

Control Strategy as a Model of Psychological Care for Patient with Diabetes

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ABSTRACT: This paper aimed to explore the development of psychological service as a part of medical treatment for patients with diabetes mellitus. Based on previous research, patients with diabetes mellitus reported that they tend to improve their healthy behavior using the control strategy. Control strategy has two processes with the first process involving attempts to change the environment so that it fits the self needs while the second process occurs when attempt to fit in with environment and to flow with the current. Control strategy might decrease negative emotions that accompany to the patients' disease. To improve health condition of patients with diabetes mellitus, it is recommended that awareness about the importance of integrated psychological service from health care providers should be increased. Partnership from public health and health care systems, local health insurers, legislators, professional and community groups, academic institutions to build a comprehensive health reform is vital. It is also essential to increase primary health care team in psychological care, if patients received education about how to apply control strategy as a adjustment to their health related conditions, they may substantially improve their physical and psychological well being.

Keywords: Control strategy, diabetes mellitus, healthy behavior, psychological care

Introduction

Chronic illness, like diabetes mellitus are increasingly prevalent causes of mortality, including in East Java, Indonesia and was predicted to have a 250% increase from 1995 (Tjokroprawiro, 2001; WHO, 1999). It may be caused by poor life style or health compromising behaviour, from low levels of exercise to high consumption of fat or sugar. Psychological factors could affect patients of diabetes mellitus. One psychological factor that is important to investigate is the efforts of patients to face this disease, for example, the attempt of a patient in keeping his/her blood sugar at normal levels (Cox and Frederick, 1992).

Research showed that primary and secondary control strategies could

facilitate good condition of an individual suffering from a chronic illness. Control strategies could be used to achieve the goals and the process of achieving this goal would be realized when individuals have the opportunity to realize the aim. Heckhausen and Schulz (in Wrosch *et al.*, 2002) stated that a more strategic role in the control of older adults are secondary control strategies which are compensatory.

The main purpose of the treatment for patients with diabetes is to keep their blood sugar at normal levels. It requires an effort to make healthy behaviors such as control diet (diet), weight control and exercise. In this case, the patient is expected to reduce sugar and carbohydrate consumption while the number of calories consumed must be fixed within a day.

Diabetic patients are also expected to maintain a normal weight. Exercise could also help to lower blood glucose. Patients are expected to change behavior patterns in their lives to achieve better conditions. However, these changes in the form of restrictions on certain behaviors (like diet) and demands to perform certain behaviors (such as exercise, regular check-ups) could result in unpleasant conditions, one of which is a negative emotion such as anger, anxiety, shame, guilt or envy. Strict treatment could also be a source of much psychological distress (e.g. increased anxiety and depression) for patients.

The control strategies used to deal with the various aspects of a chronic illness can play important roles in a patient's psychological adjustment (Wrosch, Heckhausen and Lachman, 2000). Theories about control behavior typically assume that individuals actively regulate their development. Individuals select goals, strive for attainment and manage the consequences resulting from failure and loss (Heckhausen, 1997).

Recent conceptualizations of control behavior have distinguished between primary and secondary control processes (Schulz and Heckhausen, 1996). Primary control striving refers to an individual's attempt to change the external world so that it fits with their personal needs and desires. Typical examples of primary control striving are persistence in goal striving or investment of time and effort if obstacles emerge. Secondary control striving by contrast is targeted at the inner world and involves individual's efforts to influence their own motivation, emotion and mental representation (Rothbaum *et al.*, 1982).

Basically, an unhealthy lifestyle is a dominant factor that causes type II diabetes mellitus. Ideally, this condition should be controlled entirely by the patient. This means if the patient could

change their lifestyle to become healthier, this would increase the quality of life of patients.

Hospitals are one of access points for patients to get health care. Unfortunately they have limitation in providing psychological services that are needed by the patient. As mentioned previously, psychological conditions will also affect the physical and physiological conditions in diabetes mellitus type II. Consider if the skilled person is in control of his lifestyle, it can reduce costs (cost) for the patient, bearing in mind that improper handling can increase the likelihood of complications and if the training can be used as a policy for the hospital as part of health care, it will improve public access and can improve the quality of life of patients therefore, it is our aim to conduct this study which tested.

Hypothesis: Control strategy is correlated with healthy behavior and negative emotion. High score in control strategy is followed by high scores in healthy behaviors and low score in negative emotions.

Method

Sampling and recruitment

Participants were 104 out patients from Dr. Soebandi Hospital at Jember, (62 woman, 42 men, mean age = 56,08 years) who were diagnosed with type II diabetes (mean times since diagnosis = 12.3 years).

Measures

Primary Control Strategy Scale. This 30 items scale measured primary control strategy (Heckhausen & Schulz in Heckhausen, 1997), aimed at attaining health goals: selective primary control strategy (15 items) and compensatory primary control strategy (15 items). Cronbach alpha was 0.88.

Secondary Control Strategy Scale. This 26 items scale measured secondary control strategy (Heckhausen and Schulz in Heckhausen, 1997), aimed at the inner world and involves individual's effort to their own motivation, emotion and mental representation: selective secondary control strategy (13 items) and compensatory secondary control strategy (13 items). Cronbach alpha was 0.89.

Health Behavior Scale. This 27 items scale measured health behaviors undertaken by people to enhance or maintain their health (Tjokropawiro, 1993; Feinglos and Surwit, 1995; Taylor, 1995; Safarino, 1992). Cronbach alpha was 0.93.

Negative Emotion Scale. This 40 items scale measured negative emotion in

patients with diabetes mellitus: Anger, Fright/anxiety, Guilt/shame, sadness, envy/jealously (Lazarus, 1991). Cronbach alpha was 0.93.

Participants were asked to indicate how true each statement was for them on a 5-point scale, ranging from 1 (almost never true) to 5 (almost always true).

Results

Descriptive statistics

TABLE 1 and **TABLE 2** show education level, age and gender of participants. Participants were 104 out patients from Dr. Soebandi Hospital at Jember, (62 woman, 42 men, mean age = 56.1 years). The majority of respondents had high school education.

TABLE 1: Gender and education level

Education	Gender		Total
	Male	Female	
Elementary school	3	10	13
Junior high school	8	23	31
High school	18	20	38
College	13	9	22
	42	62	104

Relationship

a. Canonical correlation was used to determine relations between primary and secondary control strategies with healthy behavior and negative emotion among out patients with diabetes mellitus. Canonical correlation analysis deals with the

association between composite of sets of multiple dependent and independent variables. In doing so, it develops a number of independent canonical function that maximize the correlation between the linear composite also known as canonical variates, which are sets of dependent and independent variables (Hair *et al.*, 1998).

TABLE 2: Canonic correlation

Root No.	Pct.	Cum. Pct.	Canon Cor.	Sq. Cor
1	78.354	78.354	.278	.077
2	21.646	100.000	.150	.023

TABLE 3: Dimension reduction analysis

Roots	Wilks L.	F Hypoth.	DF	Error DF	Sig. of F
1 TO 2	.90179	2.65222	4.00	200.00	.034
2 TO 2	.97737	2.33847	1.00	101.00	.129

Based on **TABLE 2** and **TABLE 3**, the first canonical function ($R=0,278$, $p<0.05$) had a higher correlation than the second function ($R=0,150$, $p>0.05$) indicating the first canonical function showed that dependent and independent variables were significant. These interpretations involved examining the canonical functions to determine the relative importance of each original variables in deriving the canonical relationship. The two methods for interpretation were canonical weights and canonical loading.

Results of analysis showed that canonical weight for dependent variables were 0.84 for health behavior variables and -0.57 for negative emotion. Independent variables showed high canonical weight too. Primary control strategy was 0.42 and secondary control strategy was 0.80. According to canonical loading, the statistic output showed the same result. Canonical loading for health behavior variable was 0.825 and -0.544 for negative emotion. Canonical loading for dependent variables were 0.644 for primary control strategy and 0,914 for secondary control strategy.

As expected by the hypotheses, there were correlations between primary and secondary control strategy with healthy behavior and negative emotion. Participants who reported high in primary and secondary control strategy, reported increased healthy behaviors and low negative emotions.

Discussion

Our findings showed that primary and secondary control strategies play critical

role in protecting patients with diabetes mellitus from affective distress when faced with strict regiment of treatment. The most important is that these control strategies influence the amount of healthy behavior that must be done.

Our findings showed that participants tend to use secondary control strategy which was in accordance to the life span theory (Shulz and Heckhausen, 1996). During the middle age and old age, the strategy choice leans more toward the elaboration and increased use of secondary control strategy. Increasing age-related biological and social challenges to primary control put a premium on secondary control strategies as means for maintaining the potential for primary control. As the ratio of gains to losses in primary control becomes less and less favorable, the individual increasingly resorts to secondary control processes. Throughout the life course, primary and secondary control strategies work together to optimize the development of the organism through selection processes and compensation for failure.

Four control related processes characterize selection and compensation. Selective primary control refers to the focused investment of resources such as effort, time, and abilities and skill for a chosen goal (e.g. increase healthy behavior and low negative emotion). Selective secondary control targets internal representations that are motivationally relevant to goal pursuit. Relevant representation includes the value ascribed to the chosen goal. The values associated with alternative goals, the perceived of personal control of goal attainment, and

the anticipated effect or consequences of goal attainment. Thus, selective secondary control effectively enhances the values of a chosen goal, while devaluing non-chosen alternatives.

Compensatory primary control is required whenever physical and cognitive capacities of individual are insufficient to attain a chosen goal. This may happen in older adults because of age-related decline. Compensatory primary control refers to the use of external resources such as assistance from others. Compensatory secondary control serves to buffer the negative effects of failure or losses of an individual's motivation for primary control.

The results of this study are expected to be used as a material consideration to provide interventions for patients with diabetes mellitus as an active agent in improving the health status of patients. According to Goodall *et al.* (in Taylor) the intervention of diabetes involves various components: patients, families and the hospital, and integration with medical treatment. Therefore, patients will be able to organize themselves (self regulation) in the monitoring of blood sugar levels appropriately, using the appropriate information about diabetes as a basis for behavior change and develop social skills to cope with stressful situations that may weaken the motivation of patients to increase healthy behaviors.

Hospitals as access points for patients, shall integrate medical and psychological services by considering the following matters: First, increasing awareness about the importance of integrated psychological service from health care providers. Second, partnership from public health and health care systems, local health insurers, legislators, professional and community groups, academic institutions to build comprehensive health reform. Third, increase primary health care team in

psychological care. If patients receive education about how to apply control strategy as a adjustment to their health related conditions, they may substantially improve their physical and psychological well being.

Conclusion

Although most hospital provides medical service, psychological factors do affect the health condition of the patient. Awareness of the medical team to provide psychological care such as knowledge of diabetes mellitus, skills in dealing with distress becomes important factors. A policy or a system is needed as enforcement. Psychological interventions provided should be based on a collaborative assessment, and all staff should have basic knowledge and skills to engage with and support in psychologically informed and recovery-based approach. The effective provision of psychological care requires a service culture that facilitates and supports such work, for example, valuing staff and having shared values and goals.

References

1. Cox, D.J. and Frederick, L.G. (1992). Major development in behavioral diabetes research. *Journal of Consulting and Clinical Psychology*, 60(4): 628-638.
2. Heckhausen, J. (1997). Developmental regulation across adulthood: Primary and secondary control of age-related challenges. *Developmental Psychology*, 33(1):176-187.
3. Lazarus Richard, S. (1991). *Emotion and Adaptation*. Oxford University Press. New York.
4. Rothbaum, F., Weisz, J.R. and Snyder, S.S. (1982). Changing the world and

- changing the self: A Two-Process Model of Perceived Control. *Journal Personality and Social Psychology*, 42(1): 5-37.
5. Safarino, Edward P. (1992). *Health Psychology: Biopsychosocial interaction*, 3rd Edition, John Wiley and Sons. Inc., 400-407.
 6. Schulz, R. and Heckhausen, J. (1996). A life span model of successful aging. *American Psychologist*, 51(7):702-714.
 7. Taylor, Shelley E. (1995). *Health Psychology*. McGraw-Hill International Editions.
 8. Tjokrowawiro, A. (1993). Diabetes Melitus di dalam Masyarakat Indonesia. *Buletin Penelitian Kesehatan*, 21 (4): 43-62.
 9. Tjokrowawiro, A. (2001). *Diabetes Melitus: Klasifikasi, Diagnosis dan Terapi*. Edisi Ketiga. Cetakan Keempat. Gramedia Pustaka Utama, 26-27.
 10. WHO. (1999). Definition, diagnosis and classification of diabetes mellitus and its complications. http://www.who.int/topics/diabetes_mellitus/en/.(Retrieved on 20 April 2012).
 11. Widayarni, Nurlaela. (2007). The Role of Primary and secondary control strategy on healthy behavior on patients with Type II Diabetes Mellitus. *Insight ISSN: 1858-4063*, 2 (2): 23-40.
 12. Wrosch, C., Heckhausen, J. and Lachman, M.E. (2000). Primary and secondary control strategies for managing health and financial stress across adulthood. *Psychology and Aging*, 13(3): 387-399.
 13. Wrosch, C., Schulz, R. and Heckhausen, J. (2002). Health stresses and depressiver symptomatology in the elderly: The importance of health engagement control strategies. *Health Psychology*, 21(4):340-348.