

Evaluation of a Nutrition Unit in Winterveld, South Africa: Part I

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Summary

We report on an evaluation of a Nutrition Rehabilitation Unit (NRU) at the request of Medecin du Monde (South Africa) on behalf of the St Peter's Health Centre (SPHC) in Winterveld. Winterveld is a sprawling squatter camp north of Pretoria, the capital of South Africa, with huge socio-economic and environmental problems. Malnutrition is a common clinical problem at the SPHC. For this reason a NRU was initiated in 1989. The evaluation had two main components: an unstructured interview with health workers at SPHC and the NRU and an analysis of all the records of patients admitted to the unit since it opened till April 1991. The major conclusions are that the malnourished children admitted to the NRU come from a background of severe poverty, poor environmental conditions, high rate of infections and inadequate attendance of well baby care. Patient management at the NRU seems inappropriate with poor record keeping, high rates of failure to gain weight, of infections and of failing to complete treatment. In our recommendations we provide leads to guide discussion rather than dogmatic prescriptions on what needs to be done. The major recommendation is that the problem of malnutrition should not be addressed as the problem of the NRU. It is a community problem that needs to be addressed comprehensively by community structures and all levels of health workers. The NRU should be seen as a last resort.

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KEYWORDS:

Health Education; Primary Health Care; Nutrition Disorders; Poverty; Health Planning

Introduction

In this three part article we report on an evaluation of a nutrition rehabilitation unit in Winterveld. The evaluation being reported upon is a "process evaluation"¹ exploring problems in the process of implementing the nutrition programme.

The evaluation was conducted by the authors of this report. It is divided into 3 parts: a literature review (part I); an unstructured interview with health workers at SPHC and the NRU (part II); and an analysis of all the records of patients admitted to the unit since it opened (part III).

The unstructured interviews were conducted on the 8th of May 1991 at the SPHC. PF (Paulo Ferrinho) interviewed separately the South African coordinator of Medecin du Monde, one of the professional nurses at the SPHC and the two lay health workers at the NRU, keeping notes of the conversations.

Patient records were obtained from the NRU staff. The data on the patient records were codified and entered on computer sheets.

Random checks on the data entered were carried out in 50 patient records. As cash income was frequently incorrectly entered, the author of this report rechecked and,

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when appropriate, corrected the figures for all patient records.

The data was analyzed with the assistance of the Institute of Biostatistics of the Medical Research Council. Statistical significance was determined by T student tests when one of the variables being compared was continuous and the second one categorical or chi square tests when both variables were categorical. Multivariate analysis was carried out when appropriate: when the dependent variable was continuous a general linear model was used; and when the dependent variable was categorical a stepwise logistic regression model was used.

The Study Area

Winterveld, with an area of 300-400km², is a large squatter area, 30km north-west of Pretoria, in the Odi Health Ward of Bophuthatswana.

The 1936 Land Act declared Winterveld a "released area" where land could be purchased and settled by African residents.² Since then it has developed slowly not as agricultural holdings, as intended initially, but as a large peri-urban slum.

In 1981 the population was estimated at 120 000 persons, 140 000 in 1984 and 180 000 in 1991 (although unofficial estimates claim a population estimated at about 1-million).^{3,4}

It is densely populated with 80% of the population in the southernmost one quarter.⁵ There living densities rise to about 240 persons per hectare in some instances, but the average density is 140 persons per hectare.⁵

Most of the land is controlled by members of the Plot Owners Committee of Ten.⁵ The majority of the people rent small plots from the land owners and live in self-built shelters.

Water, from boreholes or taps, is sold by the plot owner at R0,10-0,25 per 25 litres. Contamination of the underground water table, by the pit latrine system, is a recognized problem.⁵ There is widespread unemployment and poverty.

ANC	= Ante-Natal Clinic
EWA	= Expected Weight for Age
GH	= Garankuwa Hospital
GFNU	= Gold Fields Nutrition Unit
NRU	= Nutrition Rehabilitation Unit
RTHC	= Road to Health Card
SPHC	= St Peter's Health Centre in Winterveld
WBC	= Well Baby Clinic

Health care in Winterveld is provided at: two state (Bophuthatswana) clinics, one outside the area and the second in the less populated portion in the north; the St Peter's Health Centre (SPHC) in the most densely populated area in the south; a health post run by the Sisters of Mercy; and by 5 General Practitioners (GPs) in private practice. One of the GPs has some beds for supervised deliveries

attached to his practice. The two referral hospitals include the Odi Community Hospital (Bophuthatswana) and Garankuwa Hospital (GH), the academic hospital of the Medical University of Southern Africa (MEDUNSA).

A Brief History and Description of the St Peter's Clinic and the Nutrition Rehabilitation Unit

The SPHC was started, in the mid 1970s, by the Roman Catholic Church and runs with their continued support. Medecin du Monde has been involved since 1986, providing financial assistance, doctors and training.

The SPHC is in a prefabricated building, with electricity and running water. It opens 8 am - 4 pm on weekdays and 8 am - 1 pm on Saturdays. It is staffed by 2 professional nurses, 1 staff nurse, 5 lay health workers, 2 nutrition rehabilitation workers, 1 clerk and 1 cook. Medical support is provided thrice a week by a Medecin du Monde doctor and once a week by a local General Practitioner.

Management of the SPHC is done on a collective decision making basis. The professional nurses run a clinic for common ailments every working day, an ante-natal clinic (ANC) on Wednesday mornings, a well baby clinic (WBC) on Thursdays and a chronic care clinic on Fridays. There is no provision for in-patients or for supervised deliveries. There is an intensive programme of home visiting, to follow up patients, identify problems and to identify cases to be referred to the preventive and promotive services. The SPHC staff attends to over 100 patients per

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day. All services, except WBC, are rendered at a nominal fee. WBC is a free service.

A recent evaluation of the SPHC⁵ identified the following as objectives for the SPHC:

1. To achieve 80% of immunisation coverage of all children under 5 who live within a 5km radius of the centre by 1993.

Malnutrition is a community problem and needs to be addressed comprehensively by community structures

2. To establish vegetable gardens in 50% of dwellings within a 5km radius of the clinic by 1993.
3. To improve the socio-economic position and the know-how in the community.
4. To render the best service possible.

The problems identified in the evaluation include, *inter alia*:

1. Some of the objectives were unclear.
2. The methods to achieve the objectives in practice were not thought through.
3. Line management was not defined.
4. Management was not properly structured.

It is telling that the NRU was not included in the evaluation. Still two comments in the report point to the existence of problems:

1. "There is some differentiation between those health workers who are primarily involved in the clinic and those primarily assigned to the nutrition centre. This lack of unity at times causes problems".
2. "(a) nutrition worker has to work at another nutrition unit and she misses most of the (in-service training) sessions".

The Nutrition Rehabilitation Unit

The Gold Fields Nutrition Unit (GFNU) was established in March 1987, at MEDUNSA, as a research and training facility for nutrition related problems. Malnourished children and their mothers after discharge from the wards of GH, form the bulk of the children cared for, although 26% of its intake is referred directly from clinics and GPs.^{4,6,8}

In April 1989 the GFNU was invited to assist the SPHC with the problem of malnutrition in children. A

Malnutrition should be dealt with at a rehabilitation clinic only as a very last resort

nutrition day-care centre, the NRU, was then established with 1 lay health worker, a mother of a child previously admitted to the GFNU.

A second worker was appointed in June 1989, again a mother of a child previously admitted to the GFNU. Both received some time in training at the GFNU before their

appointment. Their training consisted of lectures, practicals, and reading assignments.

The objectives of the NRU¹ were defined as:

1. growth monitoring of large numbers of children.
2. daily assessment of children with protein-energy malnutrition (PEM).

Winterveld grew uncontrolled from 120 000 (in '81) to 1 000 000 (in '91).

3. daily health and nutrition education in the form of talks, demonstrations and practicals.
4. daily feeding of children who are newly admitted to the rehabilitation programme,
5. treatment of infections and minor ailments,
6. guidance and advice concerning social problems.

Two small evaluations of the programme in 1990 considered it very effective in identifying and treating PEM in an early stage, at a cost of R2,50 per day per mother-child pair.^{4,9}

The rehabilitation is provided free of charge. A mother/caretaker and the malnourished child can be admitted for daily care or on a less frequent basis. A standard admission form was used for all children enrolled at the NRU. The programme for day care emphasises child feeding and some health education. A home visit should

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be carried out for all new admissions and patients that default from the programme. This visit should be reported in a standard format. A doctor comes once a week to see new admissions, problems and to discharge patients. On other days problems are referred to the professional nurse at the SPHC.

A Review of the Literature available on Malnutrition in Winterveld

Malnutrition is perceived by health workers as being a common problem in Winterveld. The reasons are complex but the impression is that it is due to the interaction of poverty with an environment that predisposes to high rates of infections and parasitosis. It is felt that more cases of malnutrition were seen in 1991 than in 1990 and this is directly attributed to the phasing out of the bread subsidy in December 1990. The health workers of the SPHC report seeing about 2 kwashiorkors every

It seems malnutrition in males occurs at a later stage

week (1991). A recent influx of Mozambican refugees could also account for part of the problem.

It is difficult to give the proper weight to these discerning impressions. For 1989 the NRU admitted an average of 16 children per month, 20 for 1990 and 49 for the first 4 months of 1991 (23 for the equivalent period in 1990). This could reflect either a growing problem in the area or a growing awareness of the existence of the

NRU. Although the data is still too limited to allow firm conclusions, it seems that the lowest number of malnutrition admissions occurs in June (the coldest month of the year).

In a previous study it was reported that at the time of the children's admission to hospital, mothers of malnourished children experienced

Children younger than 1 year show a more rapid catch-up growth than older children

less support from the fathers of their children and they also reported their relationships with their children to be less pleasurable than did mothers of control children.⁶

A recent evaluation of the GFNU provided us with some useful regional data. There seems to be a decline in the number of admissions due to PEM and PEM related infections to GH, a decrease in the number of severe cases of malnutrition and in the number of deaths and case fatality rate for PEM and PEM related deaths like diarrhoeal diseases, measles and pneumonia.⁷

The evaluation report also throws some light into the complex syndrome of malnutrition. It seems that malnutrition in males occurs at a later age. It also seems that children of 1 year and less show a more rapid catch-up growth in weight as well as in height than children admitted with malnutrition at an older age.⁴ This catch-up growth is directly related to the quality of mother-child attachment and to the mother's resources.⁸

Although better nutritionally than on admission to the NRU, at follow-up, (one year after discharge from the GFNU), 48% of children were still less than 80% of the expected weight for age (EWA), 4% were still < 60% of the EWA, and 5% had lost weight since discharge; 6% had a weight for height (WH) < 80% of the expected WH; 80% were < the expected height for age (EHA) and half had shown a decrease in the EHA. Twenty percent (20%) of the younger siblings of the children in the follow-up group were underweight.⁴

Twenty percent of the children did not have a road to health card (RTHC); 44% were not up to date with their immunisations; $\frac{1}{3}$ of the children had another caretaker compared with one year ago; only $\frac{1}{3}$ had the father or the husband of the mother as the breadwinner, in 10% there was no breadwinner and 50% had a breadwinner which was not one of the parents; domestic and personal

Catch-up growth is directly related to the mother-child attachment

hygiene scored generally very low; and a significant proportion of the mothers still did not know why the child was malnourished (17%), and most attributed it to their own ignorance.⁴

On the more positive side $\frac{2}{3}$ of mothers were on modern family planning methods (FP) and 63% of the families had some type of food production at home. Although the mortality after 1 year was very low,

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the number of children studied were too small.⁴

Community based data is available from a nutrition and two immunization surveys.^{10,11}

One of the vaccination surveys¹⁰ considered the Odi Health Ward as a unit but the other¹¹ (May 1990), surveyed the densely populated area southern part of Winterveld (Klippan) following the 30x7 cluster sampling method recommended for the evaluation of the Expanded Programme of Immunization. This survey revealed that only 77% of the

Malnutrition is perceived as being a common problem

children had vaccination cards, measles vaccine coverage was only 57% and only 10% of the children had completed all eight vaccinations according to schedule by the end of the 12 month following birth.¹¹

The nutrition survey, also in the Klippan area (August-October 1991), sampled 996 children under 5 years of age (505 males and 491 females) following a cluster sampling technique. The most important result was the finding of a rate of wasting (weight for height below the third percentile) of 10% (D Coetzee, unpublished data).

Conclusion

All the data pointed therefore to a community with a large nutritional problem with adequate healthcare support at secondary and tertiary levels, but with inadequate co-ordination of activities/resources at the primary level.

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