Objective: Chronic wound is one of the complications that often occur on cancer patients. This wound not only cause physical discomfort, but also cause psychological discomfort: stress. This study aimed to identify the correlation between stress and coping strategies towards patient with chronic wound.

Methods: This study used quantitative method with cross-sectional design. Total of 73 cancer patients were interviewed using Questionnaire on Stress in Cancer Patient to measure stress and Brief COPE to measure coping strategies.

Result: The result of this study showed that the average of individual stress score who used emotion-focused coping strategy was significantly higher compared to the average of individual stress score who used problem-focused coping strategy (p: 0,018). There were significantly differences in stress score between respondents used problem-focused coping strategies and the ones used emotion-focused coping.

Conclusion: These findings showed that problem-focused coping strategies to be more commonly employed compared to emotion-focused coping, indicating that patients with chronic wound have adaptive coping.

Keywords: Coping strategy, stress, malignant wound, cancer.

Introduction
The number of new cancer cases in the world in 2012 was 14.1 million cases. Furthermore, the number of cancer death in 2012 as many as 8.2 million people. The prevalence of cancer in Indonesia, across the board, in 2013 was about 1.4% of total population. Of the total population in Jakarta, there were 1.9%, placing it the fifth largest in Indonesia. Cancer poses some complications on the sufferer. A frequent complication in patients with cancer is the appearance of lesions.

The magnitude of stress effect towards the physical condition of clients with cancer sores, indicate the need of effective coping for them. Previous studies have proved that there was a relationship between stress and coping strategies. Based on this, researchers are interested in identifying whether there is a relationship between stress and coping strategies in patients with cancer wound in Indonesia.

Method
This study was quantitative research with cross-sectional design involving 73 patients with various types of cancer wounds cancer. The stress level was measured by the Questionnaire on Stress in Cancer Patient and coping strategies was measured by the Brief COPE. This research was conducted by interviewing patients with cancer wound in one of the Cancer Hospital in Jakarta. Processing and data analysis was performed using survey data analysis software. During this study, researchers applied the elements of ethics, such as not forcing the respondents to participate in this study and the data was only used for research purposes.

Results and Discussion

Table 1. Characteristics of Patients

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>3</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>- Female</td>
<td>70</td>
<td>99,9</td>
<td></td>
</tr>
<tr>
<td>2. Level of education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Elementary school</td>
<td>34</td>
<td>46,6</td>
<td></td>
</tr>
<tr>
<td>- Junior high school</td>
<td>39</td>
<td>53,4</td>
<td></td>
</tr>
<tr>
<td>- High school, College</td>
<td>39</td>
<td>53,4</td>
<td></td>
</tr>
<tr>
<td>3. Type of cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Breast</td>
<td>57</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>- Ovary</td>
<td>3</td>
<td>4,1</td>
<td></td>
</tr>
<tr>
<td>- Nasopharyngeal</td>
<td>2</td>
<td>2,7</td>
<td></td>
</tr>
<tr>
<td>- The thyroid gland</td>
<td>2</td>
<td>2,7</td>
<td></td>
</tr>
<tr>
<td>- Soft tissue</td>
<td>2</td>
<td>2,7</td>
<td></td>
</tr>
<tr>
<td>- ETC</td>
<td>7</td>
<td>9,8</td>
<td></td>
</tr>
<tr>
<td>4. Stage of cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Stage 1</td>
<td>3</td>
<td>4,1</td>
<td></td>
</tr>
<tr>
<td>- Stage 2</td>
<td>10</td>
<td>13,7</td>
<td></td>
</tr>
<tr>
<td>- Stage 3</td>
<td>43</td>
<td>58,9</td>
<td></td>
</tr>
<tr>
<td>- Stage 4</td>
<td>17</td>
<td>23,3</td>
<td></td>
</tr>
</tbody>
</table>
The result showed that the majority of respondents were women (95.9%). The education level of high school and university was about 53.4%, elementary and junior high school was about 46.6%.

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Coping Strategy</th>
<th>Problem (%)</th>
<th>Emotion (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Gender</td>
<td></td>
<td>2 (66.7)</td>
<td>1 (33.3)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>a. Male</td>
<td></td>
<td>2 (66.7)</td>
<td>1 (33.3)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>b. Female</td>
<td></td>
<td>45 (64.3)</td>
<td>25 (35.7)</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Level of education</td>
<td></td>
<td>19 (55.9)</td>
<td>15 (44.1)</td>
<td>0.241</td>
</tr>
<tr>
<td></td>
<td>a. Low</td>
<td></td>
<td>19 (55.9)</td>
<td>15 (44.1)</td>
<td>0.241</td>
</tr>
<tr>
<td></td>
<td>b. High</td>
<td></td>
<td>28 (71.8)</td>
<td>11 (28.2)</td>
<td></td>
</tr>
</tbody>
</table>

In this study, breast cancer was the most prevalent at 78%. More than half of the respondents (58.9%) were in the stage III and problem-focused coping strategies were mostly used among patients with cancer lesions (64.4%).

| Table 2. Analysis of the Correlation between Stress and Coping Strategies |
|-----------------------------|---------------------|-----------------|-------------|-------|
| Stres | Mean | SD | SE | N | T | P value |
| Problem | 35.9 | 12 | 1.75 | 47 | 2.4 | 0.018* |
| Emotion | 43.4 | 12.7 | 2.5 | 26 | | |

* Significant at α: 0.05

The average score of the stress level experienced by respondents who used problem-focused coping strategies was 35.9 ± 12.1 (95% CI), while the average score of the stress level experienced by respondents who used emotion-focused coping strategies was higher, at 43.42 ± 12.7 (95% CI). Further analysis showed there was no difference in the average score of total stress among respondents who used problem-focused coping strategies and those used emotion-focused coping strategies (p: 0.018; α: 0.05).

Both male or female, were equally more use problem-focused coping strategies. Further analysis, there was no significant relationship between sex and coping strategies (p 1; α: 0.05). The respondents with higher education level (high school and university) as well as those with lower education level (elementary, middle) frequently used emotion-focused coping strategies. Therefore, we analyzed that there was no significant relationship between the level of education and coping strategies (p: 0.241; α: 0.05).

The results of this study showed that the mean age of patients with cancer lesion was 48 years old, with the youngest aged 23 and the oldest aged 75 years old. The age of cancer patients in this study was in line with the characteristics of respondents in previous studies that pertained to elderly adults. The results of research by Fromantin et al (2014) showed that the average age of patients with cancer sores was 60 years old in the age range of 30 to 96 years. According to Bergstrom (2011) and Zeppetella(2012) that cuts cancer occurs frequently in patients between the ages of 60 and 70, with advanced cancer.

One of the causes of cancer related to the age factor is mutations (genetic changes). Normal human cells need to undergo a series of genetic changes in malignant transformation. Every time a cell divides, it is an opportunity for the occurrence of mutations, gene mutations increase the amount of time, which is why a person has a high risk of developing cancer as they age.

Based on the results of the study, the prevalence of cancer is increased in the elderly. The incidence of cancer in the UK in 2011 to 2013, on average each year 50% of new cancer diagnoses was a person aged 70 years or older. Increasing the number of new cancer...
cases in Wales UK in 2014 were highest for ages 70 to 74 years in men and 65 to 69 years in women. The highest percentage of cancer cases in Indonesia were people in the age group of 70 years and above, which was about 5%, while the lowest percentage occurred in children aged 1-4 years and 5-14 years by 0.1% respectively.

The results of this study showed that female gender represent almost all survey respondents ie 95.9% of men and only 4.1%. This happen because 78.1% of the respondents of this study are patients with breast cancer and respondents with other types of cancer that are also partially represented by women. According to data from GLOBOCAN (IARC) (2012), breast cancer has the highest percentage of new cases, which amounted to 43.3% in 2012, worldwide.

In 2013, breast cancer is also type of cancer with the highest prevalence in Indonesia. The high prevalence of breast cancer both in the world and in Indonesia commonly caused by obesity. The results of this study found that the number of respondents who were obese stood at 6.8%. The results of this study was almost equal to the number of breast cancer patients in the UK who were diagnosed as obese, were about 7%.

The prevalence of obesity in women aged above 15 years old in Indonesia was quite high when compared to the total population of women in Indonesia which was about 23.8%. According to Cancer Research UK (2015), after menopause, women who were overweight or obese had higher risk of breast cancer compared to those who had ideal weight. In addition, estrogen can be produced from body fat, thus after menopause, estrogen produced from body fat increase, affects the growth and division of cells, which would further accelerate growth and cancer initiation.

The results of this study showed that the number of respondents with lower education levels (elementary, middle) was 46.65%, while the number of respondents with a higher education level (high school, university Cleaner) was higher, as much as 53.4%. The results of this study were in line with research conducted by Smailyte, Jasilionis, Ambrozaitiene, and Stankuniene (2012) that found higher level of education were associated with increased risk of prostate cancer in men and an increased risk of breast cancer in women. Mouw et al (2008) also stated that women with lower education had lower risk of breast and endometrial cancer. On other hand, people with higher education had higher risk of colon cancer, lung, and kidney cancer.

The most prevalent types of cancer in this study was breast cancer and that was as much as 78.1%. This is proportional to the percentage that most common cancers in the breast recorded as much as 79%. Several studies have also mentioned some parts of the body that might be potential area of wound in cancer patients, as follows: in the breast (62%), the head and neck (24%), groin and genitals (3%), and the remaining one was in other body sites (8%).

All types of cancer can cause wound, especially breast cancer sores. Malignant cell growth derived from primary tumours elsewhere in the body. Tumor cells detach from the primary tumor spread through the bloodstream, lymph vessels, or between the network and once settled in skin cancer cells will settle and multiply, producing initial signs of injury cancer. Cancer wound can arise primarily from a tumour in the skin, tumours on the underlying structure of the skin, or from the distant metastatic spread of tumours. Clark & Robert (2012) stated that the primary tumor on near the skin continues to grow and eventually become malignant sores on the skin. Breast cancer is the most leading cause of injury, because the breast is located near the surface of the body.

The results of this study found that most common cancer stage was stage 3 and stage 4, that were about 58.9% and 23.3%, respectively. From this finding, we conclude that the majority of patients with wounds cancer had entered advanced stages of cancer. This was in line with some researchs that found cancer was more common injuries occured in patients with advanced-stage cancer.

Stress is one of the symptoms experienced by patients with cancer sores. Stress in this study was measured using the Questionnaire on Stress in Cancer Patient (QSC). QSC has five dimensions that can measure stress, experienced by cancer patients. The results of this study showed the average score of the fifth dimension was prevalent. In other words, the range of the average score of each dimension did not wither from other dimensions, as a whole. The average score of each dimension in percentage among others, as follows: Fears (20.6%), psychosomatic complaints (27%), information deficit (17.7%), everyday life restrictions (26%), and social strains (7.9%). The conclusion that all dimensions in QSC have contributed in causing stress in patients with cancer wound.

This study found that the average score fears dimensions were 20.6% of the total score. Fears Dimension ranked third after psychosomatic complaints and everyday life restrictions. According to Leong and Sok (2016) fear was commonly experienced by patients with injuries of cancer. It because they are afraid if other people get to know the symptoms related injuries, such as odors and leakage of exudates; afraid of addiction to painkillers; and fear of death.

The results of this study showed that lack of information became the fourth leading cause of stress in patients with cancer wound, that was 17.7%. According to Leong and Sok (2016), lack of
information from health workers or nurses, especially information associated with cancer wound care could make them more experienced stress. The rate of stress level experienced by respondents in the study was lower than patients with cancer wound in Cancer Hospital Dharmais because the respondents obtained a lot of information from any sources.

Psysomatic complaints (27%) and everyday life restrictions (26%) were the first and second leading cause of stress in this study. It was associated with decreased quality of life in patients with cancer wound. The impact of granulating incisions, open and/or visible cancer is, or maybe, a complex social issue. Strong odour and visible pain may be the most frequent problems experienced by cancer sufferers, which in turn may also affect their quality of life. According to Probst et al (2014), as much as 83% of patients and caregivers of patients reported that the smell was a major problem of them, while reported pain was about 31.2%.

Patient reported feeling stress because they have to struggle with excessive exudate. Results of research conducted by Reynolids and Gethin (2015) mentioned that the management of excessive exudate causing many patients to stay in their own homes for a long time in order to manage or prevent injuries. Another study mentioned that all patients were afraid of the odor which could be recognized by other people, causing the patients isolating themselves from their environment (Probst, 2013; Probst, Arber, & Faithfull, 2013). The results of the identification of a large part of the patient consistently that offensive odour from exudation of the affected area, introduced social discrimination and introduced a lowering of their quality of life.

Complicate patient reported pain in intercourse. Pain and irritation due to injury caused discomfort, reduced mobility, made patients felt difficult to relax during sexual intercourse. According to Probst et al (2013) patients were concerned about their partners, for instance their spouses could not touch their breast during sexual activity. All patients reported experiencing a loss of intimacy and impact on the quality of relationships.

The results of this study found that the average total score of stress was 38.59, the smallest score was 14 and the biggest score was 68. Based on some earlier research, the causes of stress experienced by patients with cancer is wound odor, leakage of exudates, and pain. The researcher’s analysis of the causes of the low percentage of stress level experienced by respondents in that study were correlated to the low rate of average scale of smell and pain, that was about 0.88 of the maximum value of 3.62 for smell variable, and s 3 of maximum scale of 10 for pain variable.

Based on this result, the average score of odor scale perceived by patient was 0.88 that means the average patient did not feel the smell, while the average patient’s pain scale was 3 that means the average patient felt mild pain. Based on this finding, it can be concluded that smell and pain were not relevant factors caused stress among patients. This was due to modern dressings in wound care that was applied by Dharmais Cancer Hospital, thus cancer wound did not precipitate strong wound odor, the patient felt more comfortable and persistently re-visit hospital to treat their wound care. Patients were also not burdened by the costs because it has been covered by the Social Security Agency (BPJS) and to overcome the pain, patients regularly took medication prescribed by a doctor in Dharmais Cancer Hospital.

The results of this study found that problem-focused coping strategies more widely used by patients rather than emotion-focused coping strategies. The same findings were reported in previous studies. Individuals reported their preference to use problem-focused coping strategies when they were able to change an unwanted situation, and tend to use emotion-focused coping strategies when there were a few personal factors or solutions that could be modified to change any kind of situation.

Problem-focused coping strategies may not always be a common coping strategy, or most frequently used by respondents. Other studies have reported emotion-focused coping strategies were more commonly used than problem-focused strategies. The inconsistent result might be due to differences in culture and background of the respondents. Different cultures and backgroudsamong others, such as education, ethnicity, history of parental care, living environment and so forth. Coping is a multidimensional concept in which the individual’s perception can be influenced by the individual’s beliefs and values, thus those differences did matter.

The results of this study also showed that 64.4% of patients with mild stress preferably used problem-focused coping strategies. According to Berkel (2009) problem focused coping strategy was proven to reduce stress levels and brought positive emotions. However, not all studies have showed similar results. The results of research conducted by Kirchhof, Freitas, Silva, Guido, Costa, and Lopes (2015) concerning the relationship of stress and coping in the nursing faculty, Brazil was not in line with the initial hypothesis that had mentioned the lecturer with mild stress would use the strategy problem-focused coping. The contradictory result showed that lecturers with mild stress level were found to preferably use the emotion-focused coping.
Based on these results the average age of the respondents who used problem-focused coping strategies were older by 3.4 years (-1.9; 9.8) compared to those who used emotion-focused coping strategies. Some studies stated that older respondents were more likely to use problem-focused coping strategies, whereas younger respondents were more likely used emotion-focused strategies coping. Yahaya et al (2015) mentioned that problem-focused coping was mostly used by age group of 36-45 years old, while emotion-focused coping was mostly used by the age group of under 35 years old. Melendez, Mayordomo, Sancho, and Thomas (2012) also mentioned that the use of problem-solving and social support increased by age.

This study found that there was no significant age differences between respondents who used problem-focused coping strategies and those who used emotion-focused coping. Researcher’s analysis for this finding that there are still two conflicting theories about the relationship of age and coping strategies. Folkman and Lazarus (1980) stated that health problems and loss of friends or family experienced by older people led to their preference towards emotion-focused coping strategy, otherwise Vaillant (1977) stated that in that age, a person faced various problems in his life that made them potentially use more adaptive coping.

How individuals face problems in his life will not be same between one individual with another individual. According to Blood and Blood (2015), coping skills and the ability of stress management are acquired from unique and various experiences. Coping is a multidimensional concept in which the individual’s perception can be influenced by the individual’s beliefs and values 15. The researchers concluded that the result of this study were inconsistent with the other studies regarding the relationship between the average age and coping strategies, because of differences in culture and background of the respondents studied.

Based on this study, men and women were alike, which means both men and women were more likely to use problem-focused coping strategies. Further analysis, there was no significant relationship between gender with coping strategies. The different results established by Yahaya et al (2015) that found there was a significant relationship between gender and coping strategies, in which women mostly used problem-focused coping strategies than men.

Another study mentioned that most men preferably used more problem-focused coping strategies 5. According to Contrada & Bauw (2011), there was no difference between men and women about their ability to identify stressful situation and the efforts to cope them. In addition, men and women reported that they used a similar approach when dealing with the stress of everyday life, including avoidance issues, discussions or ignoring the situation.

The application of coping strategies can not precisely determined by sex, age, or any kind of factors. Because it depends on particular situation, for instances, the target of the study, the problems faced by the respondents, and others. According to DeLongis Holtzman, Puterman, and Lam (2005); Folkman, Lazarus, Dunkel-SCHETTER, Delongis, and Gruen (1986) stated that coping is a dynamic process, which is established by the characteristics of the person and particular situation, and evolve over time 12. Coping skills and stress management as a result of their unique experience 6. Coping is a multidimensional concept in which the individual’s perception can be influenced by the individual's beliefs and values 15.

Respondents with higher education levels and respondents with low levels of education equally preferred problem-focused coping strategies. Further analysis, there was no significant relationship between the level of education and coping strategies. Differences in education level did not influence the selection of coping strategies on the respondents in this study, both respondents with higher and lower education mostly used problem-focused coping strategies. Researchers concluded that patients with wound cancer in Dharmais Cancer Hospital had been able to adapt the circumstances and to cope with stress because according to Tuncay, Musaba, GoK, and Kutlu (2008), problem-focused coping strategies had been proved to be more effectively used by patients with chronic disease.

The mean score of stress individuals who use emotion-focused coping strategies were significantly higher than the mean score of stress individuals who use problem-focused coping strategies (p: 0.018). The results were consistent with the research conducted by Yahaya et al (2015) which stated that cancer patients tend to choose the emotion-focused coping strategies when symptoms of distress increased. And a research showed that problem-focused coping strategies associated with mild anxiety levels, while emotion-focused coping related to severe levels of anxiety (Folkman & Moskowitz, 2004).

Problem-focused coping strategies are effective for relieving stress. According to Berkel (2009), several subscales of problem-focused coping, among others, acceptance and use of instrumental support was proven to reduce stress, while emotion-focused coping subscale are mentioned venting can increase negative emotions. The researchers concluded that when the stress experienced by patients with cancer was severe stress injury then they will focus to overcome their emotional problems beforehand rather than finding a solution or resolve its problems.
Conclusion

Problem-focused coping strategy was mostly used by patients with cancer lesion. There was no difference in the average score of total stress among respondents who use problem-focused coping strategies and respondents who use emotion-focused coping strategies.

This study found that the age, gender, educational level had no strong correlation with coping strategies due to coping being a dynamic process, influenced by particular situation, a history of the individual, which develops over time. Therefore, the inconsistent result of this study with the other studies related to the differences of characteristics or background of respondents.

References

21. Murphy, A. (2008). Making it better Although fungating wounds do not usually heal, there are a number of treatment options available to help patients cope, writes. Dublin: Anne Murphy is oncology nurse education facilitator at St Luke’s Hospital, Rathgar, Dublin 6.


