

A Multi-disciplinary Education Clinic for Rural Diabetics in KwaZulu — Ruth Albertyn



Ruth Albertyn

PO Box 42
Grabouw
7160

Curriculum vitae

Ruth Albertyn has been lecturing in Adult Education and Community Nutrition in the Department of Human Ecology at the University of the Western Cape. After graduating from Stellenbosch University, she taught at a high school in Cape Town for four years. She then worked at the community development project, Zamimpilo, which is attached to the Emmaus hospital in the Natal Drakensberg. During this time she did her honours part-time through Stellenbosch University, majoring in adult education and community nutrition. Ruth and her husband HOFFIE, live in Grabouw and have a son.

Summary

A week long, live-in multi-disciplinary educational programme was offered to rural, diabetic patients in KwaZulu to determine whether their knowledge had increased after this time. The way this clinic was planned and organised, is described and the results evaluated: educated diabetics were more willing to take part in this programme than uneducated patients; newly diagnosed diabetics learned the most, and most effective learning will take place if it satisfies the individual's immediate goals. It is emphasized that there is a "teachable moment" in the life of a patient (mostly soon after a diagnosis) when maximum change can be obtained, and this should be used.

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KEYWORDS:

Diabetes Mellitus; Health Education; Rural Health; Research

Introduction

In nutrition education the terminal objective is to modify nutrition-related behaviour, and the intermediate objective is to increase knowledge and skills, and change attitudes. People need to be convinced to change their behaviour.¹ In adult education, the aim of enabling individuals to reach their full potential can only be achieved if the person decides and is motivated to bring about change and improvements.² In motivating people to learn, the "teachable moment" must be made use of when the individual becomes aware of a need at

a particular stage of life.³ The discovery of a disease may present such a teachable moment. People will change their food habits when they see the advantage of changing.

Diabetes is unique among chronic illnesses because effective management requires ongoing patient input in terms of diet, exercise, medication and monitoring. To ensure patient co-operation, the patient must have knowledge and understanding of the rationale of each of these aspects.⁴

Health conditions of an area do not exist in isolation. The patient is seen in totality in his economic, political, ecological and cultural environment, and education needs to be approached in this context.⁵ In Cassel's study of a Zulu community, he found that a health team working to integrate health education with preventative and curative aspects can produce desirable changes in beliefs and habits to improve health and general living standards.⁶

As far as can be ascertained, no evaluation research has been done to determine if this approach is effective or not. The problem addressed in this study is, whether there is an increase in knowledge after a week-long multi-disciplinary clinic for rural diabetics, or not?

Situational Context

The estimates for the population served by the Emmaus hospital in the foothills of the Natal Drakensberg range between 133 000 and 180 000.⁷ People live in scattered homesteads and farming is done on a subsistence level, with the main crop being maize. Poultry, goats and cattle are commonly kept livestock. Migrant

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labour and unemployment are high, with each employed adult having 2,5 dependents. The majority of the household incomes fall below the household subsistence level in KwaZulu.⁸

The emphasis of the hospital being on preventative medicine, the health care provider saw the need to start a support group to provide education to diabetic patients. This was started in 1988, with patients attending monthly on the same day as they collected medication. It was later felt that a multi-disciplinary week-long clinic would be more beneficial to the patients.⁹

Methodology

Preliminary study

The universum for the study consisted of all the diabetic patients being treated by Emmaus hospital. A preliminary study in the form of a survey was done during the month of March 1990. Seventy five (75) patients were interviewed. The reasons for this study were to gather demographic information about the universum, to gain insight into their life circumstances for the holistic approach, and for planning the programme. Information was gained with reference to age, sex, position in the family, length of time they have been diabetic, number of diabetic classes they had attended, educational level, income source and farming activities.

The Main Study

The intervention, a week long live-in clinic was advertised at the weekly diabetic support group meeting for five months prior to the intervention, and patients attended the clinic

Table 1. Pre- and Post Test

What do you want to learn this week? (pre-test)	True	False	Don't Know
1. Cabbage belongs to the energy food group	T	F	?
2. It is better to eat fish than red meat	T	F	?
3. Raisins may be eaten freely by diabetics	T	F	?
4. One portion is equal to 2 cups of mealie meal porridge	T	F	?
5. If you don't like lettuce, you can exchange it for cabbage in a meal	T	F	?
6. Fibre can be found in eggs	T	F	?
7. Fibre helps to give you energy	T	F	?
8. Foods from the protective food group, protect you from illness	T	F	?
9. Bread is an example of a food from the body building food group	T	F	?
10. Foods from the body building group are needed for a strong body	T	F	?
11. Bran can be added to mealie meal porridge to make you feel full	T	F	?
12. It is better to use wholewheat flour than mealie meal or white bread flour when making "jetce"	T	F	?
13. Leftover water used for cooking vegetables should be used for making soup or gravy	T	F	?
14. To start a stew, fry chopped onions in oil	T	F	?
15. If you eat more food than your body needs, you will become overweight	T	F	?
16. Tomatoes, cucumber and cabbage should be eaten in small quantities because they give a lot of energy	T	F	?
17. A man who works in the fields must eat more foods than a man driving a taxi	T	F	?
18. A baby needs to eat a bigger quantity of food than a domestic worker	T	F	?
19. You should only exercise once a month	T	F	?
20. Exercise can help to regulate your diabetes	T	F	?
What did you like best about this week? (post-test)			

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voluntarily. The week long intervention was held at a mission station about 35 km from the hospital. The advantages of taking the participants away from their home, were that their food intake was controlled and their condition was monitored, they were also free of daily tasks and routines.¹⁰

The aims of the week (as drawn up by the multi-disciplinary team of a doctor, a home economist, nurses, village health workers and community members) were: to stabilise their medical condition, to enable them to function as normally as possible, to help them to understand their condition, and to help them realise the importance of their own control over their illness.

Use must be made of the "teachable moment"

To stabilise the medical condition of the diabetics was an objective of the doctor and the nurses who monitored their glucose levels. The aim of helping the patient to function as normally as possible, included the teaching of skills such as knitting, net-wire fence making and candle making by local community members. A village health worker demonstrated how to make a vegetable garden. Community awareness was encouraged, and this was done by means of role playing in the handling of hypo- and hyperglycaemia. Songs were also composed. A wall hanging depicting the food groups was made by participants and was hung up in the hospital. The final aim of helping the patient realise the importance of their own control over their illness, was facilitated by the home economist.

These objectives were that the patient would have an understanding of dietary control, a knowledge of food groups and meal planning. Concepts such as a balanced diet, exchanges and portion size were explained and demonstrated in each meal. They were also taught which foods should be avoided in their condition.

Meal preparation was taught by means of a video and by demonstrations.

The importance of exercise was emphasised as well as the timing thereof. An exercise session was included in the daily programme.

The sample

Fourteen patients, four male and ten female, attended the clinic. Two Zulu speaking ladies acted as interviewers

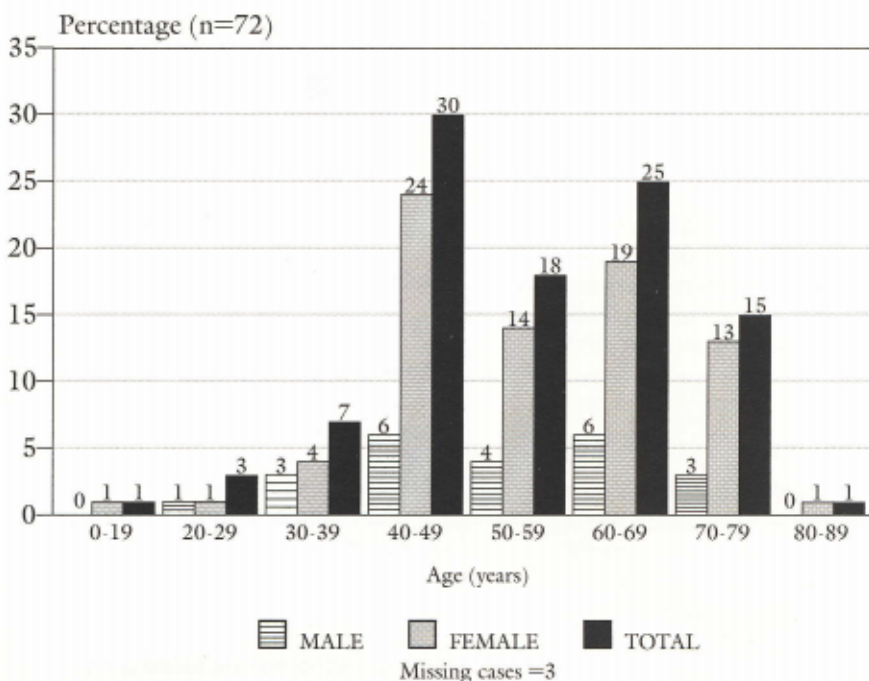
as 33% of the participants were found to have had no formal schooling.

Instrument

Using the objectives which were drawn up for the week, a knowledge test in the true/false/don't know/format was formulated to act as a measuring instrument (table 1). It was tested for content accuracy by two dietitians, and then pre-tested on nine people of varying backgrounds and educational levels. Demographic information with regards to age, sex, length of time they had been diabetic, number of diabetic classes they had attended, level of education, and income source was also collected.

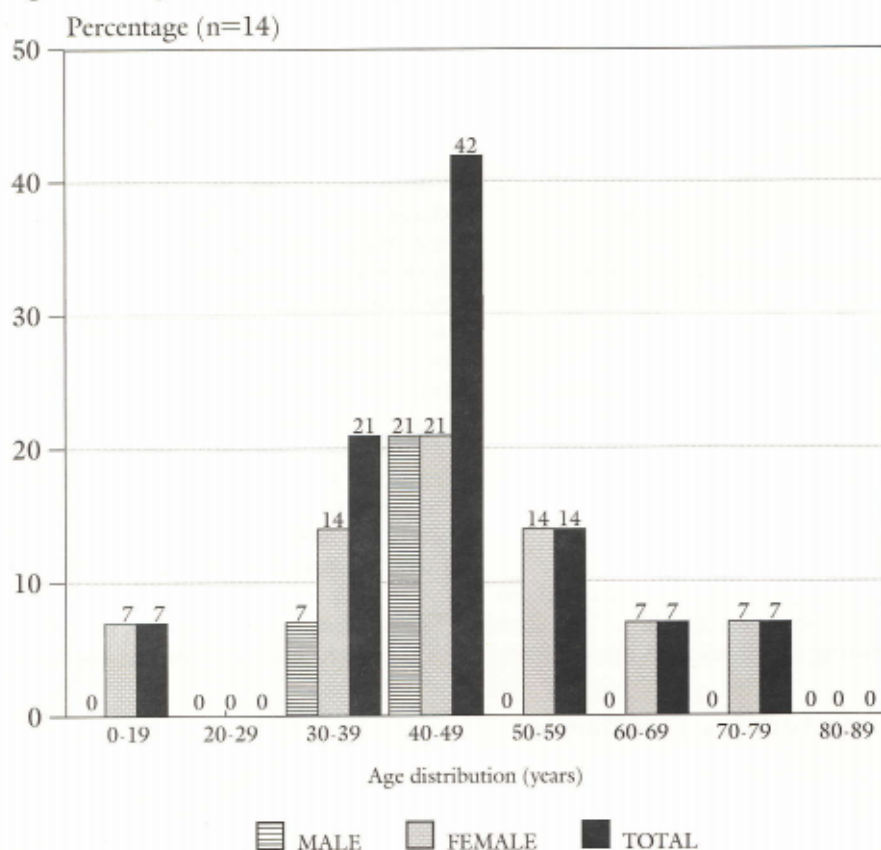
The pre-test was done on the first day of the week. Each patient was asked

Fig 1: Age/Sex Distribution



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Figure 2: Age/Sex distribution



individually by a fieldworker during a time when the rest of the group were involved in a handcraft activity. The post-test was done under similar conditions on the last day of the week.

Statistics

The Student's t-test was used to determine whether there was a significant improvement in the participant's knowledge from the pre-test to the post-test, after being exposed to the week-long education clinic.

Results and Discussion

Demographic characteristics

Age/sex:

The bell-shaped age curve peaked between the ages of 30-50 years in both the preliminary and main studies. The male/female distribution for both studies were similar, making the main sample group representative of the universum (fig 1&2).

Size of family:

This question was included in the

preliminary study to assist in programme planning. The average size was eight members. Larger families, such as these, imply a lower resource reserve for per capita expenditure.¹¹ Income-generating ideas were therefore included in the programme.

Educational level:

The majority of the patients in both study groups had an educational level of up to standard five. The main study group were more educated. This supports the opinion that it will be the more educated people who are more motivated to voluntarily take part in an adult education programme.² (fig 3&4)

Employment status:

More patients in the main study were formally employed. (fig 5&6)

Farming activities:

This was only included in the preliminary study to assist in planning. A majority of the patients had livestock (85%) but less than half (48%) had vegetable gardens. It was therefore included in the programme.

Characteristics of the patient's conditions

Length of time been a diabetic:

The smaller percentage of people who have been diabetics for more than eleven years and also attended the clinic, may be an indication of their decreased motivation to attend an educational input. There is no longer the vulnerability and lack of confidence which usually accompanies a developmental task.³ In motivating this group to attend

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Figure 3: Educational level

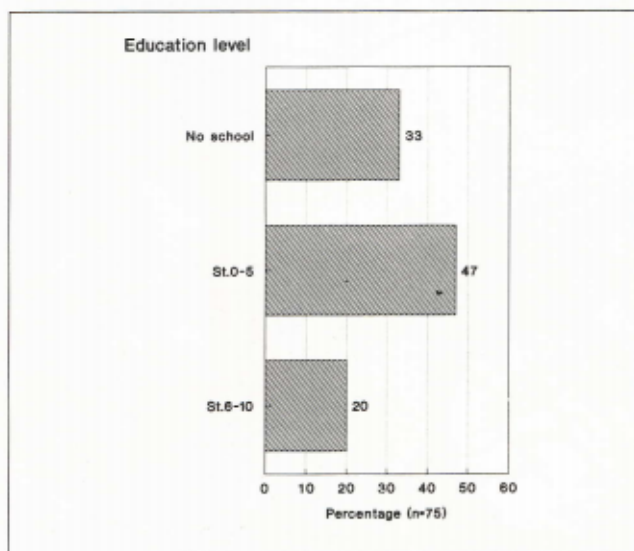


Figure 4: Educational level

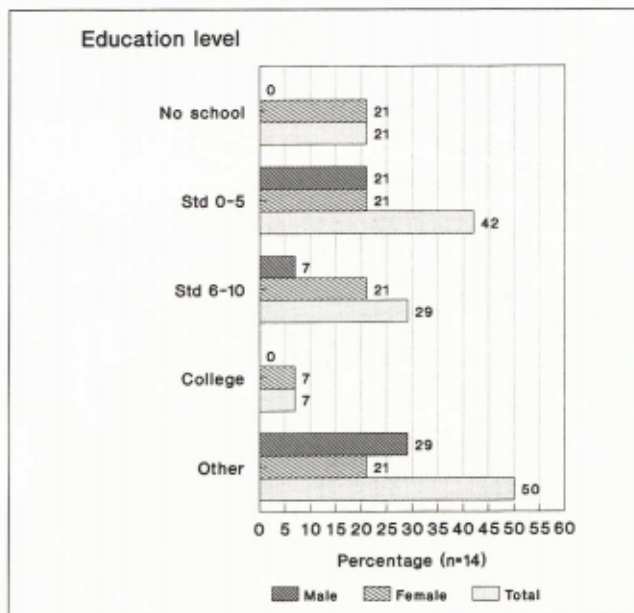


Figure 5: Employment status

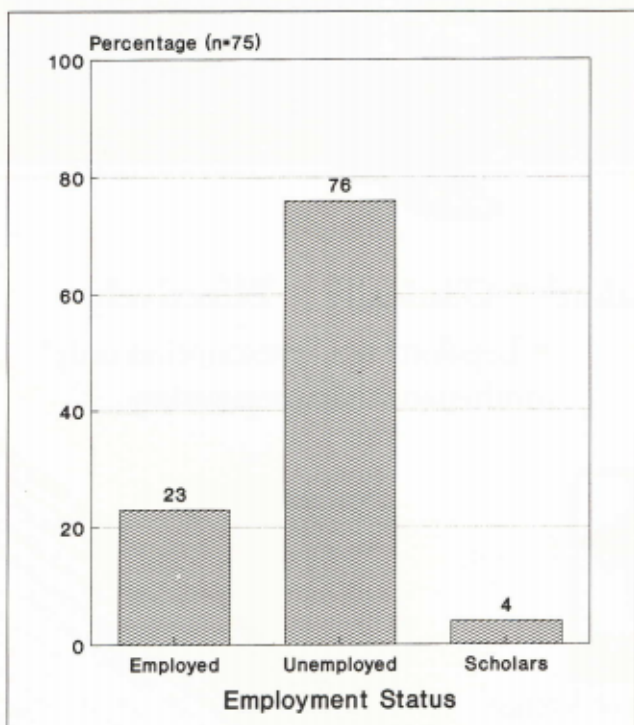
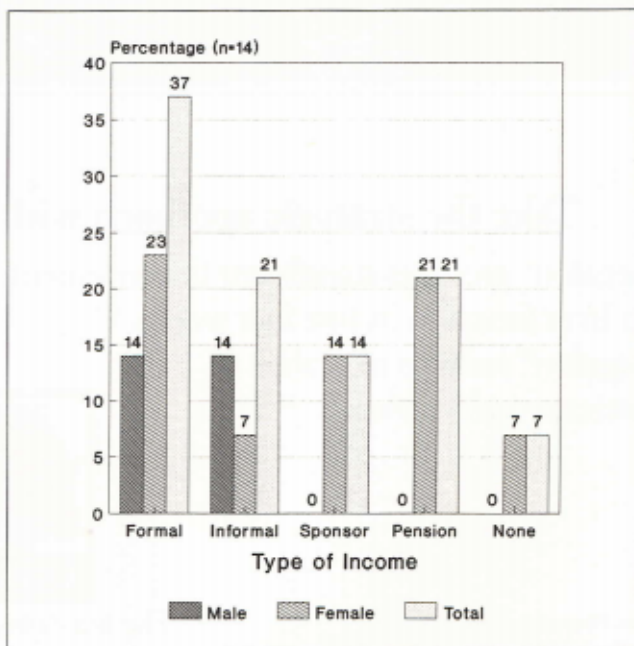


Figure 6: Source of Patient's income



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Figure 7: Duration of Diabetes vs sex

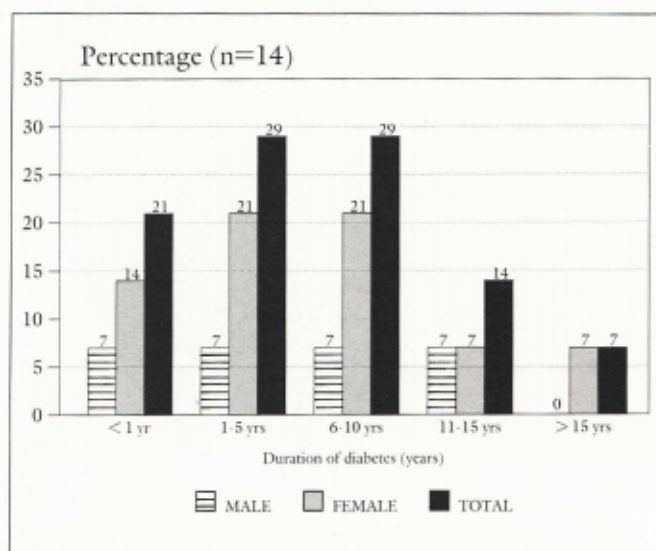
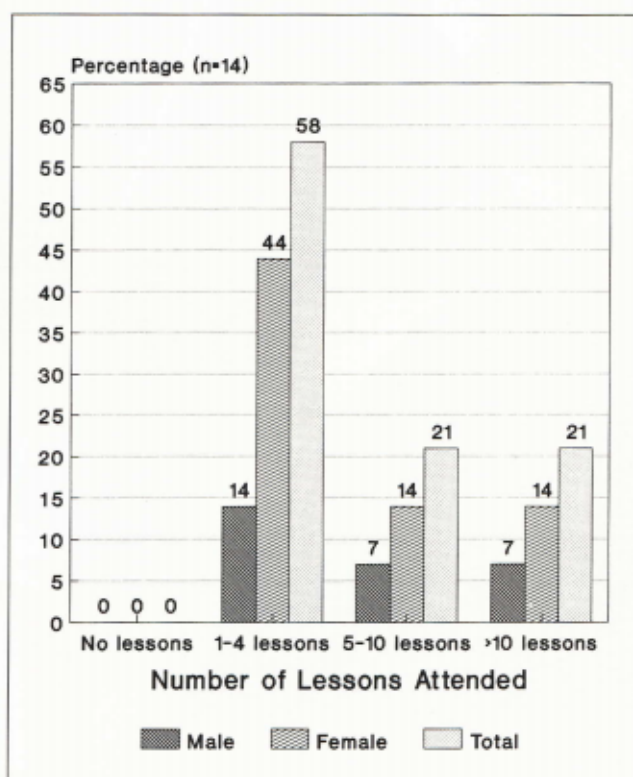


Figure 8. Duration of class attendance



such an educational input, the facilitator needs to create an awareness of a need by pointing out the gap between the actual and the desirable level in their condition and feeling of well-being.¹² (fig 7).

Duration of class attendance:

The people in the main sample, had attended on average, fewer support group meetings. They felt a greater learning need, as they had been exposed to less education. Unmet needs are the greatest motivators for adults to attend an educational input.² (fig 8)

Test results

Pre- and post-test scores:

Nine (9) of the fourteen (14) patients had improved scores in the post-test. Two patients (one male and one female) had lower post-test scores, and in three cases, the scores remained the same. Five percent of the questions were in the "don't know" section in

The more education you have the more likely it is that you will take part in adult education

the pre-test and 0,3% "don't know" responses in the post-test.

Educational level:

Both patients with decreased post-test scores had an educational level of std 6 - std 10, and all the patients with no education had improved test scores.

Duration of diabetes:

Three patients who had been diabetic for less than one year, had improved

their score by an average of 22%, which was more than any other group. This supports the theory of the "reachable moment", where there is a great urgency to learn when a new developmental task is required of an individual. They are therefore more motivated and receptive to learning and the learning process is most effective at this time.³ (table 2).

Duration of class attendance:

There was no correlation between the number of classes attended and their post-test score.

Statistics

There was a statistically significant improvement in the post-test score of the participants as shown by the

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Table 2. Duration of diabetes versus improvement in post-test score. (n=14)

Duration of diabetes	Number of patients	Average pre-test score (%)	Average post-test score (%)	Average improved score (%)
less than one year	3	52	74	22
one to five years	4	65	63,7	-1,3
six to ten years	4	54	72	18
eleven to fifteen years	2	65	75	10
more than fifteen years	1	60	65	5

Table 3. Knowledge scores in pre- and post test

Test 1 mean score	11,7
Test 2 mean score	14
% increase	11,5
Mean difference	2,28
t value	2,95

(n = 14)

Student's t-test. The level of significance was 0,011 ($0,05 > P > 0,005$). (Table 3).

Conclusions and Recommendations

Results from this study show that there is a greater attendance at the clinic amongst the more educated people, those who had been diabetic for a relatively short period of time and those who had only attended a few support group meetings. Those patients whose post-test scores had increased the most were those who had been newly diagnosed.

Learning effectiveness must also be measured by whether the terminal

objective of nutrition education has been achieved, that being changed behaviour. It is to be recommended that future studies concentrate on changes in attitude as well as behaviour.

In planning an education input it is essential to get to know the individual for whom the programme is planned.¹³ A preliminary study was one way of gaining this information. In holistic planning, the individual within his/her world is considered and scope should be given to meet each individual need. The most effective learning will take place if it satisfies individual's immediate goals.¹⁴ Through the multi-disciplinary educational input, a variety of the individual's needs can be met.

The facilitator plays a vital role in adult education. By his/her contribution, individuals will be "enabled" to have greater control in everyday life and in so doing, achieve the ultimate aim of adult education: to improve quality of life.¹⁵

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