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Qualitative study on cognitive distortion and negative behavior of patients with diabetes mellitus

Fatmawati Fatmawati [1, *], Stang Stang [2], Ridwan Amiruddin [3], Muhammad Syafar [4], Asri Asri [1] and Safruddin Safruddin [1]

[1] Department of Nursing Panrita Husada High School of Health Sciences, Bulukumba, Indonesia.
[2] Department of Biostatistics, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia.
[3] Department of Epidemiology, Faculty of Public Health Hasanuddin University, Makassar, Indonesia.
[4] Department of Behavioral Science and Health Promotion, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia.

Abstract

Patients with DM who have negative perceptions and are overly worried about their disease have poor glycaemic control. If the thought of someone is negative and distorted, they will likely have negative feelings, and then the behavior will be influenced. Aims: This study aimed to determine the negative cognitive and behavioral distortions of patients with diabetes mellitus (DM) and the relationship between negative distortion and behavior. Settings and Design: This study utilized a qualitative design with a descriptive approach. Methods and Material: Participants included 15 people with diabetes mellitus who were selected using a purposive sampling technique. Data were collected using semi-structured interviews for 60-90 minutes. Statistical analysis used: Analyzed using content analysis and thematic analysis with the NVivo 12 plus software. Results: Cognitive distortion consisted of four sub-themes, including denial, catastrophic thinking, labeling, and personalization. Negative behavior comprised two sub-themes, including negative emotions and depressive symptoms. Not all participants who experienced cognitive distortion showed negative behavior. The types of cognitive distortion experienced by patients with DM were catastrophizing, labeling, and personalization, which was often followed by negative behavior.

Keywords: Diabetes mellitus; Cognitive distortion; Behavioral distortions; Negative behavior

1. Introduction

The most common psychological disorder experienced by patients with diabetes mellitus (DM) is Diabetes-Related Depression (DRD) [1]. The DRD reported in Europe and the US is between 15% and 20%. The high incidence of DRD is significantly associated with poor glycaemic control, poor self-care, low diabetes self-efficacy, and poor quality of life, even after control for clinical depression [2]. Stress and depression can directly affect glycaemic control through physiological mechanisms and indirectly affect glycaemic control through patient compliance [3, 4].

Evidence suggests that the cognitive process can mediate the relationship between DRD, stress, adherence, and metabolic control. Patients view diabetes as an irritating disease with a challenging treatment process [5]. Patients with DM who have negative perceptions and are overly worried about their disease have poor glycaemic control [3,6]. When their blood sugar is uncontrolled, they tend to respond by avoiding rather than changing their thought and behavior [4]. Besides, patients with DM who associate negative events with stable positive thoughts about themselves show better glycaemic control [7].

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* Corresponding author: Fatmawati
Department of Nursing Panrita Husada High School of Health Sciences, Bulukumba, Indonesia.

Depressed individuals tend to blame themselves [8] due to cognitive distortion of themselves, the world, and their future. They, therefore, likely draw deficient conclusions and have a negative view in evaluating themselves and interpreting what happens [9–11]. Cognitive distortion refers to wrong arguments that automatically come to mind [12,13]. A person, hence, often thinks that he is a victim of the surrounding and external events create distress, depression, and interpersonal problems. Cognitive therapists contend that the wrong interpretation of external events causes negative emotions that can reduce the quality of life [14] and health status in general [15,16].

The cognitive-behavioral theory states that individuals respond to situations with cognitive representations [3,17]. The way a person thinks about a situation, therefore, affects his emotion and behavior. If the thought of someone is negative and distorted, they will likely have negative feelings, and then the behavior will be influenced.

Based on the explanation aforementioned, the purpose of this study is to determine the negative cognitive and behavioral distortions of patients with DM and the relationship between distortion and negative behavior. It is pivotal to explore this topic because the only way to eliminate cognitive distortion is to improve and change the patients' view of themselves and their illness. Knowing the cognitive distortion of patients with DM will be beneficial to determine the right therapy to reduce distortion; therefore, the patients may have a more positive behavior and also as a first step before giving them Cognitive Behavior Therapy (CBT).

2. Material and methods

2.1. Design

This study used a qualitative design with a descriptive approach to explore the problem being studied by presenting facts from the perspective of the participants [18,19]. A purposive sampling technique was conducted in recruiting participants in the outpatient room of Bontobangun Public Health Center, Bulukumba Regency. The inclusion criteria were that participants had full awarness and they did not experience hearing loss. Informed consent was signed before the interview began.

2.2. Respondents

The number of respondents in this study were 13 participants. A purposive sampling technique was conducted in recruiting participants in the outpatient room of Bontobangun Public Health Center, Bulukumba Regency. The inclusion criteria were that participants had full awarness and they did not experience hearing loss. Informed consent was signed before the interview began.

2.3. Measurement

Data collection used semi-structured interviews at private locations selected by the participants. The following open-ended questions were used to guide the interviews: (a) general information, including duration of suffering from DM, causes, symptoms, and treatments, (b) psychological conditions during suffering from DM, (c) symptoms of psychological disorders experienced by participants, (d) how to deal with psychological disorders while suffering from DM. The interviews were recorded using audio with a duration ranging from 60 to 90 minutes.

2.4. Data Analysis

Data analysis used content analysis and thematic analysis with Computer Assisted Qualitative Data Analysis Software (CAQDAS), namely the NVivo 12 Plus software, starting with data entry, transcripts production, data reduction, and nodes (coding) creation, and data comparison to determine themes and sub-themes.

3. Results

The mean age of the participants was 58 years (58.60 ± 9.85) with a minimum age of 40 years and a maximum age of 71 years. Most of the participants were female (60%). The average duration of having DM was seven years (7.13 ± 4.70) with a minimum duration of suffering from DM was 2 years and a maximum of 17 years, can be seen in table 1.
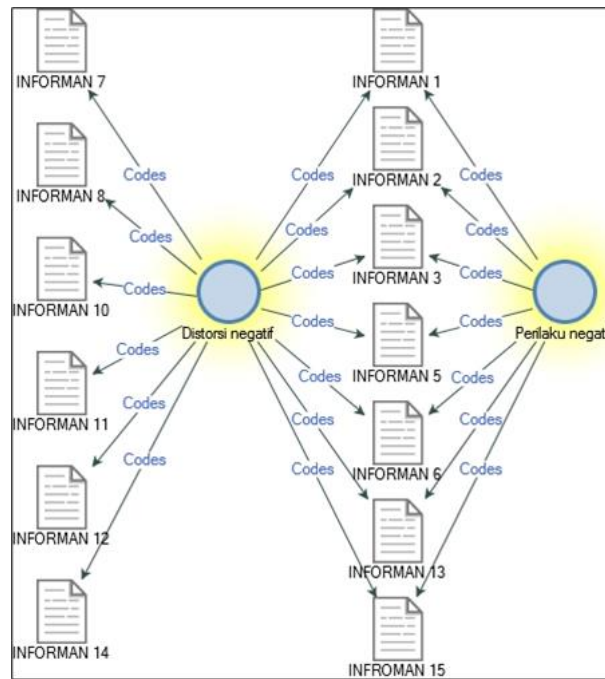
Figure 1 Comparison of negative cognitive and behavioral distortions

Table 1 Result of the analysis of themes & sub-themes

Nodes	Percentage Coverage	Sub-Themes	Theme
I often wonder that why I suffer from DM? Why are not my other siblings?	3.88%	Denial	Cognitive distortion
Why can I suffer from this disease?	2.58%		
I cannot lift weights anymore. I cannot work fast, and I am slow-paced.	4.4%	Catastrophic thinking	
Even if I work a little, I feel bad right away	1.31%		
I am sure that I can recover even though I have never seen a doctor	1.27%		
I limit the amount of food consumption, but no foods are avoided.	0.79%		
I feel a burden on my family	2.51%	Labelling	
I would rather die	1.38%		
I feel useless	0.22%		
I feel stressed and hopeless	3.76%	Personalization	
I often feel sad	2.48%		
I surrender to the situation	1.54%		
I am often angry without a reason	2.01%	Negative emotions	Negative behavior
I cry a lot	2.02%		
I often daydream and be alone	4.08%	Depressive symptoms	

Table 1 shows the result of the interview transcript analysis, including the percentage coverage, such as the percentage of all quotations from the respondents' dialogue in the transcript that refer to the nodes so that it is used in determining the order of the nodes and categorizing the sub-themes. According to Table 1, there are two themes formed, which are cognitive distortion and negative behavior. Cognitive distortion consists of four sub-themes, such as denial, catastrophic thinking, labelling, and personalization. Negative behavior consists of two sub-themes, including negative emotions and depressive symptoms.

Cognitive distortions experienced by individuals with DM include denying the illness, viewing DM as a disaster (catastrophic thinking), labelling themselves useless and a burden, and personalizing themselves, feeling guilty, feeling miserable and anxious, and surrender to the situation. The negative behavior of patients with DM includes negative emotions, such as frequent anger, frequent crying, and depressive symptoms (reflecting, daydreaming, clueless, and self-isolation).

3.1. Comparison of negative cognitive and behavioral distortions

The analysis indicated that seven participants experienced cognitive distortions and presented them with negative behavior. It can be concluded that not all participants who experience cognitive distortion show negative behavior (Figure 1).

4. Discussion

Cognitive distortion is considered as a disturbance in the cognitive process that results in an internal dialogue within the individual that plays an important role in the behavior showed. The depressed individual will focus on inferring assumptions and forming false or negative concepts. Furthermore, the negative concept will display the quality of feelings that are showed to be negative and negative feelings will direct the behavior to be negative as well.

Cognitive distortions that are often associated with depression and anxiety include [9,11] : 1) Personalization ("events were directed at me" or "it is my fault"); 2) *Catastrophizing* (seeing events more as calamities); 3) dichotomous thinking (seeing events as a black and white dichotomy); 4) Predicting (predicting events based on limited information); 5) Ignoring positive things (only focusing on negative things without considering the positive things that have happened); 6) Over-generalizing (making a single event a very broad conclusion); 7) Guessing people's thoughts (attributing their own thoughts and feelings to others based on insufficient information); 8) Labelling (determining their identity based on failure or mistake).

The results of this study indicate that patients with DM have a variety of cognitive distortions, such as denial, catastrophic thinking, labelling and personalization. The denial is unwillingness of the patients to accept their disease, resulting in catastrophic thinking (seeing DM as a disaster) which has an impact on the patients' physical condition such as feeling helpless and tired. The patients then label themselves as useless, a burden and even thinks about ending their life. The personalization of the patients makes them feel hopeless, surrender and sad. All cognitive distortions experienced by patients with DM trigger negative emotions and depressive symptoms. In addition, patients with DM limit the amount of food consumption, but no foods are avoided. According to Sakung et al [20], providing nutritious food education/ training and giving instant pumpkin can significantly reduce blood sugar [20].

A similar study conducted by Aghajani and Samadifard (2018) found a significant relationship between cognitive distortion and anxiety about death in patients with DM [15]. This finding is also in line with the study carried out by Ellis and MacLaren (1998) and Belir et al. (2016) which exhibited that cognitive distortion has a key role in psychological parameters because it causes aggression, agitation, depression, and interpersonal relationship disorders [14]. Based on the theory and model, the cognitive distortion structure consists of various factors and components related to internal factors and personality, social conditions, and cultural foundations.

The cognitive-behavioral theory states that the way a person thinks affects how he behaves. Farrel et al. (2004) found a pathway between cognitive distortion and adherence to adolescent with type 1 DM behavior regimens [3]. An indirect relationship may occur through stress. Patients with DM may respond the stress due to diabetes, general stress, cognitive distortions, and regimen adherence behavior in an exaggerated way to regimen compliance behavior.

Health practitioners involved in the diabetes treatment team should be aware of patients' negative cognitive and behavioral distortions because it can inform about the treatment adherence and patients' metabolic control. It can also provide important information regarding treatment decisions. The application of cognitive restructuring to reduce cognitive distortions also can affect the metabolic control of the patients with DM.

5. Conclusion

The types of cognitive distortions experienced by patients with DM are catastrophizing, labelling, and personalization. This is often followed by negative behavior such as frequent anger, frequent crying and depressive symptoms (daydreaming, clueless and self-isolation).

Compliance with ethical standards

Conflict of interest statement

The authors report no conflicts of interest.

Statement of ethical approval

The study was approved by the health research ethics committee (No. 10115/UN4.14.1/TP.01.02/2020) on 18 December 2020.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Chew BH, Vos R, Mohd-Sidik S, Rutten GEHM. Diabetes-Related distress, depression and Distress-Depression among adults with type 2 diabetes mellitus in Malaysia. PLoS One 2016; 11:1–17. https://doi.org/10.1371/journal.pone.0152095.

[2] Endocrinologi AM. AACE/AME Guidelines. Endocrine Practice 2006; 12:63.

[3] Farrell SP, Hains AA, Davies WH, Smith P, Parton E. The impact of cognitive distortions, stress, and adherence on metabolic control in youths with type 1 diabetes. Journal of Adolescent Health 2004; 34:461–7.

[4] Johnson SB. Insulin-dependent diabetes mellitus in childhood. 1995.

[5] Kovacs M, Iyengar S, Goldston D, Stewart J, Obrosky DS, Marsh J. Psychological functioning of children with insulin-dependent diabetes mellitus: a longitudinal study. J Pediatr Psychol 1990; 15:619–32.

[6] Liakopoulou M, Korvessi M, Dacou-Voutetakis C. Personality characteristics, environmental factors and glycemic control in adolescents with diabetes. Eur Child Adolesc Psychiatry 1992; 1:82–8.

[7] Brown RT, Kaslow NJ, Sansbury L, Meacham L, Culler FL. Internalizing and externalizing symptoms and attributional style in youth with diabetes. J Am Acad Child Adolesc Psychiatry 1991; 30:921–5.

[8] Fernández-Berrocal P, Extremera N. Ability emotional intelligence, depression, and well-being. Emotion Review 2016; 8:311–5.

[9] O'Donohue K, Berger E, McLean L, Carroll M. Psychological outcomes for young adults after disastrous events: A mixed-methods scoping review. Soc Sci Med 2021; 276:113851. https://doi.org/https://doi.org/10.1016/j.socscimed.2021.113851.

[10] O'Donohue WT, Fisher JE. Cognitive behavior therapy: Core principles for practice. John Wiley & Sons; 2012.

[11] Putranto AK. Aplikasi Cognitive Behavior dan Behavior Activation dalam Intervensi Klinis. Jakarta Selatan: Grafindo Books Media 2016.

[12] Ellis BJ, Garber J. Psychosocial Antecedents of Variation in Girls ' Pubertal Timing : Maternal Depression , Stepfather Presence , and Marital and Family Stress Author (s): Bruce J . Ellis and Judy Garber Published by : Wiley on behalf of the Society for Research in Child. Child Dev 2000; 71:485–501.

[13] Ellis A, MacLaren C. Rational emotive behavior therapy: A therapist's guide. Impact Publishers; 1998.

[14] Belir S, Erfani N, SafaeeRad I. Investigate the relationship between cognitive distortions and quality of life among postmenopausal women, infertility, underwent hysterectomy, uterine leiomyoma and normal. Health Research Journal 2016; 1:207–14.

[15] Aghajani S, Samadifard H. The relationship between cognitive fusion and cognitive distortion with death anxiety in patients with diabetes mellitus. Chronic Diseases Journal 2018; 6:18–22.

[16] Samadifard H, Narimani M. The role of cognitive belief, fusion and distortion in predicting the general health of couples. J Community Health Res 2017; 6:132–40.

[17] Kendall PC, Chansky TE. Anxiety disorders in youth: Cognitive-behavioral interventions. Allyn & Bacon; 1992.

[18] Nassaji H. Qualitative and descriptive research: Data type versus data analysis 2015.

[19] Sandelowski M. Whatever happened to qualitative description? Res Nurs Health 2000; 23:334–40.

[20] Sakung JM, Sirajuddin S, Zulkifli A, Rahman SA, Palutturi S. The Effect of Chayote (Sechium Edule) on Blood Glucose Level of High School Teachers of Pre-Diabetes. Indian J Public Health Res Dev 2018; 9:245–50.