

ARGENTINA

Education Program for Non-insulin-Dependent Diabetics in Latin America (PEDNID-LA): A cooperative international initiative

Background

The Spanish acronym PEDNID-LA stands for Education Program for Non-insulin-Dependent Diabetics in Latin America. It refers to a standardized, structured education program for people with type 2 diabetes (Gagliardino et al, 2001). The PEDNID-LA initiative resulted from the "Día de las Américas" workshop that took place in April 1996 in La Plata, Argentina. The Latin American Diabetes Association (ALAD), with the support of the International Diabetes Federation (IDF) and PAHO, organized this workshop. The objective of PEDNID-LA was to create a multicenter study to test the effectiveness of an education program carried out and evaluated in a standardized way in several countries of the Region. Since then, the standardized education program has been carried out and evaluated in the following countries: Argentina, Bolivia, Brazil, Chile, Costa Rica, Colombia, Cuba, Mexico, Paraguay, and Uruguay⁽¹⁾. The general organization of the project was the responsibility of an Executive Committee (Antonio Chacra, Brazil; Gloria López, Chile and Eric Mora Morales, Costa Rica), a general coordinator (Juan José Gagliardino, CENEXA, Argentina), and international organizations that offered technical cooperation (Clinic of the University of Dusseldorf, Germany, International Diabetes Federation, and WHO/PAHO). To guarantee standardized training of health educators, health care professionals who participated in the PEDNID-LA project trained at the Bernardo Houssay Center, with the collaboration of the WHO/PAHO Collaborating Center and the Center of Experimental and Applied Endocrinology, CENEXA (UNLP-CONICET).



Program description

This diabetes education program consists of four teaching units (90–120 minutes each) and is given once a week for a month. Each unit includes the following:

- A learning component; and
- A suggested task, which the patient commits to, at the end of each component;
 - A practical component.

The session facilitator is a physician who has received previous training, having attended a 2-day theoretical group seminar.

The course is presented to six to eight outpatients, preferably recently diagnosed. Family members are strongly encouraged to participate. Clinical and biochemical parameters are recorded at the beginning of the course and again one year later to evaluate its effectiveness.

1. The education program that was implemented and evaluated for this project was the diabetes education program used by the Bernardo A. Houssay Center in La Plata, Argentina, adapted from the Berger program (Berger et al., 1987).

Program goals _____

1. Improve the quality of the patient's metabolic control and the level of compliance with treatment.
2. Reduce costs directly related to the disease.
3. Promote active participation of patients in their metabolic control and diabetes treatment.
4. Emphasize the advantages of a regimen that includes proper diet, exercise, and weight reduction as well as use of drugs, such as those taken orally, to achieve adequate metabolic control of the disease.

Target population _____

The program is for people with type 2 diabetes.

Content _____

1. General information about the disease
 - Physiological variations in blood glucose
 - Symptoms of hypoglycemia and hyperglycemia
 - Renal threshold for glucose
2. Self-monitoring of glucose
 - Learning glycosuric self-monitoring
3. Nutrition and weight control
 - Relationship between obesity and insulin resistance
 - Classification of foods and planning a proper diet
4. Foot care
5. Exercise and physical activity
6. Inter-current diseases and diabetes
 - Recommended behaviors
 - Minimum periodic clinical and biochemical controls

All this is contained in four units as detailed below:

Teaching methodology _____

Unit 1.

Patients participate in a group discussion in which they are asked to speak about their background as it relates to diabetes. General information about the disease is given, such as the normal physiological range for glucose in serum, symptoms of hypoglycemia and hyperglycemia, and the renal threshold for glucose. During the practical or applied exercises of the session, patients learn to use dry strips treated with chemicals to monitor their glucose levels and to record the values.

As their first task, patients are advised to follow a diet that is very low in calories (600 per day) for a week, one day on and one day off the diet, until the next session, and to stop taking oral hypoglycemic agents. The purpose is to prevent the possible risk of induced hypoglycemia. This regimen gives patients

the opportunity to test the effect of diet on glucose levels. Patients are also asked to monitor their sugar levels 2 hours after main meals (lunch and supper) and to record their body weight daily in their record books.

Unit 2.

During the teaching or training component of the session, patients learn and analyze information related to weight and proper diet as well as the effect of obesity on peripheral resistance to insulin and the advantages of losing weight. In the practical segment, they learn to separate and classify foods into three groups: green (foods to be consumed freely), yellow (foods with some restrictions), and red (foods that should be avoided). Then, the patients are asked to prepare their own individual diet plans based on 1,000 calories per day and to discuss these plans with other members of the group. They are encouraged to adopt this diet plan as a long-term objective until they reach their recommended body weight.

At the beginning of the last two sessions (units 3 and 4), patients are asked to explain and share with other participants their experiences of the previous weeks after they changed their diets and carried out daily monitoring of their glucose levels.

Unit 3.

The main topics of this session are foot care and physical activity. During the practical segment, the physician—or educator—examines patients' legs and feet and shows them how to do this to detect possible risks or problems. Patients are also asked to perform certain foot exercises.

Unit 4.

The last session presents information about measures to take on days when the patient is feeling bad (acute episodes of illness) as well as the minimum clinical and biochemical tests that are needed for effective monitoring of the patient's metabolic control.

Materials _____

1. Set of 25 color flipchart sheets
2. Educator's manual or guide to provide a structured standard for teaching each session
3. Set of 60 photographs of different foods, noting the category or color to which each belongs (green, yellow, or red)
4. Question cards to distribute to class aides as a standardized procedure for verifying knowledge acquired in previous sessions
5. Individual record book to note data from self-monitoring (glucose levels, body weight)
6. Pamphlet for the patient outlining the main content and other components of the program

7. Questionnaire for evaluation and documentation of the patients' knowledge about diabetes before and after the program

Boehringer Mannheim provides this material to the instructors.

Program evaluation

ALAD published the first report on the effectiveness of this education program in 1999. The results came from the participating countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Mexico, Paraguay, and Uruguay) and were based on a total of 658 patients. The criteria for selecting the sample subjects were as follows: people with type 2 diabetes (both sexes), not pregnant, under 65 years of age, body mass index (BMI) preferably over 27, not insulin-dependent, without serious complications from diabetes, and without previous formal diabetes education. The variables were evaluated four times, as follows: 6 months before beginning the course and 4, 8, and 12 months after finishing the course. Specific knowledge about diabetes was evaluated at the beginning and end of the course.

Variables evaluated

- Duration, in years, of diabetes mellitus
- Presence of classic symptoms (polyphagia, polyuria, polydipsia, vaginitis, balanitis)
- Height and weight (to obtain the BMI)
- Abdominal circumference
- Arterial tension
- Fasting plasma glucose
- HbA1c
- Fasting lipid profile (total cholesterol and triglycerides) and, optionally, high density lipoprotein
- cholesterol (HDL)
- Type and dosage of oral hypoglycemics
- Type and dosage of hypotensive and hypolipemic agents
- Other drugs the patient is taking
- Tobacco use
- Physical activity
- Serious hypoglycemic episodes
- Hospitalizations for diabetes
- Frequency of physician appointments and changes of physician
- Knowledge about diabetes

The participating centers were asked to send the information they collected to the offices of CENEXA for processing with the program PID-INFO 6.0.

The results of that first publication revealed important changes over the four periods in base measurements of the following variables: reduction of body weight, arterial tension, fasting glucose levels, HbA1c, cholesterol, and triglycerides in

addition to general reduction in the quantity of hypoglycemics taken. An analysis of cost-effectiveness is still pending.

Currently, after publication of results from 12 months of the study, centers in the participating countries are maintaining this program satisfactorily and are continuing to evaluate the variables. Following is the list of centers in each country that are participating in PEDNID-LA:

Argentina - Italian Hospital, J. R. Vidal de Corrientes Hospital, José de San Martín Clinical Hospital, Center for Cardiovascular Diagnosis and Rehabilitation, School of Medicine, National University of Cuyo, Bernardo A. Houssay Center.

Bolivia - San Gabriel Hospital, La Paz.

Chile - San Juan de Dios Hospital, University of Chile, School of Medicine, Diabetes Unit.

Costa Rica - The program was first carried out in the Dr. Rafael Angel Calderón Guardia Hospital. It has since been incorporated in the National Diabetes Plan and is being carried out in government hospitals and physicians' offices that are affiliated with the social security system (Costa Rican Social Security Fund; CCSS).

Cuba - National Institute of Endocrinology.

Uruguay - CASMU and Maciel Hospital.

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