

Health education in prisons: assessment of an experience with diabetics

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ABSTRACT:

Background: A training strategy designed at Huelva Prison sets out to provide diabetic inmates with training and basic information about the illness.

Method: Descriptive and cross-sectional study carried out at Huelva Prison. Information was acquired using questionnaires prepared for the study. A descriptive analysis was then made using averages for quantitative variables and absolute and relative frequencies for the quantitative variables.

Results: 27 interviewed diabetics (24 men and 3 women), participation rate, 69.2 %, response rate 84.4%, average age 48.3 CI 95% (43.7 to 52.9). 66.7% insulin dependent and 33.3% receiving oral anti-diabetic treatment. Hit rate in questions assessing knowledge was over 80%.

Conclusions: The study derives from the need to increase awareness of inmates' difficulties in adapting standard diets to the nutritional requirements imposed by the illness. Short term results such as these cannot be used to assess changes of attitude, although one notable conclusion that can be drawn is the high level of participation and interest by inmates and the consequent possibility of setting up self-help groups.

Key words: Health Education; Prisons; Diabetes Mellitus; Feeding; Nutrition, Public Health; Spain; Prisoners; Health Promotion.

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TEXT BOX NUMBER 1: THE CONTENTS OF THE SESSIONS ARE SPECIFIED

- *Basic principles on nutrition*
 - ✓ Information on nutrients
 - ✓ Diet plan for the control of diabetes
 - ✓ Recommendations: daily meals distribution
- *Healthy diet plan for a diabetic patient*
 - ✓ Eliminating unhealthy food
 - ✓ Alternatives within the Penitentiary Facility
 - ✓ Including all food groups
 - Controlling food rich in carbohydrates
- *The importance of water*
 - ✓ An appropriate hydration with meals
 - ✓ Choice beverages in diabetes
 - ✓ The importance with physical exercise
 - ✓ Other healthier substitutes
- *Physical activity and its importance for diabetic patients*
 - ✓ Adapted physical activity and its importance for diabetic patients
 - ✓ Advantages
 - ✓ Using appropriate shoes
 - ✓ Foreseeing possible hypoglycemia
 - ✓ Diet- exercise- treatment as the basic pillar
- *Advantages of an appropriate diet for a diabetic patient*
 - ✓ Glycemia adjustment
 - ✓ Appropriate adjustment of treatment dosage
 - ✓ Important role of fiber in eliminating glucose
 - ✓ Preventing diseases related to diabetes

INTRODUCTION

The specific features that depict the penitentiary environment involve using new strategies basically directed at health promotion and disease prevention. Amongst such features some can be outlined such as the high prevalence of pathologies, a low social, economic and cultural profile, as well as difficult access to health services. Some studies indicate that social inequality can be responsible of increases in the prevalence of some diseases such as DM2 while, on the other hand, the provision and quality of primary care services can play a major role in reducing the consequences of such inequality.

Health education amongst inmates is considered as a major objective among both nursing professionals from the Prison of Huelva, acting as a primary care centre, and their reference Hospital: Hospital Infanta Elena. Within this cooperation environment, for the last two years a program specifically directed at inmates has been taking place, and now, because of the aforementioned features, is particularly aimed at diabetics. Diet and diet therapy monitoring and control conditions within prisons in general and towards diabetic patients in particular, make us consider food education for this risk population as a major tool for glycaemic control.

We initially know that Food and Nutrition Education, within human nutrition, is a key tool in preventing, promoting and treating nutrition disorders and chronic diseases.

Diabetes mellitus is, because of the number of people affected and the cost related to the disease and its complications (it is one of the main causes of mortality in Spain) a pathology that requires from the patients a specific education on the problem and its treatment.

The main objectives we are taking into consideration for these education sessions are the following:

- Knowing the basis of a healthy diet.
- Developing healthy habits and correcting the bad ones.
- Identifying carbohydrates and knowing how frequently they should be consumed.
- Understanding how important and healthy water is for a diabetic patient in contrast with least healthy beverages.
- Promoting physical exercise as a healthy lifestyle for a diabetic patient.
- Preventing and reducing possible glycemia disorders.
- Knowing the benefits derived from a healthy diet.
- Preventing risk factors such as high blood cholesterol, hyperglycemia, high blood pressure, obesity, etc. through nutrition.

At the end of the sessions we decided to gather information through a series of questionnaires that allowed us to assess both the process of education intervention and the results derived from it, discerning:

1. The inmates' assessment on the session. Several questions on the methodology used were made.
2. Efficiency or learning level acquired during the session.
3. Efficiency or implication level on future activities related to food control or menu modifications for diabetic patients.

MATERIAL AND METHODS

Design: descriptive and transversal study carried on the Correctional Facility of Huelva.

The selection process among inmates was made by the prison itself within the Diabetes Control Program which was set up during 2008. The selection of the sample was made among all inmates within the Correctional Facility with diabetes mellitus who voluntarily wanted to participate in the study.

This program intends to confer autonomous control to the patients both within the facility and after their release and is based on the strategic guidelines established by the Diabetes Comprehensive Plan of Andalucía.

Thirty-nine inmates with diabetes types I and II were selected and they assisted two hour long theory tuitions in groups of under 15 inmates, fulfilling three sessions altogether, in which active participation played a major role in solving any doubts.

The speeches were adapted to the normal routine of the facility so that this was not disrupted.

Contents of the training sessions⁷⁻¹⁴:

- Main nutrition principles.
- Healthy diet plan for a diabetic patient.
- The importance of water.
- Physical activity and its importance for diabetic patients.
- Recommendations to prevent complications.
- Benefits of a balanced diet for diabetic patients.

The contents of the sessions are specified in text box number 1.

Gathered information: information was collected by means of specifically designed questionnaires, after each session.

Statistic analysis: it was descriptive and used average results for quantitative variables and absolute and relative frequencies for qualitative variables, the confidence interval being 95%.

The analysis of the data was made with the statistic software SPSS v. 11.2.

Ethic and legal issues: authorization for carrying out this study was requested to the Support Unit of the Directorate General of Correctional Facilities, in accordance to Orden Circular 7/99 sobre "*Trabajos, estudios e investigaciones en el medio penitenciario*"¹⁵.

(Notification Order 7/99 on "Reports, studies and research within the correctional environment").

All patients were requested written informed consent, in accordance to current legal regulation and particularly to Organic Act 15/1999 of 13 December, regarding Personal Information Protection¹⁶ as well as Sections 4.2.b; 211.2 and 211.3 of the current Penitentiary Regulation¹⁷.

RESULTS

The total number of those polled (27) was less than the number of assistants (32, out of 39 diabetic patients), the participation rate therefore being 69.2% and the response rate, 84.4%, bearing in mind that some inmates had to abandon the study due to different reasons. Recruiting them afterwards for the study would have meant misrepresenting the results as a result of the inmates not counting with all the necessary information. Nobody refused to participate.

24 men (88.9%) and 3 women (11.1%) filled in the questionnaires, the average age being 48.3 years and the CI, 95% (43.7 to 52.9). The median age was 46.5 years and a range between 32.1 years and 77.5 years.

With regard to diabetic patients, 18 (66.7%) underwent insulin treatment and 9 (33.3%), took oral anti-insulin drugs.

As far as the nationality is concerned, two people among those polled were foreigners. According to their origin, for 5 inmates (18.5), this was their first time in prison, for the rest, 22, (81.5%) were already in prison or came from other facilities.

What type of food should be removed from a diabetic diet?	Ice cream, cakes and sweets 22 (81.48%)	Fruit, dairy products and cereal 5 (18.52%)
What can you drink instead of regular coke?	Diet coke or coke Zero 25 (92.59%)	Wine 2 (7.41%)
Is sugar recommended with coffee?	Yes 0 (0.00%)	No, but sweeteners can be used instead 27 (100%)
How many meals are daily recommended?	3 meals per day 2 (7.41%)	5 or 6 meals per day 25 (92.59%)
Is breakfast necessary for a diabetic patient?	Yes, always 27 (100%)	No 0 (0.00%)
Which of the following are recommended for a diabetic breakfast?	Fruit, dairy products and cereal 27 (100%)	Milk and something sweet 0 (0.00%)
How many pieces of fruit are recommended per day?	1 piece 2 (7.41%)	3 pieces 25 (92.59%)
How many pieces of vegetables are recommended per day?	1 piece 2 (7.41%)	2 pieces 25 (92.59%)
Which of the following are quickly absorbed? (occasional consumption)	Fruits 14 (51.85%)	Confectionery, sugar and sweets 13 (48.15%)
Which of the following are slowly absorbed? (daily consumption)	Cereal 26 (96.3%)	Cakes 1 (3.7%)
What is the best beverage for a diabetic patient?	Soft drinks 0 (0.00%)	Water 27 (100%)
Can all diabetic patients do physical activity?	Yes 27 (100%)	No 0 (0.00%)
Are there any key principles for diabetic patients?	No 2 (7.41%)	Diet-exercise-medical treatment (or insulin) 25 (92.59%)
Are carbohydrates recommended before doing sport?	Yes 23 (85.19%)	No 4 (14.81%)
If a diabetic patient has taken too much insulin, what should be done?	There is nothing wrong, it is not so serious 2 (7.41%)	Increasing flour products, fruit or milk 25 (92.59%)
Do you believe future complications can be derived from an inadequate diet?	Yes 26 (96.3%)	No 1 (3.7%)
Do you think there is appropriate food for a diabetic patient in your module's store?	Yes 3 (11.11%)	No 24 (88.89%)
Did you know what an appropriate diet was before this presentation?	Yes 17 (62.96%)	No 10 (37.04%)

Tabla 1: Grado de aprendizaje obtenido tras la charla.

FALTA TRADUCCIÓN

	Yes	No
Have you learnt something interesting with this speech?	27 (100%)	0 (0.00%)
Do you think that your control on the disease can be improved after this speech?	27 (100%)	0 (0.00%)
Do you think the speech has been too short?	14 (51.85%)	13 (48.15%)
Have you liked the way the speech has been given?	27 (100%)	0 (0.00%)

Table 2: Inmates' assessment on the speech.

	Yes	No
Do you think you know enough about diabetes?	10 (37.04%)	17 (62.96%)
Do you think that you are now going to apply the knowledge achieved in this speech?	26 (96.3%)	1 (3.7%)
Would you like to attend any more speeches alike?	27 (100%)	0 (0.00%)
Do you think that you would improve your control on the disease if you knew more on diabetic nutrition?	27 (100%)	0 (0.00%)
Would you agree on attending periodic speeches on nutrition?	26 (96.3%)	1 (3.7%)
Would you agree on attending a nutrition consultation frequently so that they could teach you the food that you must eat and therefore your disease could improve?	26 (96.3%)	1 (3.7%)
Do you think this facility's diabetic diet is appropriate?	5 (18.52%)	22 (81.48%)
Do you think the diabetic diet could be better adjusted?	26 (96.3%)	1 (3.7%)

Table 3: Implication in future activities related to diet control or diabetic menu modifications.

Table 1 shows the information on learning levels gathered with questionnaires. Information on the inmates' assessment about the presentation is depicted in Table 2, and the information on implication is included in Table 3.

The results which are worth underlining are the high degree of learning achieved after the sessions, so that there is only one question in which the success rate is jeopardized with 51.85% (on the question regarding quick absorption food). 88.88% of questions which intended to assess the knowledge achieved were successfully answered by over 80% of the audience.

It is also worth highlighting the positive assessment of inmates on the session, about which they only penalized its duration, with 51.85% of them finding it was not too short. This makes us consider future modifications on the sessions, where other audiovisual features could be included to liven up the pre-

sentations, considering that all the audience (100%) agreed on the way the sessions took place and their convenience.

As far as efficiency is considered, it is also worth considering the high implication rates among inmates for future activities; initially over 95% of them agreed in doing so. We would also like to highlight the question related to the convenience of the diabetic diet within the Facility, which was negatively answered by 81.48% of inmates, in contrast with 96.3% of inmates who thought that it could be better adjusted to the needs derived from their disease.

DISCUSSION

Speeches and workshops, which specifically target reduced groups of marginalized population or with

low levels of knowledge, regarding issues of special importance such as their health, is a helpful means of relevant teaching so that they can better control their disease. Studies by Cerrillo^{18, 19} and Núñez²⁰, on the efficiency of group education on diabetes discuss the validity of advance practice models in current nursing. This practice is guided towards structured and planned interventions in accordance with a logic sequence and common to all the professionals implied. Within our assistance context it seems that group activities are, in contrast with individual activities, more efficient and effective and therefore, as Duro Martínez²¹ states, they create more satisfaction amongst professionals.

Surveys have proved that we have achieved the objectives of improving the patients' knowledge on the management of the disease and therefore reducing the characteristic complications of this pathology.

The correct management of diabetes entails knowledge on the appropriate diet that these patients must have and in most cases these patients don't have such knowledge.

It is quite representative the absence of studies regarding nutrition education for diabetic patients in prison, considering the key relationship between an appropriate diet and the management of diabetes; specially if we consider marginalized groups with occasional external health monitoring.

It would have been more representative to take a control group to take the survey but, because of the small number of diabetic patients that we can find within a facility (39 in our case) and the difficulty of repeating coordinated activities of this type in the future, the idea was discarded.

We also considered doing the survey before and after the speech so that we could better assess the results, but this implied extending the duration of each of the sessions and the resulting weariness. On the other hand it could have implied a reduction in the number of patients polled because, as the results show, between the 3 two hour long sessions, 5 inmates abandoned the speeches because of different regime related causes.

We are aware of the limited sample which somewhat distorts the results, but we must underline that all the diabetic patients were chosen for the speeches although some of them could not attend them or had to leave because of regime related causes which escape our control. On the other hand attention must be drawn to the fact that surveys were done by all the inmates who finished the speeches and no one refused participating.

Other limitations: Amongst opposing or mistaken results we have to consider an inmate with se-

vere hypoacusia who admitted not having heard most of the sessions, some inmates with concentration difficulties who fell into incorrectly filling in the survey after almost two hours of explications, or the presence of inmates with oral treatment who incorrectly answered the question on what to do after taking too much insulin due to unawareness of the issue. One inmate proved to be uncommitted with his disease and has stated to be unconcerned with correcting his habits (although he admits them) and in future sessions would supposedly not be susceptible to working with the rest of the group.

Amongst our future objectives we would like to repeat the survey in three months, extending our experience in time and even intervening in the design of diabetic menus for the concerned inmates so that their specific needs could be met, regarding both its making and daily calorie distribution.

Because of the results achieved, the acceptance of these sessions by both inmates and speakers, and the experience obtained, we can consider new activities and the development of more ambitious intervention programs that improve our patients' health and quality of life; the creation of an educator network between professional of both facilities and promoting the integration of inmates in the role of educators and counselors within health programs.

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