

# Acceptance and Commitment Therapy (Act) on Increasing the Compliance of Management Diabetes Mellitus Type 2

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**Abstract---** *Diabetes Mellitus (DM) cannot be cured but can be managed by adhering to the four pillars of DM management. A stressor occurs in patients when all their lives are required to comply with the rules for managing diabetes mellitus. Compliance with the management of the disease is one indicator of the success of patients in a treatment. Acceptance and Commitment Therapy (ACT) is a method to help individuals manage their illness and to improve the adherence of type 2 DM patients. The purpose of this study is to prove the influence of Acceptance and Commitment Therapy (ACT) in improving adherence to type 2 diabetes mellitus management. This study is a quasy experiment using method pretest posttest with control group design. Respondents in this study were patients with type 2 DM as many as 50 people and were taken by simple random sampling technique and divided into two groups, namely the intervention group and the control group. Data on compliance was obtained using a questionnaire measuring instrument. The intervention group will be given Acceptance and Commitment Therapy (ACT) for four weeks. The results of data analysis using Paired t-Test and Independent t-Test with significance  $p < 0.05$ . The results of the compliance test showed a significant difference between the intervention group and the control group with  $p\text{-value} = 0,000$ . Intervention Acceptance and Commitment Therapy (ACT) is the most influential variable for adherence to patients with type 2 DM with sig 0,000. Intervention of Acceptance and Commitment Therapy (ACT) is effective against increasing adherence to patients with type 2 diabetes. Proactive response so that Acceptance and Commitment Therapy (ACT) can be done well, and for further research it will be better if the measurement of compliance with type 2 DM patients is more developed.*

**Keywords---** *Acceptance and Commitment Therapy (ACT), type 2 DM patients, adherence.*

## I. INTRODUCTION

Diabetes Mellitus (DM) is a chronic disease characterized by blood glucose levels that exceed normal values. People with DM must comply with the management rules that have been programmed by health personnel (Vugt et al, 2013). DM prevalence in East Java province in 2016 was 431 thousand cases. The city of Surabaya has the most cases of type 2 diabetes in East Java Province. In 2016, in Surabaya City there were 34 thousand cases of type 2 diabetes mellitus, the number increased from 2013, which were 18 thousand cases of type 2 diabetes (Surabaya City Health Office, 2017).

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Management of DM can be used to manage DM disease which cannot be cured with four pillars that must be obeyed by patients who include diet, regular exercise, providing health education, and taking medication. A stressor occurs in patients when all their lives are required to comply with DM management rules (Purba, 2008). Patient compliance with the management of the disease is one indicator of the success of a treatment. Treatment compliance in patients with type 2 DM must also be followed by improving the quality of health services, attitudes and skills of their officers, as well as the lifestyle of patients and their families. Awareness of patients with type 2 DM itself is able to produce optimal compliance in managing the disease suffered so that it can prevent treatment failure. The impact of failure of these therapies can lead to very fatal complications (Kim et al, 2012).

The success of management of type 2 DM needs to be improved by trying to accept and adapt to the changes that occur and build commitment to deal with problems. The reason for this commitment is explained in the transition theory Meleis namely nursing therapeutic concept (Tomey & Alligood, 2010). Optimal health is a life support for people with type 2 diabetes mellitus to be productive.

Acceptance and commitment therapy (ACT) is one form of cognitive behavioral therapy (CBT) that is used to improve the ability to undergo changes experienced to be better (Hayes, 2010). Cognitive changes that occur are positive thinking, stable emotional response, positive problem solving, good social support between individuals in the group, good acceptance and commitment in carrying out tasks well (Eilenberg et al, 2013). The researcher tried to prove that ACT as one of the efforts to improve the adherence of type 2 DM patients which gave rise to improvement in patient behavior in managing the four pillars of the DM with the approach of Transition Theory Meleis

## **II. METHODOLOGY**

Research OF Quasy Experimental with pre-posttest design with control group. The researcher will involve the intervention group and the control group, then the intervention group and the control group will be given information on the pillar of DM management and pre-test, in the form of measurement of compliance, then the intervention for Acceptance and Commitment Therapy (ACT) is given to the intervention group. After four weeks both groups were post-tested. Determination of the sample was carried out in the intervention group and the control group (simple random sampling), namely 25 respondents for the intervention group and 25 respondents for the control group.

The research was carried out at the Rumah Sakit Islam Surabaya A.Yani and carried out from June to July 2019. The research variable consisted of two variables, namely the independent variable was Acceptance and Commitment Therapy (ACT) and the dependent variable in this study was compliance.

## **III. RESULTS**

Data obtained from respondents in the control and treatment groups showed that there were no differences in the characteristics of age, sex, education, and duration of suffering from DM. The homogeneity of the characteristics of the respondents between the control and treatment groups can be concluded accurately without a significant level of difference. The results of the measurement of respondents' characteristic variables by age are in the range of 56-65 years. Age is one of the factors that influence adherence related to the characteristics of DM disease. Physically at the age of the elderly there is a decrease in bodily functions and degenerative problems arise such as suffering from type 2 DM. Older people usually have more responsibility, more following the advice of health workers, more thorough and more orderly in managing their diseases (Glauber et al, 2014) .

Characteristics of respondents by sex were mostly female. According to research by Choudhry et al (2009), compared to men, most women are less obedient in controlling blood sugar. This is because women consider that diet and exercise

are not important in controlling diabetes mellitus. An instant lifestyle, eating a lot and lacking physical activity are factors that make women vulnerable to diabetes mellitus (Korbel et al, 2007). Characteristics of respondents based on the latest education level mostly graduated from high school. The level of formal education allows differences in decision making and knowledge related to health conditions. Respondents who have a good level of knowledge have the opportunity to be more obedient than those with less knowledge (Damayanti et al, 2011).

Research Korbel et al (2009) suggests that positive behavior tends to be carried out by someone who has a high level of education. Meanwhile, Notoadmodjo (2012) suggests that the formation of positive actions is a very important domain of knowledge. Knowledge in patients with type 2 diabetes mellitus regarding the dangers of complications and the benefits of therapy is expected to increase compliance with four things that become a pillar in managing DM at home. The results of the measurement of the characteristics of respondents based on the duration of suffering from diabetes were mostly  $\geq 6$  years. According to Shapiro's study (2008), non-compliance in patients with DM is increasingly high due to patients experiencing long-standing type 2 diabetes. This is due to the complexity and complexity of the treatment program so that changes in the lifestyle of DM patients are needed.

Results of the measurement of compliance variables in type 2 DM patients in the intervention group showed that all respondents experienced increased compliance after being given Acceptance and Commitment Therapy (ACT). The results of the paired t-Test showed that both in the intervention group and the control group both experienced changes with a value of  $p = 0.00$ . The average experience of compliance increases. However, in the control group there was only an increase of 6.97. Meanwhile, the intervention group value of t count is greater, namely 15.89.

The intervention group received an intervention of Acceptance and Commitment Therapy (ACT) for 4 weeks, which means that ACT influences the improvement of adherence to management of type 2 diabetes mellitus. The results of data analysis using independent sample t-Test  $p = 0.00$ . The value of  $p < 0.05$  so that it can be concluded that there are differences in changes in adherence to management of type 2 DM between the intervention group and the control group significantly.

Respondents before being given ACT tend to experience non-compliance. Non-compliance experienced by type 2 DM patients in managing their disease can be prevented by providing education related to the pillar of DM management. There are pillars that must be obeyed by patients who include diet, regular exercise, providing health education, and taking medication. The most important in DM is management diet management or meal planning. Good diet management must meet 3J, namely schedule, type, and amount (Damawiyah and Septianingrum, 2020).

Education of patients in managing DM is one of the important pillars for optimizing treatment therapy. Patient self-management and increased compliance with the recommendations of health workers will be carried out if education is carried out effectively (Susanti and Bistara, 2018). The results of the education can increase knowledge and change attitudes but do not change negative perceptions about DM so that non-compliance can emerge at any time and can worsen the condition of the patient (Hatmanti, 2018).

Acceptance and Commitment Therapy (ACT) is an advanced method to help individuals manage illnesses, especially those that are chronic (Eilenberg et al, 2013). Acceptance and commitment therapy (ACT) is one form of cognitive behavioral therapy (CBT) that is quite effective in improving psychological aspects that are more flexible or the ability to undergo changes experienced to be better (Hayes, 2010). Cognitive changes that occur are positive thinking, stable emotional response, positive problem solving, good social support between individuals in the group, good acceptance and commitment in carrying out tasks well (Eilenberg et al, 2013).

Giving Acceptance and Commitment Therapy (ACT) can affect the behavior of people with type 2 diabetes mellitus to manage DM disease in accordance with what has been suggested by health workers (Hayes, 2010). The aim of ACT focuses on the commitment of family involvement in improving adherence to type 2 diabetes mellitus patients. Contracts with families are the beginning of ACT's intervention to commit to changing negative points of view to be positive regarding management of diabetes mellitus management by increasing adherence to four pillars of diabetes management (Vugt et al, 2013).

The success of ACT's intervention is inseparable from the active role of respondents, families and the availability of time. The role of researchers is very important in coordinating participants in groups and becoming role models. Support and motivation are not only from our selves but from the surrounding environment especially family support is very helpful in the process of increasing the family (Bistara, 2018).

#### **IV. CONCLUSION**

There is an increase in compliance in the treatment group after Acceptance and Commitment Therapy (ACT). ACT intervention was the most influential variable on increasing adherence after being compared with characteristics of age, sex, education, and duration of DM.

Patients with type 2 DM are expected to be able to assess their own ability to carry out health promotion behaviors, in the form of adherence to the management of type 2 diabetes mellitus they have suffered. Management of type 2 DM through Acceptance and Commitment Therapy (ACT) is more regularly carried out, so that it can resolve patient problems more quickly and can be done on an ongoing basis.

#### **REFERENCES**

- [1] Bistara, D.N., & Ainiyah, N. (2018). Hubungan Pengetahuan Dengan Kepatuhan Diet Pada Penderita Diabetes Mellitus Di Posyandu Lansia Cempaka Kelurahan Tembok Dukuh Kecamatan Bubutan Surabaya. *Journal of Health Sciences*, 11(1). <https://doi.org/10.33086/jhs.v11i1.117>
- [2] Choudhry, NK, Shrank, WH, Levin, RL, Lee, JL, Jan, SA, Brookhart, MA, Solomon, DH (2009). Measuring Concurrent Adherence to Multiple Related Medications. *The American Journal of Managed Care*; 15: 7. [www.ncbi.nlm.nih.gov/pubmed/19589013](http://www.ncbi.nlm.nih.gov/pubmed/19589013)
- [3] Damawiyah, S, & Septianingrum, Y. (2020). Efektifitas penerapan diabetes self-management education (DSME) terhadap motivasi penderita dalam mencegah kekambuhan dan komplikasi penyakit diabetes melitus. *Journal of Health Sciences*, 13(01), 81-87. <https://doi.org/10.33086/jhs.v13i01.1391>
- [4] Damayanti, S., Sitorus, R., Sabri, L. (2011). Relationship Between Spirituality and Self-Efficacy with Compliance with Type 2 Diabetes Mellitus Patients in Jogja Hospital. Thesis: University of Indonesia.
- [5] Eilenberg, T., Kronstrand, L., Fink, P., Frostholm. (2013). Acceptance and Commitment Group Therapy for Health Anxiety-Result from the Pilot Study. *Journal of Anxiety Disorders*. 27: 461-468. [www.researchgate.net](http://www.researchgate.net)
- [6] Glauber, HS, Rishe, N., and Karnieli, E. (2014). Introduction to Personalized Medicine in Diabetes Mellitus. *Rambam Maimonides Med J*; Volume 5, Issue 1, e0002. [www.rmmj.org.il](http://www.rmmj.org.il)
- [7] Hatmanti, N.M. (2018). Hubungan Antara Self Efficacy Dengan Quality Of Life Pada Pasien Diabetes Mellitus Tipe 2 Di Wilayah Kerja Puskesmas Kebonsari Surabaya. *Journal of Health Sciences*, 10(2). <https://doi.org/10.33086/jhs.v10i2.136>
- [8] Hayes, S. (2010). Acceptance and commitment therapy: In *Cognitive Behavioral Therapy in Clinical Practice*. New York: The Guilford Press

- [9] Kim, MY, Suh, Sunghwang, Jin Sang Man, Kim SW, Bae, Ji Cheol, Hur Kyu Yeon, Kim, SH, Rha, MY, Cho, YY, Lee, MS, Kim, KW, Kim, JH (2012). Education as Prescription for Patients with Type 2 Diabetes Mellitus: Compliance and Efficacy in Clinical Practice. *Diabetes Metab J* 2012; 36: 452-459. <http://www.ncbi.nlm.nih>.
- [10] Korbel, CD, Wiebe, DJ, Berg, CA (2007). Gender Differences in Adherence to Type 1 Diabetes Management Across Adolescence: The Mediating Role of Depression. *Children's Healthcare*, 36 (1), 83–98
- [11] Notoadmojo, S. (2012). *Health Promotion and Behavioral Sciences*. Jakarta: PT. Rineka Cipta
- [12] Purba, CI (2008) Experience of Disobedience of Patients Against Management of Diabetes Millitus (Phenomenological Study in the context of nursing care at Dr. Cipto Mangunkusumo Hospital, Jakarta). Depok: Thesis
- [13] Susanti & Bistara, D.N. (2018). Hubungan Pola Makan dengan Kadar Gula Darah pada Penderita Diabetes Mellitus. *Jurnal kesehatan Vokasional*. 3(1) : 29-34
- [14] Tomey, M., & Alligood. (2010). *Nursing Theoriest and Their Work*. 6th Ed.St. Louis: Mosby Elsevier, Inc.
- [15] Vugt MV, De Wit M., Hendriks SH (2013). Web-based Self-Management with and without Coaching for Type 2 Diabetes Patients in Primary Care. *BMC Endocrine Disorders* 2013, 13:53. <http://www.biomedcentral.com/>