

## Effectiveness of Cognitive Behavioral Therapy on Body Image in Nasopharyngeal Cancer Patients

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**Abstract:** Body image is a critical psychosocial problem in nasopharyngeal cancer patients which can affect their life quality. It can be handled by psychosocial therapy which can increase body image by conducting cognitive behavioral therapy (CBT). The objective of the research was to identify the effectiveness of CBT on increasing body image in nasopharyngeal cancer patients. The research used quasi experimental method with equivalent control group design. The samples were 66 respondents: 33 of them were in the intervention group and the other 33 of them were in the control group, taken by using consecutive sampling technique. The result of the research, using statistic independent t-test, showed that there was the difference in the body image of nasopharyngeal cancer patients between intervention group and control group in the post-intervention with CBT at p-value = 0.000 ( $p < 0.05$ ). The conclusion was that CBT was effective in increasing body image in nasopharyngeal cancer patients. It is recommended that nurses play an active role in doing CBT as the nursing intervention independently and in collaborating way in order to help increase the body image in nasopharyngeal cancer patients.

**Keywords:** Cognitive Behavioral Therapy, Body Image, Nasopharyngeal Cancer

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### I. Introduction

Carcinoma or nasopharyngeal cancer (KNF) is a carcinoma originating from the nasopharyngeal surface epithelium, usually developing around the Eustachian tube ostium in the lateral wall of the nasopharynx and including squamous cell carcinoma. Nasopharyngeal cancer is a part of endemic head and neck cancer that is common in Asia, especially in South China and Southeast Asia, including Indonesia (Adham et al., 2012).

Data from the International Agency for Research on Cancer (IARC) in 2012 showed that there were around 86,691 new cases of NPC diagnosis worldwide. Prevalence of NPC in North America and Europe, less than 1 case per 100,000 population/year. The highest prevalence of NPC in the world is found in Zhongshan City in Guangdong Province, South China, which has a prevalence of 28.3 cases per 100,000 male population per year (Ferlay et al., 2013; Wei and Chua, 2014).

Nasopharyngeal cancer in Indonesia ranks fourth most cancer of all malignancies after cervical, breast and lung cancer (National Cancer Management Committee [KPKN], 2015). In 2012, nasopharyngeal cancer in Indonesia ranked first, at 28%, of all head and neck cancers in the ENT-KL section and the prevalence of nasopharyngeal cancer in Indonesia, an average of 6.2/100,000 population per year, with 13,000 cases of NPC new each year (Adham et al., 2012). North Sumatra Province also occupies the top five out of 34 provinces for the most NPC cases (Pusdatin Ministry of Health, Republic of Indonesia, 2013).

Body image is one of the factors that has a large impact on the formation of individual identity (Bahrami et al., 2017). Body image is a complex construction of how a person views his physical appearance which involves perceptions, thoughts, feelings, and behaviors related to the whole body and its functions (Fingeret, Teo, and Epper, 2014). A person's response to body image is divided into positive body image and negative body image. Someone who has a positive body image will have satisfaction with the condition of his body, confidence and have high self-esteem so that he feels optimistic in life, facing problems with confidence and hope (Tadabbur, 2008; Tiwari and Kumar, 2015).

Someone who has a negative body image will have a sense of dissatisfaction with his body, have low self-esteem so that he feels useless, feels disliked by the environment and people around and has a lack of enthusiasm for life (Tadabbur, 2008). Someone who has body image disorder will have a negative body image. Body image disorder refers to problems that occur, partly or wholly covering feelings of sadness and unattractiveness as well as changing thoughts about the appearance of the body, and leads to serious psychological problems (Cash and Smolak, 2011).

Cancer and cancer treatment including loss of body parts, scarring, decreased physical activity, tumors that affect the neck, eyes, head, hair loss, chemotherapy, and radiotherapy can pose a threat to body image (Bahrami et al., 2017). Body image disorders, especially in head and neck cancer patients, are multidimensional concepts including physical changes due to tumors/disabilities, psychological pressure, loss of function in certain body parts and cancer treatment (Rhoten, 2016).

Nasopharyngeal cancer is the most common part of head and neck cancer. Nasopharyngeal cancer patients who have the most common clinical symptoms include mass (lump) in the neck 93.17%, followed by nasal obstruction 79.55%, hearing loss 79.55%, epistaxis (nose bleed) 68, 18%, headaches 63.64%, and facial paresis (facial muscle paralysis) 31.82% (Faiza, Rahman and Asri, 2016). Abnormalities seen in clinical symptoms and organ dysfunction from head and neck cancer, especially nasopharyngeal cancer and cancer treatment or even both can cause significant body image disorders (Rhoten, Deng, Dietrich, Murphy and Ridner, 2014).

In patients with nasopharyngeal cancer (KNF), radiation therapy and chemotherapy serve as cancer treatments (Hung et al., 2017). Patients undergoing radiation therapy experience some physical changes in areas of the body that are very visible and difficult to hide. Physical changes from radiation therapy can include erythema (reddish skin/rash), desquamation (exfoliation), oral mucositis (inflammation or sores in the lining of the oral cavity), weight loss, and including the presence of feeding and/or tracheostomy tubes (surgery opening or making a hole in the throat or trachea). These changes in physical appearance can change patients' perceptions about themselves. In addition, the physical presence of the tumor and its response (or lack of) treatment can also have an impact on the patient's body image (Daley-Schweitzer et al., 2011; McAllister et al., 2013; O'gorman et al., 2013).

Defrianta's results (2016) showed that as many as 70% of nasopharyngeal carcinoma patients experienced negative body image. As many as 83.3% of patients stated that they could not accept changes in the skin and hair of patients due to cancer treatment, 76.6% stated that their appearance was no longer attractive, and 70% said they could not accept physical appearance changes due to nasopharyngeal cancer they experienced.

Some studies suggest that negative body image can affect the decline in quality of life and cause depression in cancer patients (Bullen et al., 2012; Fingeret et al., 2014; Rhoten, Murphy and Ridner, 2013). Patients' perceptions of the body can change during the course of the disease, and as a result, patients may experience emotional distress, which can affect overall quality of life. Emotional distress due to changes in body image can increase social isolation and change behavior as a consequence of perceived reactions (Clarke, Newell, Thompson, Harcourt and Lindenmeyer, 2013).

In response to changes in body image, cancer sufferers need to develop self-protective strategies to overcome problems with body image. To improve and maintain a positive body image, interventions are needed that can change the mind, emotions and behavior related to the whole body and its functions (Fingeret et al., 2014).

Cognitive behavioral therapy (CBT) focuses on how people think about situations and helps people understand the thoughts, feelings, and attitudes that affect their behavior (Alavi et al., 2017). CBT consists of several sessions where patients are guided to learn how to identify and change thoughts that have a negative impact on behavior (Daniels, 2015). CBT can reduce individual attention to the difference between their real appearance (current body image) and their desired body (ideal body) which is one of the most important factors that cause disruption of body image (Garrusi, Garousi and Baneshi, 2013). This intervention also helps individuals control their thoughts and feelings about their appearance. This therapeutic method pays attention to promoting self-efficacy (Rahbarian, Tarkhan and Jalali, 2012). The problem in this study is how the effectiveness of cognitive behavioral therapy on body image in nasopharyngeal cancer patients. This study aims to identify the effectiveness of CBT on improving the body image of nasopharyngeal cancer patients.

## **II. Research Methods**

The quantitative research design used in this study is a quasi-experimental research design that is an equivalent control group design that is used with the same number of samples that provide basic data to compare the effectiveness and influence of the experimental variables. In this study respondents were given a pretest before cognitive behavioral therapy (CBT) interventions were performed to assess the body image of nasopharyngeal cancer patients, then respondents were given a post test after a CBT intervention to reassess the body image and identify the effectiveness or differences in the intervention group and the control group.

The data collection of this research was conducted in May-July 2019 at the Haji Adam Malik General Hospital Medan. The population in this study were nasopharyngeal cancer patients treated at Haji Adam Malik General Hospital Medan. The sampling technique used is nonprobability sampling with consecutive sampling method. This method is a method for determining the sample by selecting all individuals found from the population in accordance with the sample criteria until the number of samples is met (Polit and Beck, 2012).

Samples in this study were nasopharyngeal cancer patients with inclusion criteria as follows: 1) Patients with nasopharyngeal cancer III or more, 2) Nasopharyngeal cancer patients who were undergoing chemotherapy and radiotherapy, 3) Age over 18 years, 4) Conscious and cooperative, 5) Able to communicate well verbally, 6) Able to listen well/have no hearing loss, 7) Willing to be a participant in research, 8) Able to follow cognitive behavioral therapy programs, 9) Patients who live/live in Medan area and its surroundings which can be reached by researchers.

The number of samples used in this study was calculated using the formula for estimating the sample size for the average difference of the two groups, as follows (Sastroasmoro and Ismael, 2014):

$$n = 2 \left[ \frac{(Z_{\alpha} + Z_{\beta})s}{x_1 - x_2} \right]^2$$
$$n = 2 \left[ \frac{(1,96 + 0,842) 5,15}{24,83 - 21,08} \right]^2$$
$$n = 29,64$$
$$n = 30$$

To anticipate the possibility of selected subjects dropping out, loss to follow-up, the researcher added a number of samples by 10% so that the sample size remained fulfilled. Then the number of research samples is 33 respondents for the control group and 33 respondents for the intervention group. The total number of samples in this study were 66 respondents.

The preparatory stage for data collection begins after obtaining ethical clearance and then continues with taking care of the research location permit by submitting a research permit request from the Dean of the Faculty of Nursing, University Sumatera Utara and addressed to the education and research section of the Haji Adam Malik General Hospital Medan. The next stage the researcher identifies the research sample based on criteria that have been made previously. The researcher introduces himself and explains the purpose of the study, the benefits of the study and the intervention procedures to be carried out, as well as submitting an approval sheet containing approval to be a research respondent conducted at the Haji Adam Malik General Hospital Medan. On the informed consent sheet, respondents were asked to include their full address and telephone number that could be contacted as communication media to conduct a home visit during the intervention. Before conducting the intervention the researcher examined the characteristics of the respondent's demographic data and measured the patient's body image using a multidimensional questionnaire body-self relation questionnaire (MBSRQ) (pretest stage).

The MBSRQ questionnaire consisted of ten dimensions of body image with a total of 69 question items. The questions were assessed using a 5 point Likert scale with a score of 1 to 5 (strongly disagree to strongly agree). The lowest value is 69 and the highest value is 345. The higher the number of scores, the higher the satisfaction of body image and the better body image. Values higher than 206 are considered positive body images, and lower values are considered negative body images. Researchers have tested the validity of the questionnaire by asking the opinions of 3 experts as research instrument experts displayed in the value of content validity index (CVI). In this study the CVI value obtained from the MBSRQ questionnaire was 0.93, so the questionnaire was declared valid. Researchers have also conducted a reliability test on the questionnaire and obtained a Cronbach alpha value of 0.94. This value indicates that the MBSRQ questionnaire is reliable.

Furthermore, researchers conducted a time contract with respondents in the intervention group to be given cognitive behavioral therapy interventions individually for 5 sessions for 3 weeks with seven meetings. Sessions one, four and five are held in one meeting each. Sessions two and three were held twice each. The time for one meeting is 30-60 minutes. The researcher gave the first session of CBT therapy while the patient was in the hospital and the researchers continued the second, third, fourth and fifth session by doing home visit. After completing each meeting, the researcher reminded the respondents to do exercises and activities against negative thoughts and behaviors related to body image and to continue to participate in each session and meeting using mobile communication media.

The respondent's exercise book is monitored continuously by the researcher at each meeting with the aim of evaluating whether the exercise book is filled in or not and evaluating the results obtained from how to fight negative thoughts and behaviors carried out by the respondent. The researcher also assessed the patient at each meeting to evaluate whether the patient could continue at the next stage/session. Whereas the control group received routine treatment from the hospital without being given CBT intervention. After that, researchers conducted a post-test to identify changes in body image using the MBSRQ questionnaire after a total of seven meetings (3 weeks) in the intervention and control groups.

Data analysis was performed using a computerized program that is univariate analysis using frequency and percentage distributions. Before conducting a bivariate analysis, researchers had conducted a normality test using Kolmogorov-Smirnov. The results of normality tests in this study were 0.056 and 0.053 (> 0.05) for the pre test and post test control groups and 0.052 and 0.051 (> 0.05) for the pre test and post test intervention

groups. This shows that the data in this study are normally distributed. Homogeneity test was also carried out using a levene test. Homogeneity test results in this study were 0.634 ( $> 0.05$ ), this shows that the data of this study were homogeneous. Based on the results of normality and homogeneity tests, this study fulfills the requirements for conducting bivariate analysis using parametric tests. Paired t-test bivariate analysis to identify differences in body image of nasopharyngeal cancer patients before and after CBT was performed in each intervention group and control group. Independent bivariate t-test analysis to identify differences in body image of nasopharyngeal cancer patients after CBT between the intervention group and the control group.

### III. Results and Discussion

#### 3.1 Results

Frequency distribution and percentage characteristics of demographic data of nasopharyngeal cancer patients in the intervention and control groups can be seen in Table 1. Table 1 shows the characteristics of respondents in the intervention group the majority of respondents (42.4%) are late adulthood (36-45 years) with an average the age of the respondents was 41.64 years (primary school = 10,199). More than half of the respondents were male as many as 26 people (78.8%), the most ethnic group was Batak, 16 people (48.5%). Based on the level of education the majority of respondents had a high school education of 15 (39.4%) and based on work the majority of respondents were private workers (self-employed) as many as 16 people (48.5%) and had been diagnosed with nasopharyngeal cancer for more than one year a year as many as 17 people (51, 5%), suffering from nasopharyngeal cancer in stage III as many as 22 people (66.7%) and more respondents received chemotherapy treatment as many as 18 people (54.5%). In the control group, the majority of respondents were in the age group 36-45 years (late adulthood) as many as 15 people (45.5%), with gender as many as 26 people (78.8%), the most ethnic groups were Batak ie 15 people (45.5%), the majority of respondents in the high school-educated intervention group were 15 (45.5%) worked as private workers (self-employed) as many as 16 people (48.5%) and had been diagnosed with nasopharyngeal cancer six months to one year as many as 16 people (48.5%), suffering from nasopharyngeal cancer in stage III as many as 23 people (69.7%) and the majority of respondents received chemotherapy treatment as many as 17 people (51.5%).

**Table 1. Frequency Distribution and Percentage Characteristics of Demographic Data Nasopharyngeal Cancer Patients in Haji Adam Malik General Hospital Medan**

Characteristics of Demographic Data	Group Intervention (and = 33)		Control group (n = 33)	
	f	%	f	%
1. Age				
1. 17-25 Year	1	3,0	1	3,0
2. 26-35 Year	9	27,3	7	21,2
3. 36-45 Year	14	42,4	15	45,5
4. 46-55 Year	7	21,2	6	18,2
5. 56-65 Year	2	6,1	4	12,1
2. Gender				
1. Male	26	78,8	26	78,8
2. Female	7	21,2	7	21,2
3. Tribe				
1. Batak	16	48,5	15	45,5
2. Jawa	10	30,3	12	36,4
3. Nias	4	12,1	2	6,1
4. Aceh	1	3,0	3	9,1
5. Tionghoa	1	3,0	-	-
6. Mandailing	1	3,0	1	3,0
4. Education				
1. Primary School	6	18,2	7	21,2
2. Middle School	11	33,3	8	24,2
3. High School	15	39,4	15	45,5
4. Diploma2/ Undergraduate	3	9,1	3	9,1
5. Job				
1. Civil Servants	-	-	3	9,1
2. Entrepreneurs	16	48,5	16	48,5
3. Farmers	10	30,3	10	30,3
4. Students	-	-	1	3,0
5. Does not work	7	21,2	3	9,1
6. Old NPC				
1. < 6 Month	1	3,0	5	15,2
2. 6 Month -1 Year	15	45,5	16	48,5
3. > 1 Year	17	51,5	12	36,4
7. Stadium				
1. III	22	66,7	23	69,7
2. IV	11	33,3	10	30,3

8.	Treatment				
1.	Chemotherapy	18	54,5	17	51,5
2.	Kemoradioterapi	15	45,5	16	48,5

**Body Image of Nasopharyngeal Cancer Patients Before (Pre Test) and After (Post Test) CBT in Intervention and Control Groups**

Frequency distribution and percentage of body image of nasopharyngeal cancer patients can be seen in Table 2. Table 2 shows that body image before CBT (pre-test) in the intervention group the majority of respondents had negative body image of 30 respondents (90.9%). While the body image after the CBT (post test) action in the intervention group the majority of respondents had a positive body image of 29 respondents (87.9%). Body image before without CBT (pre-test) in the control group the majority of respondents had negative body image of 29 respondents (87.9%). While the body image after without CBT (post test) in the control group the majority of respondents still have a negative body image of 28 respondents (84.8%).

**Table 2. Frequency Distribution and Percentage of Body Image of Nasopharyngeal Cancer Patients Pre Test and Post Test in the Intervention and Control Groups**

Body Image	Intervention Group (n=33)				Control Group (n=33)			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
Positif	3	9,1	29	87,9	4	12,1	5	15,2
Negatif	30	90,9	4	12,1	29	87,9	28	84,8

**Differences in Body Image of Nasopharyngeal Cancer Patients Before (Pre Test) and After (Post Test) CBT in Intervention and Control Groups**

According to Polit and Beck (2012), paired t test is a test used to identify differences in the mean dependent (body image) before (pre test) and after (post test) cognitive behavioral therapy actions in the intervention group and the control group can be seen in the Table 3 and Table 4.

Table 3 shows that in the intervention group there were differences in mean values between pre-test (Mean = 174.58) and post-test (Mean = 235.52). The results of the analysis using paired t-test statistical tests in the intervention group obtained a tcount of 18.06 > ttable 2.03951, it can be concluded that H<sub>0</sub> was rejected. Based on the significance value obtained by p value in the intervention group (α = 0,000, p < 0.05), then H<sub>0</sub> was rejected. Thus the results of the study showed that there were significant differences between body image in the intervention group before cognitive behavioral therapy (pre-test) and after cognitive behavioral therapy (post test).

Whereas in the control group in Table 4 shows there is no difference in the average value between the pre test (Mean = 177.70) and post test (Mean = 178.00). The results of statistical analysis obtained the t-value of 0.406 < t table 2.03951, it can be concluded that H<sub>0</sub> is accepted. Based on the significance value obtained p value (α = 0.687, p > 0.05), then H<sub>0</sub> is accepted. The results of the study showed that there was no difference in body image between pretest and posttest in the control group because the control group did not receive treatment or cognitive behavioral therapy intervention.

**Table 3. Differences in Body Image Before (Pre Test) and After (Post Test) Done CBT in the Intervention Group**

Body Image	N	Mean	SD	t	Sig
Pre-test	33	174,58	15,97	-18,06	0,000
Post-test	33	235,52	18,50		

**Table 4. Differences in Body Image Before (Pre Test) and After (Post Test) Without CBT in the Control Group**

Body Image	Control Group	N	Mean	SD	t	Sig
Pre-test		33	177,70	14,32	-0,406	0,687
Post-test		33	178,00	15,76		

**Differences in Body Image of Nasopharyngeal Cancer Patients After (Post Test) Cognitive Behavioral Therapy Between the Intervention Group and Control Group**

The effectiveness of cognitive behavioral therapy on the body image of nasopharyngeal cancer patients can be seen by identifying differences in the body image of nasopharyngeal cancer patients between the

intervention group after cognitive behavioral therapy and the control group without cognitive behavioral therapy. To test these differences can be done using the independent t-test statistical test can be seen in Table 5. Based on Table 5 the results of the analysis using the independent t-test statistical test obtained a tcount of 13.59 > ttable 2.03951, it can be concluded that  $H_0$  was rejected. Based on the significance value obtained p value ( $\alpha = 0,000$ ,  $p < 0.05$ ), it can be concluded that  $H_0$  is rejected. Thus the results of the study showed that there was a significant difference between body image in the intervention group after cognitive behavioral therapy and a control group that did not receive cognitive behavioral therapy at Haji Adam Malik General Hospital Medan.

**Table 5. Differences in Post Image Body Image of Nasopharyngeal Cancer Patients between Intervention Group with Control Group**

Variable	Difference Mean $\pm$ SE	t	Sig
Body Image	-57,515 $\pm$ 4,231	-13,59	0,000

### 3.2 Discussion

Cancer can cause changes in physical appearance to the loss of function in parts of the body. Cancer treatments which include chemotherapy and radiotherapy can also cause physical changes such as hair loss, weight loss, changes in the skin such as curing, peeling and blackening, the appearance of mucositis in the mouth will threaten the body image.

Nasopharyngeal carcinoma patients who receive radical radiotherapy treatment as much as 60% experience desquamation skin reactions (peeling skin) at some time during treatment and can cause interference with body image (Zhong, Tang, Hu and Feng, 2013). In addition, radiation therapy also causes deficiency of one or more anterior pituitary hormones for KNF when the hypothalamic-pituitary (h-p) axis is in the radiation field and long-term effects can cause endocrine disruption. Most endocrine disorders are irreversible and progressive and have adverse effects on body image, sexual function, fertility, muscle and bone health and ultimately the quality of life of KNF patients (Darzy, 2012). Body image in cancer patients is influenced by other factors such as fear of dependence on others, loss or distance from those close to them, physical and mental weakness, uncertainty about future disease recovery, and unbearable pain (Bahrami et al. , 2017).

The results showed that there was an increase in positive body image after CBT in the intervention group, whereas in the control group there was no increase in body image. The results of this study are in line with research conducted by Cassone, Lewis, and Crisp (2016) which states that respondents who are given cognitive behavioral group therapy interventions can improve positive body image, as reflected in an increase in the level of self-esteem, body satisfaction, quality of life and reduced self-control and shame on the body. The increase in respondent's body image was caused by the lack of attention to the physical changes they experienced due to cancer. Faraji, Mahdavi, Samkhaniyan, Asadi and Dezhkam (2015) in their research explained that cognitive behavioral therapy contributes to the reduction of self-image attention in breast cancer patients who have concerns about changes in the body due to disease and cancer treatment they experience.

Ahmadi et al. (2017) also found that in the intervention group after cognitive behavioral therapy an increase in body image dimension scores such as performance evaluation, appearance orientation, fitness evaluation, fitness orientation, and satisfaction with body areas.

CBT encourages individuals to do activities that create more positive feelings about their appearance and can also improve fitness evaluations. In addition, therapy causes positive changes in body area satisfaction through mirror desensitization and encourages positive self-talk.

Based on the results of this study indicate that there is a significant difference between body image in the intervention group before cognitive behavioral therapy and after cognitive behavioral therapy. Whereas in the control group there was no difference between body image. In line with research conducted by Fadaei et al. (2011) who found that there was no change in body image in the control group ( $t = -1,723$ ,  $P = 0.093$ ), but in the intervention group found significant body image differences between before cognitive behavioral counseling and after cognitive behavioral counseling ( $t = 12.41$ ,  $P < 0.001$ ). Other studies that are in line with this research are studies conducted by Ahmadi, Abbaspoor, Behroozy, and Malehi (2017) found that the results of the analysis in the experimental group were significant differences in all dimensions of body image between before and after cognitive behavioral group therapy ( $P < 0.05$ ), except for the dimensions of fitness orientation and body categorization. However, no significant body image differences were found in the control group ( $P > 0.05$ ).

According to Rahbarian, Tarkhan and Jalali (2012) to help individuals control thoughts and feelings about their appearance can be done with cognitive behavioral therapy. CBT can reduce individual attention to the difference between their real appearance (current body image) and their desired body (ideal body) which is one of the most important factors that cause disruption of body image (Garrusi, Garousi and Baneshi, 2013).

The results of the analysis using the independent t-test statistical test showed that there were significant differences between the body image in the intervention group after cognitive behavioral therapy and the control group that did not receive cognitive behavioral therapy treatment at Haji Adam Malik General Hospital Medan.

The results of this study are also in line with research by Fadaei et al. (2011) cognitive behavioral counseling for 6 sessions within 3 weeks can reduce body image attention in breast cancer patients and show a significantly positive body image score in the intervention group compared to the control group after the intervention ( $P < 0.001$ ). Navidian, Moudi and Esmaealzade (2017) research also revealed the results that cognitive behavioral group therapy conducted for 3 weeks can increase satisfaction with body area ( $p = 0.0001$ ), improve performance evaluation ( $p = 0,0001$ ), and increase scores average body image ( $p = 0.0001$ ). Other related research was carried out by Lewer et al. (2017) states that cognitive behavioral therapy is significant in reducing symptoms such as dissatisfaction with the body, depression, low self-esteem in a group of women who are overweight ( $BMI > 25 \text{ kg / m}^2$ ).

CBT is done with relaxation techniques that can provide comfort, calm, reduce anxiety and provide a diversion effect on changes in body appearance that occur so as to divert attention to negative body image. Imaginary techniques direct someone to imagine and imagine seeing something, hearing, feeling, smelling, and or touching pleasant things so that they can reduce one's attention to body image. This opinion is supported by the statement of Faraji et al. (2015) that CBT is done with relaxation techniques to deal with stress, to train how to manage excitement, and behavioral techniques such as imaginary and real exposure to reduce attention to negative body image.

CBT is also done by first making a list of body parts that cause dissatisfaction, then doing exposure through mirrors and fostering positive self-talk to increase satisfaction with the body (Ahmadi et al., 2017). CBT helps one gradually deal with parts of the body that cause discomfort by using relaxation techniques, and gradually reduce tension, pain, and anxiety, thereby getting a sense of satisfaction with the body (Faraji et al., 2015). This means that CBT teaches cognitive skills that lead to better self-perception so that changing unpleasant thoughts or actions become more positive.

CBT encourages individuals to pay less attention to the difference between real appearance (current body image) and desired body (ideal body). This training is carried out through monitoring and enhancing self-efficacy with cognitive restructuring. In this way, individuals can improve their self-concept and eliminate threatening factors by challenging their opinions and beliefs about their appearance, then evaluating those opinions and beliefs and replacing irrational thoughts about body changes to more positive thoughts (Cash, 2012). This shows that CBT can correct cognitive errors related to changes in body appearance so as to reduce bad stigma and beliefs about negative body image.

The influence of cognitive behavioral therapy on performance evaluation is related to the emphasis on the model of privacy dialogue on individuals about their appearance, finding activators, beliefs and consequences through measures such as careful self-monitoring, introducing and correcting cognitive distortions and poor perception of body changes (Navidian et al., 2017). The application of cognitive behavioral therapy in this study emphasizes recognizing and correcting perceptions related to cognitive appearance and distortion. In addition, CBT also emphasizes internal dialogue, training in exposure skills through mirrors, and preventing responses, engaging in breathing relaxation techniques, encouraging individuals to do activities that create more positive feelings about their appearance. The series of therapies and training impact will improve positive body image or reduce disruption of body image in nasopharyngeal cancer patients.

## **IV. Conclusion and Suggestion**

### **4.1 Conclusion**

Based on the results of the study there were significant differences between body image in the intervention group before and after cognitive behavioral therapy, whereas in the control group there were no differences in body image before and after without cognitive behavioral therapy. This study also showed the results that there were significant differences in body image between the intervention group after cognitive behavioral therapy and the control group that did not receive cognitive behavioral therapy, so that it was concluded that cognitive behavioral therapy was effective in improving the body image of positive nasopharyngeal cancer patients in the intervention group.

### **4.2 Suggestion**

CBT is expected to be one of the general materials for nursing that can be applied and the need to equip nurses with workshops or training. It is recommended for nursing services that CBT be part of both independent and collaborative nursing interventions implemented as one of the nonpharmacological interventions in helping psychological problems (body image) in cancer patients especially nasopharyngeal cancer, so as to provide holistic nursing care bio-psycho socio and cultural. For further research, it is recommended to do a follow-up to maximize patient recurrence prevention and pay attention to equality in the patient's chemotherapy treatment

cycle which may have an effect on the body image of nasopharyngeal cancer patients and it is recommended that future studies conduct research using qualitative or mixed design methods to dig deeper into dimensions of body image in nasopharyngeal cancer patients.

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