisions or accidents use emotion focus coping, where patients who use emotion focus coping at least more often experience more pain symptoms (Mandl, 2017).

After being identified from the types of coping strategies, social withdrawal is a type of coping strategy that the majority of patients use in reducing the intensity of pain that is felt around 88.7% which is part of emotion focus coping. In this case the patient is more identical to follow the instructions to overcome the pain felt, pray to God, and try to convince themselves with the situation experienced by the patient. Social withdrawal is a principle of coping strategy where the individual sees the positive side of pain experienced in his life by looking for the meaning or benefit of the experience. Mandl said that patients who can see the positive side of what is experienced are far better than patients who are always anxious about their conditions (Folkman, 2017). Lenti (2017) conducted postoperative patients who do not try to see the positive side of themselves in their recovery are more likely to experience more serious and ongoing pain.

The study results also found that the most minorities of coping strategies used by patients is 79.4% express emotion. Express emotion is an individual trying to find support and use the assistance from others in the form of advice or action in overcoming the problem (Gallo, 2017). The study results are strengthened from Gallo's research result where postoperative patients are very commonly experiencing cognitive and emotional function decline. When analyzed that the decline in perception of cognitive function can cause decrease in emotional function, which after being investigated between cognitive declines is strongly associated with decreased emotional function in postoperative patients (Owen, 2016). Likewise, research conducted by Owen in postoperative oncology patients, where express emotion is always followed by a change in the level of patient cognition. Even though the results do not show strong relationship, each patient's express emotion is always accompanied by cognitive change in the patient (Sharpe, 2017). Furthermore Sharpe reported that problem solving and cognitive restructuring have a role in reducing stress, where pain that occurs with postoperative patients can also be caused by stress (Aubun, 2017).

4.2 Pain Intensity

Pain intensity is description about how severe pain is felt by individuals, measurement of pain intensity is very subjective and individual and the possibility of pain in the same intensity is felt very differently by two different people. Pain measurement with the most likely objective approach used the body's physiological response to pain itself. However, measurements with this technique also cannot provide a definite picture of the pain itself (Tamsuri, 2017).

According to Benedetti (1990), intense pain stimulates stress reactions that adversely affect the heart and immune systems. When pain impulses are transmitted, muscle tension increases, as does local vasoconstriction. Ischemia at the site of pain causes further stimulation of pain receptors. When these painful impulses spread centrally, sympathetic activity is exacerbated, which increases myocardial demand and oxygen consumption.

The study results are same as Smeltzer & Bare report which states that after undergoing surgery, the patient feels postoperative pain stimulation because it is caused by mechanical stimulation of the wound which causes the body to produce pain chemical mediators. Besides this, patients with severe pain are absent, high pain intensity usually occurs on 2nd day (Logan, 2017).

There are several factors that affect the pain itself, including age, gender, ethnicity, etc. From the study results, the majority of respondents experienced moderate pain in late adulthood. Pain in late adult patients can be complex because it is related to pharmacodynamics and pharmacokinetics which can affect the body's response to pain (Suza, 2017). From the study results also found that women tend to experience mild pain compared to men. It is in line with Logan & Rosen study where women tend to show pain compared to men due to anticipatory pressure. Whereas in ethnicity term, it is found that Batak tribe show more pain than other tribes (Guyton, 2017). It is supported by Suza's research that Batak tribe responds the pain by crying, screaming, or angry (Lamontagne, 2018).

According to gate control theory, pain impulses can be regulated or inhibited by defense mechanisms throughout the central nervous system. This theory says that pain impulses are delivered when defense is opened and an impulse is inhibited when defense is closed. The effort for closing defense is the basis theory of pain relief. It can be done by modifying the patient's coping strategy (Guyton, 2018).

The study results are also almost same with Lamontagne research that postoperative pain will decrease on the 2nd day. An effective coping strategy is given after 2nd day to minimize pain [24]. Likewise, Roth research that pain decreases on 3rd day, especially if it’s adapative patient’s coping (Aubun, 2017).

According to Elizabeth G (2012), patients often report that pain has subsided on the 3rd day after surgery. Pain will increase if the mood, sleep quality and stress cannot be maintained, during this pain period it is expected that family can provide support to respondents in minimizing the pain experienced.

4.3 The Relationship between Coping Strategy with Pain Intensity

Postoperative patient pain is caused by a tissue incision in the operating area, besides that the pain will also increase along with the patient's stress which can disrupt sleep patterns, the patient's appetite for anxiety. All of these things will stimulate the amyglada which is part of the limbic system associated with emotional components of the brain. The neurological response of the amygdala is transmitted and stimulated the hormonal response of hypothalamus. The hypothalamus releases the hormone Corticotropin-Releasing Factor (CRF) which stimulates the pituitary to release another hormone, adrenocorticotropic hormone (ACTH), into blood. ACTH instead stimulates the adrenal glands to produce cortisol, a small gland that is above the kidney which will stimulate vasoconstriction of blood vessels which will cause pain (Shirkey, 2018). Coping strategy is one way that can be used by patients in reduce and resolve pain that involves the patient's own behavior and cognitive. Adaptive and appropriate coping will provide the ability for patients to adjust and be ready to deal with stressors in the form of: pain, loss of function or damage to body tissue and decreased mobility, etc.

According to Mandl, it is reported that about 8% of postoperative patients have coping strategies by using Social withdrawal, and it was also described that almost three times occur pain intensity decrease. The pain intensity that occurs in patients on scale of moderate to severe pain on postoperative at first day and in this case the patient is more identical use pharmacological drugs to reduce pain that is felt, and pain will decrease on a moderate to mild scale on the 3rd day post operation. In this study Social withdrawal appears to be more important for patients who have recently undergone surgery, where in this case the patient has more leverage to follow the instructions to reduce the pain that is felt, and it has started to accept the situation that occurs with an approach to God [26]. It is same with Borland research results (2018), that the intensity of pain decreases with the adaptive coping strategies usage in chronic patients undergoing dialysis (Haemodialisa). In this case the patient has entered into palliative care where the patient must be able to make strategies in minimizing the pain that is felt.

Research conducted by Shirkey and Kezia on Dispositional versus Episode Specific Assessment of children's coping with pain with sample of 116 children who experience abdominal pain. The results show that coping is higher level of all variables that can reduce pain. Children are assisted by family or parents in order to relieve the pain felt by the child.

Likewise, research conducted on the effectiveness of coping usage in adolescent patients after spinal surgery, it is obtained good results of coping will minimize pain, coping strategies can be used during recovery to reduce pain after surgery,

and it is done on the 2nd day post surgery (Marie, 2018).

Based on the study results, from the types of coping strategies namely problem focus coping and emotion focus coping, it was found that emotion focus coping has high value in minimizing pain even though problem focus coping has another role. It is done in post mastectomy patients. In this case in addition to coping strategies, the patient's cognitive regulation must also be done because in addition to the pain that is felt there is also loss of limbs which can increase the patient's pain (Moore, 2018).

Patient coping strategies in post-hysterectomy surgery are emotion focus coping, for example, the acceptance of pain that is felt, seeking support and diversion to the pain felt by patients, the emotion focus coping usage can not be separated from coping strategies with problem focus coping, the results show that patients use emotion focus coping is always followed by problem focus coping and in this case it is difficult to identify patient coping because each patient has different amount of coping (Moore, 2018).

Likewise the study conducted where the research is done on post mastectomy patients, the results obtained that coping has strong contribution in minimizing postoperative pain (Lamontagne, 2017).

Thus it can be clearly seen that the respondent coping strategy has very important role to minimize the pain intensity in post-major surgery patients.

5 CONCLUSIONS

There is relationship problem (r = 0.449) and emotion focus coping (r = 0.445) with the pain intensity where the increasing coping of the individual, the intensity of pain decreases with the direction of negative correlation. Emotion focus coping is more used by patients to minimize the pain felt. Emotional settings were given starting on the 2nd day after the operation.

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