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Research Article

Group Psychotherapy with a Psychodynamic Approach in Patients with Type 2 Diabetes Mellitus and its Impact on Glucose Levels

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Abstract

Diabetes is becoming the epidemic of the 21st century and a challenge to global health. It becomes imperative to face this situation with a different approach. Brief group psychotherapy is oriented towards the psychodynamic comprehension of current determinants of the situation of the disease to achieve an adequate adaptation to a new situation that the patient will live. In this study we describe the effect of group psychotherapy with a psychodynamic approach in patients with type 2 diabetes mellitus (DM2) and its possible relationship with glucose levels.

This was a qualitative study of patients with DM2 diagnosed in a period of less than 6 months, without psychological treatment. There were eight patients in the study group and eight patients in the comparison group. Psychotherapy was directed with the scheme proposed by Pichón Riviere. Three-hour sessions was held twice weekly for three months. The Beck Depression Inventory was applied at the beginning of the study and at the end. In addition, monthly glycosylated hemoglobin tests were performed in all patients. The cutoff point for glycosylated hemoglobin levels was ≤ 6.5 and ≥ 6.5 considering these patients with glucose control and without glucose control, respectively. There were 16 patients in the study, 75% were women and 25% men with a mean age of 54.3 and 45.3 years in the intervention group and the comparison group, respectively. Mean disease evolution was 2.8 and 4.5 months in the intervention and comparison group, respectively. Glucose levels were out of control in all patients in both groups at the beginning of the study, but at the end only 25% in the intervention group were without glycemic control versus 75% in the control group. We consider that the application of group psychotherapy with a psychodynamic approach is a new and innovative management strategy that is a feasible tool in its implementation and cost-benefit for newly diagnosed patients with type 2 DM.

Keywords: *Diabetes Mellitus; Psychotherapy; Diabetes Treatment; Psychodynamic Psychotherapy*

Abbreviations

WHO: World Health Organization; DM2: Type 2 Diabetes Mellitus

Introduction

Diabetes is becoming the epidemic of the 21st century and a challenge to global health. Estimations of the World Health Organization (WHO) indicate that the number of individuals with diabetes has increased from 108 million in 1982 to 422 million in 2014 and that the world prevalence of diabetes in adults (greater than 18 years) increased from 4.7% to 8.5% in 2014. Approximately half of the deaths

attributable to hyperglycemia occur before 70 years of age. According to projections of the WHO, diabetes will be the seventh cause of death in 2030 [1].

The challenge for society and health systems is enormous due to the cost and loss of quality of life of those who suffer diabetes and their family as well as for the important resources that are needed for their care in the public health system [1].

On the other hand, there are many inherent complications in this disease, which can be attributed to the appearance and progression of long-term complications that are an additional source of discomfort and psychosocial alterations [2]; therefore, it becomes imperative to face this situation with a different approach.

When an individual is diagnosed with chronic disease, he or she will be affected in their physical, psychological, family, work, and social aspects and it will produce responses that go from acceptance to denial/rejection; this leads to the activation of defense mechanisms and coping styles, both positive and negative, that the person has developed during their life to adapt and deal with his or her disease [3,4]. They commonly feel overwhelmed and helpless in this situation and they turn to omnipotent thought as a defense mechanism where they feel that nothing will affect them [5,6].

In a previous study by the Health Services of Hidalgo, Mexico, the relationship between a low level of knowledge of diabetes and grief was studied. It was found that patients that do not accept this new situation had poor glycemic control, in contrast with those who have been able to enter the last stage of grief [7]. When grief is not acknowledged, the patient is not receptive for new information; i.e. education about their disease; this leads to poor glycemic control and the appearance of severe complications [8].

Recent studies, like the one carried out by José Moctezuma at the National Social Security Institute in Mexico City, consider that grief "is a unique and unrepeatable, dynamic, changing process and each vary among individuals, cultures, and societies and that each possesses specific virtues that will serve as a support or limit to the grief process" [9].

To have patients with control, it is necessary to "empower them" against their disease, considering that empowerment for individual health refers mainly to the ability of the individual to make decisions and take control of their personal life [10]. Therefore, it is important to seek alternatives such as psychotherapy to help reach this objective which is a challenge for the health sector.

Brief group psychotherapy is oriented towards "the psychodynamic comprehension of current determinants of the situation of the disease, crisis or decompensation without neglecting the historical dispositional factors that intervene in this equation" [11,12]. This line of research involves social comprehension and the patient's psychodynamic functioning focused on the current disease to achieve an adequate adaptation to a new situation that the patient will live and achieving this in a short time.

The objective of brief psychotherapy is to "grasp the cross-sectional situation in which pathogenic determinants are updated [11]; this forces the individual to prioritize the role played by the patient's living conditions, in this case, the conditions that are generated following the diagnosis of diabetes.

This idea is based on Hartmann's words, "in order to address a recent problem, an adequate social understanding of the patient must be made that is not opposed as an excluding alternative of his or her psychodynamic understanding", a situation that many campaigns and programs for people with diabetes will do. Hartman continues mentioning that "the approach must be directed considering both factors that clarify the interplay between both worlds, internal and external" [13].

On the other hand, group work is adequate since considering that it is a condition that falls within the scope of an epidemic, a line of intervention is needed that allows working with several patients at one time, and at the same time, has a function of support and direction, not only on the part of the medical staff but also of the peers who face a similar situation [14].

Moreno mentions that "the group has a structure and within it, patients are therapeutic agents of one another […]. A group means being together, something that is more than the sum of the individuals" [15]. Foulkes, cited by Campos, complements this idea mentioning that "the group acquires its own entity and its result is independent and greater than the sum of its parts" [12].

Group work allows development of a special link, not only with the medical staff or the group director, but also between the members of the group, which have adequate direction to help the participants adhere to the objective of treatment, face grief, and accept the disease.

Freud mentions that "in the essence of the collective soul there are relationships; on one hand, the individual is united by libidinous ties to the director or an idea, and on the other, to the other members of the community, with the former being the most significant" [5]. This generates a network of support since the patient now does not have to face the situation individually since he has a group that understands what he or she is going through. The group psychotherapy scheme proposed by Pichón Riviere, mentions that group psychotherapy should be used when there is a situation that influences more than one person, and that this situation, if faced individually, usually exceeds the psychic structuring of the subject [16].

Addressing patients in a group and with a line of brief psychotherapy, allows knowing the various social and intrapsychic situations that each of the individuals face, both individually, as well as at group level; they also develop tools to overcome grief and achieve an adequate adaptation to said disease, not only proposed by the specialist, but by those who suffer it, with them being a group, a unit, established to address the disease.

Aim of the Study

The aim of this research was to describe the effect of group psychotherapy with a psychodynamic approach in patients with type 2 diabetes (DM2) and its possible relationship with glucose levels.

Materials and Methods

This was a qualitative study. Patients with DM2 were selected form the diabetes clinics of Pachuca, Hidalgo, previously diagnosed in a period less than 6 months, without psychological treatment, greater than 18 years of age, and who accepted to participate in the study by signing written informed consent. The protocol was approved by the Ethics in Research and the Research Committees of the Hidalgo Health Services. Eight patients accepted to participate in the study group and eight patients in the comparison group. Monthly glycosylated hemoglobin tests were performed to observe a possible relation between psychotherapy and glucose level. The cutoff point for glycosylated hemoglobin levels was ≤ 6.5, considering these patients as those with glucose control and ≥ 6.5 for patients without glucose control. Blood extractions were performed by qualified laboratory experts hired for this project. These experts obtained, transported, analyzed the samples, and later reported the results.

The co-investigator therapist in this project directed the group psychotherapy, and two listeners, one a thanatologist, took notes of the sessions to highlight the focus points to review in each group. The Beck Depression Inventory [17] was applied at the beginning of the study to know the emotional status of the patients and with this the psychotherapist assessed the results to have an initial perspective of the emotional status of the patients. The inventory was applied again at the end of the process.

A three-hour session was held twice weekly for three months with the main topics obtained from interview sessions and from topics that appeared during the group sessions. The process culminated with a psychotherapy closing session and a pharmacotherapy consul-

tation and nutritional orientation. The same was done in the comparative group; the only variant was that there was no psychotherapy intervention, pharmacotherapy consultation or nutritional orientation. Data were collected from a data collection sheet, and the Beck inventory and these were captured in an Excel database for quantitative data. The qualitative analysis was done using the notes collected by the two listeners during the work in the focus group and interviews.

Results

The research activities were carried out in the installations of the Health Research Coordination in an area adapted for group work. Of the 16 patients included in the study, 75% were women and 25% were men. This data is shown in figure 1. Mean age was 49 years with a minimum of 34 and a maximum of 64.

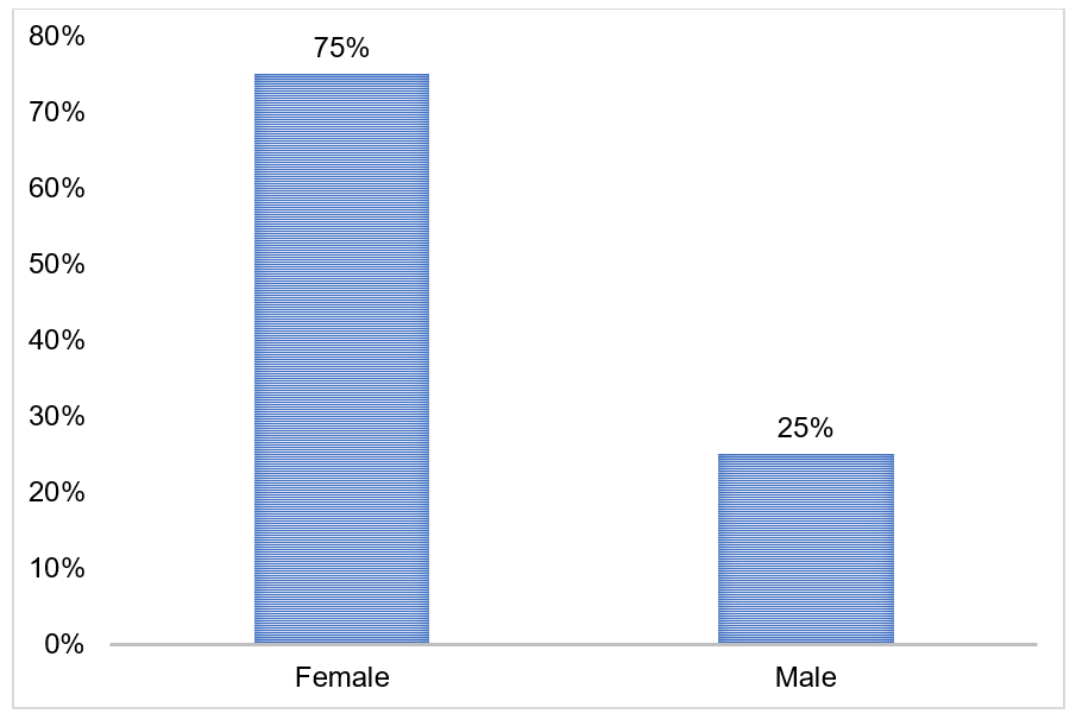

Figure 1: *Distribution by gender.*

In relation to education, a predominance of upper secondary education was found in both groups. Regarding occupation, the majority had small businesses or worked at home in the intervention group, and in the comparison group, the majority were employees. Mean age was 54.3 and 45.3 years in the intervention group and in the comparison group, respectively. Mean disease evolution was 2.8 and 4.5 months in the intervention and comparison group, respectively.

In the intervention, two individual interview sessions were performed at the beginning; in these, each participant spoke about their perception of the diagnosis, the disease, and their expectations with regard to group psychotherapy. Since this is an interview according to the psychoanalytic psychotherapy model, an outline was not used so that the patient's association would not be altered. This allowed the patient to express his or her ideas, thoughts, and fantasies freely with regard to diagnosis, health status, and ways of coping, among other ideas.

In the first group sessions, integration dynamics were performed. In these, it was sought to generate adequate group cohesion, characterized by an environment of trust, sincerity, and support; at the same time the topic in question was started, they talked about how everyone had received the news and how they had been facing it. They also focused on analyzing the way they consider their problems, both their actions, and the identification of the diverse defense mechanisms that may appear to face the anguish caused by the conflicts that arise in their lives.

These interviews also showed the different defense mechanisms that each participant uses to face the anxiety caused by the disease. Among these they highlighted denial as a central defense mechanism, accompanied by an omnipotent thought in which they claimed that their bodies do not get sick. This was the initial reaction of all the patients.

Regarding the development of the sessions, first, regarding the emotional state of the patients in the intervention group at the beginning of psychotherapy, it was found that the majority had certain depressive characteristics, as identified in the first assessment with the Beck Inventory. Among the main motives were the diagnosis of diabetes as a triggering factor, as well as the day-to-day barriers and frustrations, which were intensified by the diagnosis since the participants considered that life could become more complex, and in many cases, it was presumed that there were more important things to worry about before the illness. One important point to mention as part of the denial was the refusal of all the patients invited to participate in this project to participate in psychotherapy since they thought "they didn´t need it". The patients showed skepticism regarding the studies that were performed and they strengthened their omnipotent belief with arguments such as, "I never get really sick", and if they got sick, they only needed homeopathic remedies like tying a cloth around their neck to eliminate pain.

Other important defense mechanisms to consider were dissociation of the body and mind from disease symptoms, where, although they detected a significant weight loss, frequent urination, and even dizziness, they chose to not give this importance and act as if they were normal and it was not until they were told that they related this to the disease.

In addition, as shown by the Beck Inventory [17], the majority of patients were having moments of depression day-by-day, which made them diverted their attention from what was happening with their body.

Lastly, the conflict minimization mechanism was found, relating the diagnosis and the disease with the problems they had had during their lives. They commented that "it is another pebble in the sack that needs to be solved". In the face of mechanisms such as denial or omnipotent thinking, we focused on showing that the strength of their Ego should no longer lie in not getting sick, but in how to deal with these new situations. This strengthens the emergence of new mechanisms to face the disease, which are gradually being accepted and becoming part of their lives. Many recognized that it was easier to deal with the needs of others, becoming very efficient in helping others and choosing to ignore what happened to them. To the extent that they allowed to talk about it and observe their actions, they recognized the disease.

In the following sessions, we worked with fantasies of the disease, from the reason why they felt that this happened to them to the myths and realities about the disease and the changes they needed to make in their lives, situations that gave them guidance to understand the origin of the anger or concern they felt towards life or towards themselves.

We find two main types of fantasies: the first, related to the origin of the disease, and the second, related to the changes and results of these changes. Regarding the reason for the disease, the participants commented that it was the product of poor stress management, fears that they could not face, punishment in situations that generated guilt and abandonment of themselves and for caring for others.

As for the related fantasies regarding the consequences of the disease, they compared it to a slow and painful death, where everything is lost; ideas of having to give up endless number of foods and practices, based on what was seen in other relatives and what they had been told about the disease, in addition to information from friends and acquaintances.

In this stage, various points regarding the disease were clarified: how to avoid reaching the "slow and painful death" with the necessary care, the reason for the disease and how to avoid increasing the damage to their body. There was also an opportunity to talk about their fears, their faults and concerns of the disease and other aspects of life, with the unity of the group being the fundamental point to be able to provide adequate support.

Opening the subject of fantasies gave us the opportunity to face loss in the following sessions, once it was accepted. At this point, it was very useful to address the topics from two theoretical lines, the approach of Elizabeth Kübler Ross on the elaboration of grief and the proposal of Sigmund Freud on coping with the loss. The first allowed us to approach anger and sadness and the second to understand the unconscious mechanism of the Ego in the face of a loss.

The theory regarding the elaboration of grief allowed the individual to talk about anger during the sessions, which was externalized by some of the participants and internalized in others. It was sought to transform this anger into courage, which would be useful to face the situation and adapt to changes from a position that allowed them to take different care of themselves and a way to repair the damage that had been caused by their different ways of functioning.

Regarding the understanding that Sigmund Freud gives us about the functioning of the Ego in the face of a loss, we understood how, when the subject accepts the loss, the energy put into that lost object, in this case health, returns to them. This makes them go through moments where everything has to do with them, from guilt to anger and sadness.

To the extent that a better relationship was generated, the participants were able to deal with new objects, in this case, their diet, exercise, and medication, as well as the same body in the process of recovery.

As an important fact during this process, it was identified that some participants carried out what Freud called "melancholia", in which the patient lives as the lost object; the Ego identifies with what was lost, resulting in feelings of wanting to stop living, of feeling empty, and of not seeing meaning in life. Faced with this situation, group support was very important in being able to begin to speak and feel different emotions, in order to provide a different perception of life.

In the following sessions, once the loss was accepted and with the beginning of the elaboration of grief, the group talked about the support they could count on, related to their own resources, their family, and other social settings. Some participants talked about the difficulties they may have for not having the financial resources to access an adequate diet or due to time issues.

We found resistance inherent to change, which focuses on reality, but with the possibility of overcoming difficulties with support and suggestions of the group being the fundamental tools to provide alternatives.

Given the possibility of change, defense mechanisms and forms of adaptation were identified, aimed at maintaining resistance and preserving their current life. Among these manifestations, we analyzed issues with respect to both social and individual identity, again the question of omnipotence, and more primitive means of adaptation, such as regression and victimization of the person to avoid reversal or to hold on to their lifestyle.

Cases that mentioned "my reality requires me to have little time to take care of details such as diet or exercise," or "I cannot do any of this, because I have nothing, I depend on others and they do not support me to take care of myself," are proof of resistance to change; therefore, at this point, it was vital to analyze past experiences they had faced, talk about pain, and how they resolved it.

There was talk about the lack of information that they considered was needed in order to establish proper care of their diet, exercise, and drug consumption. At this point, they were given the information through presentations to solve doubts regarding what they could and could not eat (nutritional guidance and pharmaceutical consultation) to control the drug consumption. These talks worked very well since the participants were able to take advantage of the moment and solve all the doubts that the topic generated. Some had the initiative to go with the nutritionist at their health center for an individualized diet and others shared useful strategies to regulate their medication.

In the last 2 sessions, work was done regarding the closure of the therapeutic process and the anxieties related to it. The participants mentioned feeling sad and having difficulty accepting that it was ending. They wanted to keep the sessions and maintain the group, which showed them how to achieve adequate harmony and a good relationship. It was important to take care of the link between the group to function as a support network in times of crisis.

They were asked as a main point to talk about the changes they felt they managed to achieve with regard to their way of feeling, their perception of the disease, their diet and their drug consumption. Everyone reported feeling like they were moving forward and they understood that this was a process that they had to adapt to, that they did not want to be called diabetics, but by their name and that a radical change was not required, that the way they were handling the disease was adequate, a situation that was corroborated with the result of their analyses, which showed glycemic control.

Beck's inventory was reapplied, at the end of the process, where we found that depression levels decreased in almost all the participants, only one case was affected by personal situations that occurred at the same time that psychotherapy ended.

It is very important to highlight that the participants, although they considered there were still certain aspects to work on and elaborate in their lives, they felt aware of these and with a desire to make things different. They manifested a greater understanding and sought to achieve the appropriate transition for each conflict they face. On the other hand, as part of the patient´s anger, a very important comment was pointed out, which was the way the physician participates in this process. Poor ability to communicate a diagnosis was identified, as in this case, diabetes. They said that doctors use expressions that generate uncertainty, anxiety, and fear, and they do not consider their emotional state.

In this context, some patients expressed suicidal thoughts, although they did not even know it was diabetes. Therefore, it is essential to train doctors and the entire health team in diagnostic communication. This opens an area of opportunity from an ethical point of view to address this issue.

Regarding the search for the relationship between psychotherapy and glucose levels in patients, it was found at the beginning of the study that 100% of the patients, in both groups according to the cutoff point (6.5% glycosylated hemoglobin), were without glycemic control but at the end of the project only 25% of the patients in the intervention group were without glycemic control versus 75% of the comparison group that were without glycemic control. With a 95% confidence interval, an OR of 20.07 was obtained with a p = 0.00000000 for the Study Group compared to a p = 0.285 for the Comparison Group.

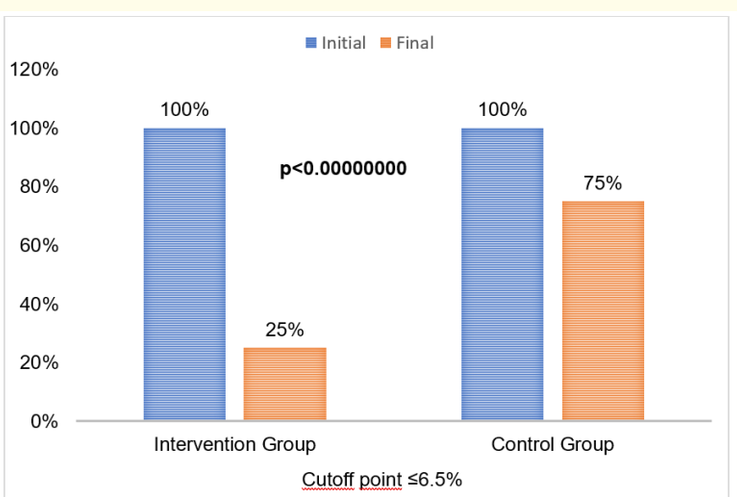

Figure 2: *HbA1c values of the study groups.*

Regarding the evaluations of depression with the Beck Inventory, figure 3 show the comparison between both groups. It can be seen that with psychotherapy, patients went from mild and moderate depression to without depression. Those in the Comparison Group showed no changes and the evaluations remained at 0 and one patient became moderately depressed.

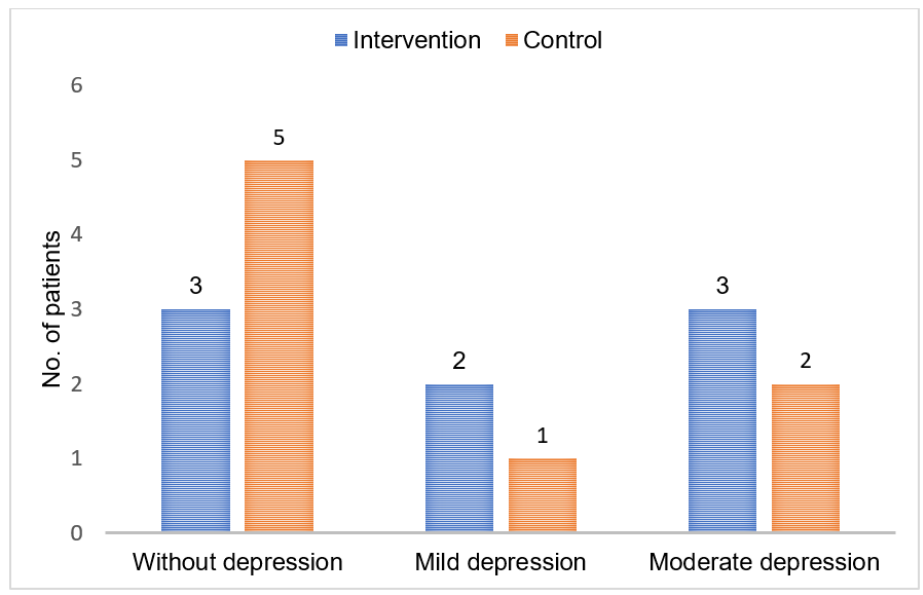

Figure 3: *Initial Beck Inventory analysis of the study groups.*

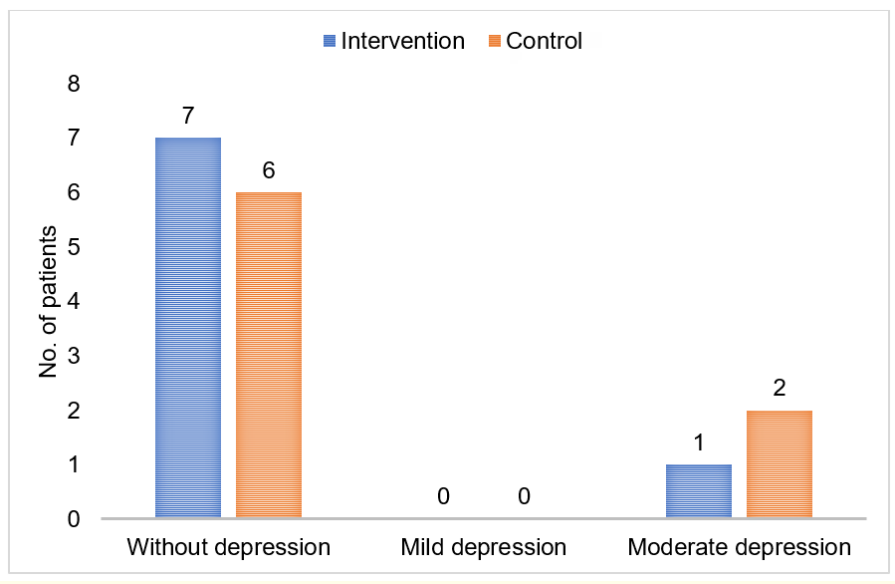

Figure 4: *Final Beck Inventory analysis of the study groups.*

Patients	Frequency	Percentage
Women, n = 12	Intervention 5	75
	Comparison 7	
Men, n = 4	Intervention 3	25
	Comparison 1	
Total, n = 16		100

Table 1*: Patient frequency and distribution by group.*

Patient no.	Age, years	Sex	Time since DM diagnosis, months	Initial HbA1c	Final HbA1c
1	57	M	2	8.6	6.2
2	55	M	1	7.2	6.4
3	54	F	1	8.0	5.8
4	50	F	3	7.3	6.8
5	57	F	3	8.0	6.1
6	64	M	6	7.0	5.8
7	64	F	3	6.8	6.2
8	34	F	4	6.8	7
X edad	54.3				
X Tpo. Evol.	2.8 meses				

Table 2: *Initial and final HbA1c of the intervention group.*
DM: Diabetes Mellitus; HbA1c: Glycosalted Hemoglobin.

Patient no.	Age, years	Sex	Time since DM diagnosis, months	Initial HbA1c	Final HbA1c
1	45	F	6	8	6.8
2	37	F	6	6.8	6.3
3	40	F	6	8.8	7
4	47	F	5	7.6	7
5	61	F	3	8.1	7.5
6	44	M	3	7.8	7
7	45	F	4	7.1	7
8	36	F	3	8.8	8.5
X Age	45.3				
X Time since diagnosis	4.5				

Table 3: *Initial and final HbA1c of the comparison group.*
DM: Diabetes Mellitus; HbA1c: Glycosalted Hemoglobin.

Patient no.	Beck Inventory score	Result 1st evaluation	Beck Inventory score	Result 2nd evaluation
1	4	Without depression	7	Without depression
2	2	Without depression	9	Without depression
3	19	Mild depression	5	Without depression
4	27	Moderate depression	9	Without depression
5	18	Mild depression	21	Moderate depression
6	3	Without depression	3	Without depression
7	20	Moderate depression	12	Without depression
8	20	Moderate depression	4	Without depression

Table 4: *Depression assessment of the study group.*

Patient no.	Beck Inventory score	Result 1st evaluation	Beck Inventory score	Result 2nd evaluation
1	1	Without depression	0	Without depression
2	0	Without depression	0	Without depression
3	3	Without depression	6	Without depression
4	21	Moderate depression	20	Moderate depression
5	8	Without depression	9	Without depression
6	16	Mild depression	6	Without depression
7	24	Moderate depression	23	Moderate depression
8	0	Without depression	0	Without depression

Table 5: *Depression assessment, group comparison.*

Discussion

More and more researchers have become interested in the importance of educational and psychosocial interventions for the treatment of diabetes. A synthesis of studies shows that diabetes education has positive short-term effects on glycemic control, although it is not sufficient for maintaining self-care behaviors over time [18].

In Mexico, Rodríguez-Campusano., *et al*. [19] in their research "effects of a psychological intervention on glucose levels in patients with type 2 diabetes" designed an intervention program to improve adherence to diet, with a pre- and post-test design. Before and after the intervention, glucose levels were measured and the results indicated statistically significant differences between pre- and post-test levels that indicated that they managed to reduce stress with this intervention; however with the passage of time, some patients relapsed.

On the other hand, Steed, Cooke and Newman conducted a systematic review of the psychosocial responses associated with interventions in 36 published studies, concluding that the results of all the interventions were diverse [20]. However, interventions that use cognitive-behavioral therapy focused on the emotional discomfort caused by diabetes, continue to demonstrate great effectiveness without achieving lasting adherence to diabetes treatment.

This research and ours, consider depression as a factor that causes a lack of treatment adherence, which contributes to poor control [21]. Likewise, stress is associated with poor treatment compliance in DM2 [22].

The proposal that we add as a management alternative is to focus on patients from a psychodynamic perspective and as a group, since this helps to know and understand the internal world, not only the root of the disease, but also its foundations in terms of conflict resolution, skills to adapt to reality, and its internal pressures, with the aim of dissipating obstacles and achieving integration of the self-care process as part of their daily lives.

Until now, the approach to the patient with type 2 DM is biomedical, without considering the patient´s psychological aspects; therefore, we consider that the application of group psychotherapy with a psychodynamic approach is a new and innovative management strategy for newly diagnosed patients with type 2 DM. It is also a viable and feasible tool in its implementation and cost-benefit.

It is necessary to address the issue of diagnostic communication and its psycho-emotional impact from an ethical point of view; a situation that has been left aside by the health team who must consider this as a patient's right to be protected in their emotional health, until they reach treatment compliance.

Regarding the first point mentioned above, Martin B Wice [23] comments in his personal account "A difficult conversation" that as a doctor, he has been trained to give bad news and considers that it is very important to take into account the following when giving bad news: evaluate the medical, functional, emotional and spiritual needs of the patient, as well as their family needs. After weighing the pros and cons of each option, the doctor determines the best approach to address these needs. Then he sits with the patient and family members in a private conversation, without prejudice and support. Pause and allow the information to be assimilated. If and when the patient and family can continue the discussion, describe the various scenarios and the best results.

Once this first step is finished, it is time to support the patient to digest the news and adapt to their new state of health; this is where psychotherapy comes into action, allowing that information provided by the doctor in a kind, clear, and comprehensive manner to go beyond reason to reach emotional understanding so the patient can integrate it into their life.

Conclusion

Psychotherapy with a psychodynamic approach proved to be an effective strategy in the approach of patients with newly diagnosed type 2 DM. Patients enter a grieving phase as indicated by Elizabeth Kúbler-Ross and Sigmund Freud. Brief psychotherapy with a psychodynamic approach allowed them to elaborate their grief from denial to anger and melancholia, and from there, to acceptance. It provided them with tools to deal with complicated situations. Group work generates a network of support and understanding, which provides a sense of belonging, support, and hope that motivates the participant to hang on to the direction in order not to stay behind. It improved his emotional state and made them more receptive to new information (health education). The need to train doctors in communication and diagnostic communication skills was identified.

Recommendations

Carry out this research in patients with a longer disease evolution to determine if it has the same effect. This could be considered as the initial approach of these patients in any care model.

Expect results according to the individual abilities of each patient to face the conflicts of reality; do not generalize a recovery.

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Conflict of Interest

The authors declare that they have no conflicts of interest.

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