COGNITIVE BEHAVIOR THERAPY FOR GENERALIZED ANXIETY DISORDER: A CASE STUDY OF ARRHYTHMIA PATIENT

Putri Dewinta[1]; Adhityawarman Menaldi[2]

[1,2]Department of Clinical Psychology, Faculty of Psychology, University of Indonesia
Jl. Margonda Raya, Pondok Cina, Depok 16424, Indonesia
[1]putridewintakinan@gmail.com; [2]adhityawarman.menaldi@ui.ac.id

ABSTRACT

This research aimed to test the efficacy of Cognitive Behavior Therapy (CBT) and psychoeducation methods to decrease anxiety level in arrhythmia patient. Besides that, it was also to discuss how CBT could reduce anxiety level on a subject who had Generalized Anxiety Disorder (GAD) and also had the medical disease. This research used the qualitative method. The subject in this research was a 22-years-old single female, called S (initials), who came to community health center (Puskesmas) to get help regarding her uncomfortable feelings about her thoughts and concerns. The subject was given a pre-post test using Hamilton Anxiety Rating Scale (HARS) to see the differences in the anxiety level before, during, and after the treatment. Results of the research show that the level of anxiety in the subject is decreased. The categorization score goes from "very severe anxiety" to "moderate anxiety". The subject also conveys on the last session that she feels less anxious and that she can control her negative thought.

Keywords: *anxiety, GAD, arrhythmia, CBT, psychoeducation*

INTRODUCTION

Anxiety is a complex state of feeling associated with fear and often accompanied by physical sensations such as palpitations, shortness of breath, or chest pain (Keliat, Wiyono, & Susanti, 2012). According to Suliswati (in Hursepuny, Sriati, & Fitria, 2015), anxiety is a form of individual response to an unpleasant event on a daily basis. Anxiety is identified by transient fear, uncertainty, and apprehension about the future, but the individual has various experiences of anxiety frequency and intensity (Barlow, 2002). Cohen, Edmondson, and Kronish (2015) have stated that when individual experiences frequent anxiety at high intensities with or without inappropriate situation, they may be diagnosed with anxiety disorders, which one of them called Generalized Anxiety Disorder (GAD). It is characterized by periods of excessive worry and anxiety about a number of events and activities for at least six months (American Psychiatric Association, 2000). This disorder encompasses as a chronic condition of anxiety characterized by excessive and uncontrollable worry and associated somatic symptoms. In contrast to other anxiety disorders, GAD implicates diffuse anxiety with the absence of a specific feared object, class of stimuli, or situation. Individuals suffering from GAD tend to fear and avoid an array of subtle internal and external stimuli (Hazlett-Stevens, 2008).

Anxiety is also a particularly common situation on individual who has cardiac disease (Halm, 2009). This is presumably because anxiety will occur when a person is threatened both physically and psychologically (Asmadi, 2008). Based on Mann et al. (2015) rapid and the sudden advance of cardiac disease is a severe and frightening psychological experience, which anxiety being a common response. If anxiety is untreated among cardiac sufferer, the consequences are serious and yet are infrequently assessed or manage appropriately. Several researchers have reported that the presence of anxiety symptoms is an independent predictor that make functional status worse, lower health-related quality

of life, and more frequent re-hospitalizations (Dekker et al., 2014). Specifically, anxiety disorders appear to be associated with a higher risk of stroke, heart attack, heart failure, and death among individuals who have heart disease (Martens et al., 2010). Besides that, a high level of anxiety has been linked to a worse prognostic outcome in cardiovascular disease patient (Kornerup, Zwisler, & Prescott, 2011).

One of the cardiac diseases is the arrhythmia. Arrhythmia is an abnormal rhythm of the heartbeat, which can occur in the aspect of either rate, regularity, or site of impulse origin or the sequence of activation (Dorland, 2011). Arrhythmia is a disorder of a heart rhythm referring to any disruption of the location of the upper heart, frequency, regularity, or conduction of cardiac electrical impulses. Most people occasionally experience an irregular heartbeat sometimes quickly, sometimes slowing down. Meanwhile, the arrhythmia causes the heartbeat to become too fast, too slow, or irregular (Thaler, 2013). Thus, Hanafi (2001) has stated that some types of cardiac arrhythmias can cause health problems or even to life-threatening. In the western world, cardiac arrhythmias are one of the most common causes of death, and specifically, a sudden death (Sabhan, 2015). Besides mortality, it is also associated with morbidity, such as stroke (Luscher, 2016).

Anxiety in heart disease patients also may give a bad effect on quality of life, increased ischemic, and recurrent hospital admissions that will ultimately increase mortality (Nurlindayanti et al., 2015). Anxiety on individual who has heart disease may bring medical or psychological consequences, such as treatment adherence difficulties, lifestyle changes, risk behavior, increased risk of acute heart disease, and increased risk of complications of acute coronary syndromes. Hence, treatment of anxiety should be part of the care of every cardiac sufferer in order to enhance recovery and decrease the risk of recurrent cardiac events (Moser, 2007). Few types of research have shown the findings of treatment for cardiac patients. Referring to the research about children with respiratory sinus arrhythmia (RSA) condition who have posttraumatic stress symptoms, cognitive behavioral therapy (CBT) is found as a treatment that able to change the physiological states of the subjects (Lipschutz et al., 2017). Meanwhile, Westra and Phoenix (in Mawandha & Ekowarni, 2009) have stated that CBT is one of the most effective therapeutic approaches to overcome anxiety. According to these findings, CBT is one of the methods that can treat the subject with psychological problems as well as a medical condition, specifically arrhythmia.

Experts have long developed the methods of CBT in dealing with clients with anxiety disorders and depression. CBT is a form of psychological treatment that focuses on the patient's thoughts, feelings, and behavior from a learning perspective and has proven to be quite effective for anxiety and depression disorders (Zakiyah, 2014). CBT emphasizes the importance of cognitive and behavioral changes to reduce symptoms and improve one's affective function. Not only improves cognition, but it also changes behavior because behavior change can have a powerful effect on mindset. The purpose of CBT is to correct the wrong beliefs. One's belief may change frequently, and it will affect mood, physical, and behavioral. Barlow (2002) has stated that individuals can overcome one anxiety by using more adaptive thinking, habituation, and decatastrophization of feared prediction by restructuring one distortion in perceptions and combined it with exposure-based therapies.

Referring to Westbrook, Kennerley, and Kirk (2011), CBT is a treatment that can help individuals to think more rational by using principles and laws of behavior. It is intended that the individual has the ability to recognize and then evaluate or change the way of thinking, beliefs, and feelings about oneself and environment. The purpose of this treatment is for individual change the maladaptive behavior by learning self-control skills and effective problem-solving strategies. According to Greer et al. (2010), the goal of CBT is to break the negative cycle that is tailored to the cognitive, behavioral, and physiological area, which reinforce subject adaptive coping on both anxiety and medical symptoms. In cognitive area, the objective is to conduct the cognitive restructuring techniques to correct negative distorted thoughts and direct it to be more logical and adaptive. While in behavior area, techniques used are activity scheduling, social skills training, and assertiveness

training. In the physiological area, the techniques include the imagery, meditation, and relaxation. CBT can be used as an alternative or in combination with other treatment methods (Yousefy et al., 2010). In this research, the treatment is combined with psychoeducational intervention. Donker et al. (2009) have stated that psychoeducational intervention is a method that provides information, education materials, or feedback or advice. Psychoeducation is an intervention in which education is offered to individuals with psychological disorders or physical illnesses. Referring to the study conducted by Bashiri, Aghajani, & Alavi (2016), psychoeducational program evidently improves mental health and decreases somatic and psychological symptoms, such as anxiety and depression in patients with coronary heart disease.

Referring to this case, this research aims to test the efficacy of CBT and psychoeducation treatment methods in reducing anxiety level in arrhythmia patient. Considering that the subject of this research also has the physical health problem, arrhythmia, the same method is also applied to reduce the anxiety level relating to the cardiovascular disease. The psychoeducation method is also conducted to enlighten subject knowledge about anxiety and arrhythmia disease. This research is a single subject study focusing on one patient who diagnosed suffered from arrhythmia and seeking psychological help in community health center. According to Dunbar et al., (2012), clinical professionals may overlook the psychosocial distress created by the underlying arrhythmia and its potential treatments. There are relatively fewer types of research about the treatment for the individual with GAD that also suffer from specific heart condition such as arrhythmia. Nonetheless, many research has enlightened the potential of CBT in treating the patient with the cardiac illness. Research about implantable cardioverter defibrillator (ICD) shows that the CBT is an effective treatment for the patients who have depressive and anxiety symptoms (Maia et al., 2014). Ansari and Arbabi (2014) have stated that one of the concerns of ICD patients is fear of recurrent arrhythmias, and they also have difficulty facing life-threatening arrhythmias. However, the research shows that cognitive behavioral interventions find to be helpful to reduce the patient's psychological sufferings. Based on the outlined literature review, CBT is found to have efficacy on carrying out the desired result on psychological healthiness in the subject with certain medical illness. Hence, this research is expected to enhance new research finding. It is also expected to contribute in the development of intervention program and may be generated further study on the related topic.

METHODS

This research uses the qualitative method. The subject in this research is a 22-years-old single female, called S (initials), who comes to community health center (Puskesmas) to get help regarding her uncomfortable feelings about her thoughts and concerns. S comes from a middle-class family. She is a second child of two siblings; her sister is only one year older than her. S is currently pursuing a Bachelor's degree in one of the universities in Jakarta, and spending most of her time on campus. Lately, S claims that her concerns about many aspects of her life. These concerns are about social relationships, family problems, and the romantic partner. About her social relationships, S often feels that her friends are avoiding her and constantly talking behind her back. S feels betrayed because of it. S admits that she does not know exactly what makes her think that way, but she is pretty sure that something goes wrong with her social circle, which makes her anxious.

Meanwhile, S also has the family problems. S and her sister are often fighting over small things, for example, housework or clothes. When she and her sister fight, S always feels that her mother always defends her sister, no matter what the problem is. Because of that, S convinces that her mother loves her sister more, and that makes her even more anxious. Another thing that disrupted her is about the romantic partner. S is feeling insecure that she has been single for about half year. S tries to hang out more and even joins an online dating platform, but she still does not manage to find a romantic partner. S admits that sometimes she stalks her former boyfriend on the internet. She finds

that he already has a new girlfriend, and that makes her feel sad and apprehensive. S begins to think that she is not attractive; therefore no one would date her. This problem has worsened her anxiety. She is worried that she may end up alone until the rest of her life.

Furthermore, S also complains that she concerns about her health condition. She has stated that she has been continuously worried and anxious about healthiness and most importantly, she often thoughts about her death. S claims that this has been going on for at least one month. She has reported that the trigger must be an event when she visited a cardiologist. S is diagnosed with arrhythmia, a condition where one has an irregular or abnormal heartbeat rhythm. After the diagnosed, she begins to search for the information about the disease via the internet and finds herself frightened. She has been thinking about disease all day makes her unable to sleep and frequently had a nightmare. S states that she feels anxious and worried that she will die soon. Apart from her anxiety is caused by arrhythmia disease, S claims that her anxiety about several aspects of her life has been going on for about six months. This situation has disrupted her daily activity. She constantly feels anxious, worry, irritable, and noticed that her heart rate increased. She does not know what to do to solve her problems and find it difficult to concentrate during the day and has trouble to sleep during the night. Assessing the reported symptoms according to DSM-IV-TR, S has been diagnosed with GAD. In this case, the situation of S who just diagnosed by the doctor for having an arrhythmia disease also contributes more anxiety related to the disease, while she also has GAD.

Using the case report, this research monitors the subject's level of anxiety before, during, and after the intervention. Hamilton Anxiety Rating Scale (HARS) questionnaire is being used for assessment. According to Hawari (2011), anxiety can be measured by HARS. The scale on HARS able to measure how far the anxiety level of individuals, whether its mild, moderate, heavy or very severe. HARS is originally developed by Max R Hamilton and has been used in previous research by Badrya (2015). Besides given the HARS questionnaire, the subject is also asked to write down her thoughts and feelings to see the effectiveness of the treatment.

CBT and psychoeducation are chosen as a treatment in this research. Referring to Bashiri, Aghajani, and Alavi's (2016) research indicates that CBT, psychoeducational programs, and the establishment of support systems indicate reduced distress, anxiety, depression, and certain psychological problem. This research focuses only on CBT and psychoeducational methods to reduce anxiety in arrhythmia patients. The treatment is conducted intensively in five sessions in a span of three weeks. The duration of each session is 90 – 120 minutes. Referring to Megawati (2014), therapy sessions can be done in the minimum of five sessions, as long as it can follow the subject progress towards the therapy sessions. The CBT treatment design is referred to Greer et al. (2010). In the first three sessions, therapy is focusing on the cognitive area, while in the last two sessions, the subject is being focused on behavior area. Meanwhile, the methods involving physiological is conducted in every session. According to Zakiyah (2014), CBT implementation can be done in five sessions with the core of the sessions are; (1) identify negative thoughts and its effect on behaviors, (2) the use of rational response to negative thoughts, (3) modify negative behaviors to positive behaviors, (4) evaluate the development of positive thoughts and behavior, (5) explains the importance of psychopharmacology and modality therapy to prevent relapse and to maintain and cultivate positive thoughts and behaviors. On the other hand, the CBT treatment is also combined with psychoeducation about anxiety on arrhythmia disease. This is because the purpose is not only to change subject's cognitive and behavior process but also to make subject gain knowledge about anxiety and arrhythmia disease. Table 1 provides an overview of the intervention process undertaken to S.

The design of this research is a pre-post single-subject design. The changes in the anxiety level are being monitored before (session 1), during (session 3), and after the treatment (session 5), as seen in Table 1. Before conducting the assessment and the treatment, the subject is informed about the purpose of the intervention and the study. The informed consent is also being consent read, discussed, and signed by the first author and the subject. Data analysis is conducted by comparing subject's score

between the pre-post assessment. This analysis is also supported by created the comparison chart of subject's assessment score, and the treatment summary consisted of observation and interview results of the subject.

Table 1 Course of Treatment

Session	Brief Description
Session 1	Introduction to the therapy session, negative thoughts identification, the introduction of breathing relaxation techniques. In this sessions, the therapist gives time for the subject to elaborate the problems, and to build awareness about how the problems will give an effect on one's life. Therapist also leads a breathing relaxation techniques, the stages consist; (1) sit comfortably with one hand on chest and the other on the stomach, (2) breathe through nose, (3) exhale through mouth, pushing out air as much as possible, (4) continue to breathe in through nose and out through mouth and count slowly.
Session 2	This session starts with breathing relaxation with the same stage as the previous session. The therapist then conducts verbal psychoeducation about anxiety and arrhythmia disease. The session continues with the introduction to self-talk and ABC techniques (discussion and exercise). The purpose of this technique is to let the subject uses the rational response to negative thoughts.
Session 3	The therapist continues to start the session with breathing relaxation and verbal psychoeducation. The therapist then proceeds to the introduction of cognitive restructuring techniques (discussion and exercise) and gives the subject the cognitive restructuring homework. The purpose of this session is to change subject's negative behavior to be more positive.
Session 4	In this session, the therapist conducts breathing relaxation, homework discussion, and insight from subject's perspective. The therapist evaluates the development of the thinking and behavior process in the subject.
Session 5	The last session is consisted of breathing relaxation and reviewing all sessions. The therapist also terminates the therapy sessions and discusses with the subject about how to maintain and cultivate positive thinking and behavior in the future.

RESULTS AND DISCUSSIONS

The results show that there are differences of anxiety level between before, during, and after the treatment for S. The score of anxiety on the pretest is 55, while the score of the test during the treatment is 39, and the post-test is 27 (Figure 1). The categorization of the result goes from "very severe anxiety" (score 42 – 56) to "moderate anxiety" (score 21 – 27).

Specifically, the differences in the anxiety level lie on the cognitive process and behavior on S, which is being assessed by an observation and counseling questions before and after the treatment. It can be seen in Table 2.

The results of this research show that the intervention using CBT and psychoeducation methods can help reduce the level of anxiety on the subject who also has arrhythmia disease. The anxiety level appears to be reduced by 29% (from score 55 to 39) during the treatment. Meanwhile, the overall decreased on anxiety level is reduced by 51% (from score 55 to 27). This percentage suggests that the anxiety level of S is diminished gradually from before, during, and after the treatment. This can be explained by the observation and interview result that shows in treatment summary (Table 2). In the first meeting, S denotes several features of anxiety, such as jittery and nervous behavior. Subject's observed behavior is in line with the study conducted by Young (1991) which has stated that individuals generally appear jittery and nervous when they are manifest the anxiety.

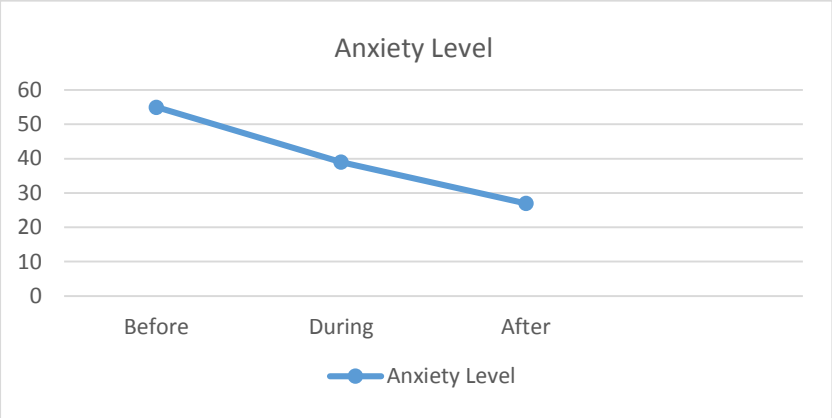

Figure 1 Anxiety Level Before, During, and After the Treatment

Table 2 The Treatment Summary

Before Treatment	After Treatment
S came to the session looked very swollen and jittery. She looked nervous as she trembled and her voice was soft and quivered. She cried several times when she told her problems.	On the last session, S looks more relax and fresh. Her voice is still soft, but she is able to reflect herself and talks the discussion on the previous session calmly.
S complained that she had been worried and afraid about her cardiovascular disease. S stated that she felt afraid that she would die soon because of it.	S says that she is realized that she should do something about her disease rather than just to be worry and afraid about it. She also states that her fear of death is a form of her negative thoughts and illogical.
S said that she could not sleep well and had a nightmare that made her link it to her death.	S claims that she practices breathing relaxation at home. After the practice, she sleeps better and no longer has the nightmare.
S concerned that her friends were avoiding her and talking behind her back.	S realizes that she has negative thoughts about her social relationship because she does not spend much time with her friends. She also says that there is no evidence about her thoughts that her friends are talking behind her back.
S complained that she had been anxious that her mother loved her sister more.	S admits that she still thinks that her mother loves her sister more. However, she claims that she tries being reasonable about it.
S feared that she never be able to find a romantic partner in her life.	S realizes that she fears about never be able to find a romantic partner because she was also being picky and shut out the possibility to try with a man that is actually approaching her. S also admits that she had not been open to any opportunity she had.

The decreased level of anxiety also can be analyzed by subject's cognitive process. The techniques on the exercise and homework in particular sessions aim to monitor subject's cognitive process. Before the treatment, S has an automatic negative thought on several things in her life. The effect of this cognitive pattern leads S to the behavior where she often feels anxious, worry, easily cry, difficult to concentrate and to sleep, and even afraid of her own thoughts. There is also the physical effect on S, where she feels her heart rate increased. Meanwhile, after the treatment, S has reported more positive and rational thoughts on her previous concerned. For example, S able to find the potential reason of why her relationship quality with her friends is worsened and why she is constantly anxious and feels difficult on finding the romantic partner.

A caused factor of anxiety may come from internal or external factors. Asmadi (2008) has divided the anxiety caused factor into two categories; (1) threats to personal integrity, and (2) threat to the self-system. In this case, S has both factors. The threats to personal integrity are about individuals who have physiological inadequacy. In the past months, S just found out that she had the arrhythmia. After a doctor visit and online research, S became worried and anxious about her disease, which represented the knowledge of her physiological inadequacy. The other factors are the threat to the self-system, which talk about self-identity, self-esteem, loss of status, and interpersonal relationship. S claims that she is facing difficulties with her social relationships. S also do not get along really well with her sister and her mother. Meanwhile, her self-esteem is threatened by her dating status, which led her to think that she is not attractive and desired.

The range of individual responses to anxiety fluctuates between adaptive and maladaptive responses. The most adaptive range of responses is anticipation where the individual is ready to adapt to the anxiety that may arise. While the maladaptive range is a form of panic response where individual is no longer able to handle the anxiety, and that this will affect physical, behavioral, and cognitive disorder (Stuart, 2007). Referring to this case, the result of HARS assessment showed that the anxiety level experiences by S has decreased from "very severe anxiety" to "moderate anxiety". This means that after the treatment, S able to formed more adaptive responses to handle her anxiety, following the decreased of her anxiety level. During the last session, S stated that if she noticed that she started feeling anxious, she practiced breathing relaxation, that made her feel less anxious and calmly. S also reported that she tried to recognized and stop her negative automatic thoughts by writing it down every time she feels uncomfortable, and then try to counter it with a more positive and reasonable thinking. This result is in line to the study about anxiety, stated that the more maladaptive the individuals response to anxiety, the more severe the level of anxiety will be experiences (Muliawati, 2015).

Each level of anxiety has different characteristics or manifestations. This manifestation depends on personal maturity, understanding the challenges, self-esteem, and coping mechanisms (Stuart, 2007). Before treatment, S has "very severe anxiety" level, while after treatment, S has "moderate anxiety" level. This can be explained by anxiety level theory referring to Sundeen (in Asmadi, 2008) who has stated that individuals with severe anxiety level cognitive process tend to focus on something detailed, specific, in order to reduce the tension that she feels. This is explained how her automatic thoughts are focusing on her fear of death, family and social relationships, and romantic partner, but at the same time, she finds it difficult to concentrate on another thing. The behavior observation also shows that she tends to talk fast, often shifts in her couch, jittery, and trouble sleeping, which represent an individual with severe anxiety level as well. Meanwhile, S has different cognitive process and behavior after the treatment. Individuals who have moderate anxiety is allowing one to focus on what is important and putting things aside so that one experiences selective attention but can do something more direct (Sundeen in Asmadi, 2008). After the treatment, S sometimes still tends to focus on her negative automatic thoughts. However, she can be more directed at focusing her attention on the more important things. It appears that S begins to show changes in cognitive process and behavior. The cognitive process goes from negative automatic becomes more rational and positive. She is able to think of an action rather than just to be anxious and worry about her concern. On the other hand, S behavior also changes to become calmer, more relax, and talk less fast in the last session.

Besides CBT, the psychoeducation methods seem effective for her anxiety related to the disease. S becomes more aware that her negative automatic thoughts lead to anxiety. S realizes that she experiences fear of death because she is not yet doing an undergoing treatment for her arrhythmia disease. She also notices that she should regularly consult with a professional doctor rather than doing internet research, which makes her more worried and trouble to sleep. Overall, the psychoeducation methods are used to increase the awareness that can make her think more reasonable and to form the concrete action related to the physical healthiness.

This result is in line with research conducted by Yousefy et al. (2010). The research has stated that CBT is effective for reducing anxiety in cardiac patients. The effect of cognitive restructure can reduce the anxiety, thought control, and relaxation. Oemarjoedi (2003) has also stated that CBT may be the effective therapy for various problems, such as anxiety, chronic pain, depression, sleeping problem, eating problems, and other healthiness problems. This research may give contributions to the clinical psychology science about how the cognitive-behavioral treatments can reduce the anxiety symptoms, following the subject's condition on arrhythmia disease, as well as GAD. Hence, this treatment design is expected to be conducted on further intervention program or to be used as the reference in future research.

CONCLUSIONS

Many types of research show that CBT is effective in reducing anxiety level, but few of them show its results on a subject with the medical disease. In this research, CBT proves to be effective for a specific cardiovascular problem, such as arrhythmia. Psychoeducation methods are also considered to be useful to escalate subject knowledge about the disease. Nevertheless, there are limitations to this research. First, this research conducts the treatment in a brief period of time without follow-ups. This may be a drawback of the treatment effectiveness and accuracy. Another limitation is that this research only focuses on a single subject that may be the potential shortcoming on the representativeness of the research. However, these shortcomings can be the basis for the future research. The methods that are used in this case study can be replicated for the further research but with the larger sample and with longer time spans. Moreover, future research should also find out about the effective intervention for psychological issues in other cardiac diseases. This suggestion regards to the lack of research about the issues experienced by various types of the cardiac sufferer. Furthermore, to promote not only physical but also psychological healthiness, the therapeutic and educational protocol can be used in the hospital or cardiac rehabilitation as a part of the treatment for cardiac patients.

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