

Knowledge, attitudes and practices related to healthy childbearing in the West Coast/Winelands

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Introduction

Many of the known risk factors associated with low birth weight (LBW) infants, such as socio-economic status, ethnicity, genetic makeup, and obstetric history, are not within a woman's immediate control. However, there are many things that a woman can do to improve her chances of having a normal healthy child. Lifestyle behaviours, such as cigarette smoking, nutrition and the use of alcohol, play an important role in determining the growth of the foetus. There is a high rate of low birth weight infants born to women living and working on the farms in the Western Cape. Very little is known about the knowledge, attitudes and practices of the women living and working on the farms that may be influencing their pregnancy outcomes. The aim of this qualitative exploratory study was to establish the knowledge, attitudes and practices of reproductive age women related to lifestyle factors such as alcohol use, smoking and nutrition, and the perceptions of these factors by health care workers, in Stellenbosch and Vredendal areas (small towns in the Western Cape).

Methods

Four methods of data collection were employed: focus groups and individual interviews with women on farms, and focus groups and semi-structured interviews with health workers. All focus groups and interviews were recorded, transcribed, and then coded to form themes. Findings were then triangulated across data collection methods.

Results

Participants described high levels of use of alcohol and cigarettes by women living on the farms in general, and in pregnancy, despite reasonable levels of awareness of the dangers to the foetus. Regarding nutrition, women have a fairly good sense of eating in a balanced way during pregnancy, but affording this on very low wages is difficult. Many ideas regarding how to increase healthy lifestyles were offered, ranging from environmental improvements, such as access to recreational facilities and handwork classes, to more contact with health services, and improvement in conditions of employment.

Conclusion

This study highlights the lifestyle factors related to LBW infants on farms, and proposes that these should be addressed collectively by all the relevant sectors in the community. Although some of these processes have been initiated, there are gaps in the health services, which should be addressed immediately to provide women with opportunities to ensure acceptable pregnancy outcomes.

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Introduction

Low birth weight (LBW), a birthweight <2500 gms, has short and long term consequences for the health of the infant (Pojda & Kelly 2000: 6). Lifestyle behaviours such as cigarette smoking, weight gain during pregnancy, and the use of alcohol play an important role in determining birth outcome and infant birthweight (Chomitz; Cheung; & Lieberman 1995: 121).

Studies have confirmed that for the farm-workers in the Winelands of the Western Cape Province, high alcohol consumption is an integral part of life (London 1999: 1407; Dopstop Association 2001: 3) even during pregnancy (Croxford & Viljoen 1999).

Problem

Vredendal is a rural farming area and Stellenbosch a peri-urban farming area in the West Coast/Winelands District of the Western Cape (Rendall-Mkosi 2004: 60-6). In 1999, 16% of babies born in Stellenbosch had a birth weight of less than 2.5 kg, while Vredendal's rate was 23% (Miles 2001). This exceeds the South African average of 12% (MRC 2000). According to the Administrative Committee on Co-ordination/Sub-Committee on Nutrition (Pojda & Kelly 2000: 4) any rate above 15% should be regarded as a major public health problem.

While numerous quantitative studies of women on farms in the Western Cape, measuring cigarette smoking, alcohol intake, drug use and eating practices are published (Croxford & Viljoen 1999; Dopstop Association 2001; and London 1999), very few exploratory qualitative knowledge, attitude, belief and practice (KABP) surveys (Katzenellenbogen; Joubert, Abdool-Karriem; 2001: 169) have been done to establish why women of childbearing age engage in risky behaviours which may compromise their own health and the health of their babies. In order to develop appropriate health promotion programmes to address lifestyle factors in these communities which may be contributing to these high rates of low birth weight infants, there was a need to understand both the women's and health care providers' knowledge and perspectives on birth weight and maternal behaviours during pregnancy.

Aims

The aims of the study were to develop an understanding of the knowledge, attitudes, practices and cultural beliefs of women of childbearing age living and working on farms in terms of nutrition, alcohol and smoking behaviour in general and specifically in pregnancy. In addition the study aimed to establish the knowledge, attitudes and practices of health service workers related to women's health, and specifically antenatal services for childbearing women working on the farms.

Methodology

Knowledge, Attitude, Belief and Practice (KABP) surveys aim to measure facts, psychological and personal variables in order to better understand why people act the way they do so that more effective programmes may be developed (Katzenellenbogen et al 2001: 169). Therefore a qualitative study was undertaken to develop an understanding of the knowledge, attitudes, practices and cultural beliefs of childbearing women on farms, and health and social workers serving the farms, in terms of healthy pregnancy outcomes. Pope and Mays (1995: 43) note that "the goal of qualitative research is the development of concepts which help us to understand social phenomena, in natural (rather than experimental) settings, giving due emphasis to the meaning, experiences, and reviews of all the participants". This qualitative study was guided by a theoretical framework which included the following behavioural models: the Health Belief Model (Glanz 1998: 6) and the Health Action Model (Tones 1995: 17).

Three farms in each of the two sites (Stellenbosch and Vredendal) were chosen to represent farms that had a community health worker and ones that do not have such a resident worker. The farms in Stellenbosch were accessed through the Dopstop Association. In the Vredendal area access was negotiated with the farmers through the nurse who runs the mobile clinic. The study participants were selected from women living on these farms, and health workers who offer services to the women. Data were collected during March and April 2003. All interviews and focus groups were conducted by the first author in Afrikaans, who is an experienced nurse and nursing tutor, and who is fluent in both Afrikaans and English.

Focus groups with women on farms

One focus group discussion with a group of eight to ten women on each farm was planned. The aim of these focus groups was to explore lifestyle issues in general and more specifically during pregnancy. Women on the three farms both in Stellenbosch and Vredendal had an equal chance of being selected to participate in a focus group or in-depth interviews, and were homogeneous with regard to their living, working and cultural contexts.

The facilitator's main role was to allow for free flowing discussions and to ensure that there was no domination by one person. It was emphasised to all participants that there was no right or wrong answer and that they should feel free to express their own opinions. The questions posed covered perceptions of 'big and small babies', feelings about falling pregnant, habits in pregnancy, and the effect of smoking and drinking alcohol on the foetus. They were also asked for ideas as to how the lifestyles of women can be improved.

No direct confrontational questions were asked about drinking and smoking habits, such as "*Do you drink and how often do you drink?*" Women were rather asked whether they knew women who were drinking during pregnancy. This method of questioning kept them relaxed even when they shared their own personal experiences.

The seven focus group discussions took place during working hours in a communal area on each farm, and were constrained in terms of time, and the availability of the women. The actual number of participants per group ranged from 3 to 11 (Table 1A).

Interviews with women on farms

Since the topics of pregnancy and lifestyle habits are sensitive for some women, it was likely that some perceptions and attitudes may be discussed more freely on a one-to-one basis than in the group situation. Therefore semi-structured interviews were conducted with a few individual women on each farm following the same schedule of questions as the focus groups.

A diverse sample was planned by selecting about three women of different

Table 1a: Description of Women's Focus Groups

Farm	Place	Number of women	Mean age of women	Mean number of children per woman
A	Vredendal	9	25	1
B	Vredendal	6	40	3
C	Vredendal	6	37	2
D	Stellenbosch	11	31	2
E	Stellenbosch	7	39	2
F	Stellenbosch	3	23	1
G	Stellenbosch	8	29	2

ages (ranging from 20 to 45) on each farm. Interviews took place during the month of March 2003 in Vredendal and during April 2003 in Stellenbosch. New participants were enrolled until no new knowledge was found i.e. saturation was achieved (Liamputtong & Ezzy 2005: 86) The resulting sample of 12 women (9 from Vredendal and 3 from Stellenbosch, Table 1B) were interviewed for on average forty minutes. Interviews were conducted in a private location on the farm, such as the woman's home or other private place.

Focus groups and semi-structured interviews with health workers

Two focus groups were conducted for health care workers in each of the two sites to establish the perceptions of health workers of the lifestyles of women on farms, and to elicit ideas regarding potential interventions, especially for pregnant women, to reduce harmful habits and promote health amongst the women. Health workers had an equal chance of being selected to participate in the focus group since there are small numbers of staff at each clinic, and all staff were invited to participate. Those who could not make the group session were interviewed using the same schedule on an individual basis.

Each discussion group or interview opened with a question about what the participants thought the effects of poor nutrition, alcohol use and smoking during pregnancy are. Thereafter, questions covered their screening and education practices with women from the farms, and their perceptions of differences between women who plan and those who don't plan their pregnancies.

Data Analysis

All interviews and focus groups were

tape recorded, and then transcribed and translated. The transcriptions were analysed by the first author using a Framework Approach (Pope, Ziebland & Mays 2000). Inductive qualitative analysis was carried out in keeping with the grounded theory approach i.e. no predetermined codes and categories were predetermined, instead codes, categories and themes were generated from the transcripts (Limputtong & Ezzy 2005: 267). Focus groups and interviews were then triangulated, and findings grouped according to major topics of interest to the study, thus generating a framework for analysis of data (Mays & Pope 2000; Pope, Ziebland & Mays 2000).

Trustworthiness

Triangulation of data sources was used as the primary methodology to assure trustworthiness in this research. Data was collected and compared from a number of sources which included interviews and focus groups with women on farms, as well as interviews and focus groups with health workers. Triangulation compares the results from two or more different methods of data collection or data sources and looks for patterns to corroborate the overall interpretation and themes (Mays & Pope 2000).

Peer debriefing was also used as the first author discussed the research process and findings with one of the co-authors during the process of data analysis (Krefting, 1991).

Results

Focus groups and in-depth interviews with women on farms

Seven focus group discussions were facilitated and twelve interviews were

conducted with women living on the farms. (See Tables 1A and 1B.) Diversity in age (18 – 56 yrs) and number of children (0 – 6 children) was achieved in the sample of participants, except for the three participants of the individual interviews in the Stellenbosch area who were all under 27 years of age. There was a mix of farm workers and domestic workers, but all resided on the farms.

When they were asked how they felt about pregnancy, a range of attitudes were expressed. About half of the participants were positive about their pregnancies while the others felt negative. One participant explained that women had different attitudes since their circumstances were different, and many had fallen pregnant as teenagers. There seemed to be a clear distinction between those who planned their pregnancies being more likely to have a healthy pregnancy compared to those who had not.

Knowledge about pregnancy, birthweight and nutrition

Knowledge about pregnancy, birthweight and nutrition was generally quite sound, although superficial. An introductory question namely: "Do you prefer a small or big baby and why?" was asked. Most women indicated that they preferred a big baby for the following reasons:

*"It is more healthy than a small baby."
"A small baby is underweight and stays ill."*

Three of the women indicated that they preferred a small baby:

*" 'n Klein baba is meer geriefliker om voort te bring."
("It is more convenient to give birth to a small baby.")
" Die ander kinders wil die baba vashou*

Table 1B: Description of Women participating in Semi-structured Interviews

Woman	Place	Age (years)	Number of children	Type of work
A	Vredendal	33	2	Domestic worker
B	Vredendal	40	2	Seasonal farm worker (cutting grapes)
C	Vredendal	30	1	Seasonal farm worker (cutting grapes)
D	Vredendal	29	3	Seasonal Farm worker (cutting grapes)
E	Vredendal	38	5, expecting the 6 th child	Housewife
F	Vredendal	42	2	Domestic & welfare worker
G	Vredendal	24	1	Seasonal farm worker (cutting grapes)
H	Vredendal	42	4	Cook at the crèche
I	Vredendal	40	3, expecting 4 th child	Seasonal farm worker (cutting grapes)
J	Stellenbosch	26	1	General & farm health worker
K	Stellenbosch	21	1	General farm worker
L	Stellenbosch	23	2	Domestic worker

– *die klein baba is meer hanteerbaar.* (“The other children want to pick up the baby – the small baby is easier to handle”.)

When asked about the weight of a normal sized baby few woman spoke of 3kg while the rest mentioned a figure such as 1kg, 2kg, 7kg and 10kg.

When asked how a pregnant woman can ensure a healthy baby, most of them responded by mentioning the eating of healthy food and abstaining from using alcohol and cigarette smoking.

When asked to explain healthy eating, all the women mentioned vegetables, fruit and milk, and only a few mentioned proteins:

‘Fruit and vegetables, you must drink milk, juice and iron.’

“Lots of fruit, drink milk – I cannot eat meat, chicken must be roasted.”

“Fresh vegetables, fruit – greasiness should be ignored – use water instead of oil when cooking meat.”

When asked whether they were able to buy food to ensure a healthy diet with their wages, all the women from the farms in the Vredendal area stated that the money they were earning could not cover enough food for a week. The women on farms in the Stellenbosch area stated that their earnings (which were slightly higher than in Vredendal) was enough to cover

food.

Knowledge about the effects of alcohol use and smoking during pregnancy

In an attempt to avoid being confrontational, participants were asked whether they knew of women who smoked or used alcohol during pregnancy. Most of them said there were women who were drinking and smoking, and some discussed their own substance use in pregnancy, while a few answered that they were not aware of women on that specific farm who were smoking or drinking. When asked how frequently women were drinking, they responded:

“Mainly weekends”

“They drink the whole week.”

“Women drink more than the men.”

“Every weekend I used to have a bottle.”

When asked what effect smoking and alcohol might have on the unborn baby, most of them were aware of the negative effects it could have on the unborn baby. The following effects were mentioned:

“It may affect the heart, the baby is also very small and has not got a weight.”

“Lots of children are disabled – are born before the time.”

“A woman I know - her baby was drunk at birth.”

“When the child is big, he will think slower as well as reacting slower. If you drink too much then you can get the fetal syndrome – eyes that are far from each other – the child can be small or the child can be born abnormal.”

When asked about the availability of wine on farms, they indicated the majority of farms were not making wine available to farm workers, but that workers bought liquor in town. One farm in the Vredendal area apparently gave male workers one litre of wine on Fridays, as part of their wages.

The role of the health workers

When asked how the nursing sister at the clinic addressed pregnant women who were smoking and using alcohol, the following were said:

“They fill in a card and ask whether you smoke or drink.”

“She tells you not to drink as the child is suffering.”

“She is angry.”

“She speaks, she explains what smoking and alcohol can do to a baby - cause a small and a disabled child.”

“They did not say anything to me.”

“They are very strict – they talk to the women who are smoking and drinking.”

Ideas about programmes to prevent infants with LBW

A few women did not know what to suggest in order to prevent low birth weight, while others suggested alcohol use and smoking should be reduced, and healthier eating habits adopted, maybe with the distribution of food parcels. The need for lighter work for pregnant women was also an issue. They also stressed the responsibility of the pregnant women

towards herself and the baby. A few women were not so optimistic and said: *"It really depends on yourself, you can't help them to change – they will not listen"*.

Some participants proposed more collective approaches that could change the circumstances in which they live and work. Many mentioned their participation in the church as the only community activities they participate in, and that more recreational opportunities to prevent alcohol abuse, and activities aimed at developing skills were needed:

"People must stand together, and they must demand their rights."

"Informal alcohol sellers must be closed down."

Focus groups and semi-structured interviews with health workers

Four focus group discussions were facilitated, and three semi-structured interviews with three health care workers, who did not participate in the focus groups, were conducted. The focus groups consisted only of nurses as they are the most professionals in the health services, however, a health educator was interviewed on an individual basis (Tables 2a and 2b).

Knowledge of the effects of alcohol use, smoking and poor nutrition during pregnancy

There was a high level of awareness by the health staff about the effects of alcohol and smoking on the fetus. Various signs, symptoms and long term functional problems of the affected foetus were described. Some of the nursing staff also mentioned the effects it might have on the mother.

"Poor hygiene due to alcohol use"

"She also does not come regularly for follow-up visits"

Screening and referral practices

When asked about screening practices, some of the nurses made reference to the admission form with set questions. As the form did not allow for adequate questioning regarding alcohol use, smoking, poor nutrition and other forms of abuse, some of the nurses spent time in discussion asking mothers about these

Table 2a: Description of Nurses Focus Groups

Clinic	Place	Number of Nurses	Category of Nurse
A	Vredendal	3	1 RN 1 EN 1 ENA
B	Vredendal	4	2 RN 1 EN 1 ENA
C	Stellenbosch	6	6 RN
D	Stellenbosch	4	2 RN 1 EN

Table 2b: Description of Health Workers participating in Semi-structured Interviews

Clinic	Place	Category of Health Care Worker
A	Vredendal	Registered Nurse
B	Stellenbosch	Enrolled Nursing Assistant
C	Stellenbosch	Health Educator

risk factors. Also, as part of their basic history taking they determined socio-economic conditions to help with the assessment of nutritional status, and made use of their observation skills by looking for signs of physical abuse.

"We check the weight – is she picking up or not, we ask if they smoke, drink, when I book them, then you listen, see if the woman is drunk."

"The issue around family violence is referred to social services – further there is not much I can do, as a case must be made – depending on the client."

"If they do not pick up weight then I check for TB or HIV/AIDS status – then we give supplements for mothers who are breastfeeding and pregnant women."

Nurses from Vredendal said that women told them about their circumstances, while some of the nurses from Stellenbosch were of the opinion that not everybody was honest about alcohol use.

With reference to referral or intervention when pregnant women were not gaining weight, abusing alcohol or suffering other forms of abuse, the following responses were given:

"Assaults due to financial problems and family violence are referred to the police- we do not know whether they go to the police."

"We refer to the social worker who will do the other referrals."

Information given to pregnant women

In Vredendal the nurse reported providing information regarding alcohol and smoking, with emphasis on the effect it might have on the baby. They also provided information about eating enough and eating correctly. Information was given verbally and by means of

pamphlets. However, the nurses acknowledged that the women often discarded the pamphlets as soon as they left the clinic.

In Stellenbosch information was given by the health educator using various teaching methods on an individual and group basis. A comprehensive package, covering mother and child topics were presented. This information was, however, only given to women attending the clinic.

Perceptions of the lifestyles of pregnant women on farms

The lifestyles of women living on the farms were described in the following ways:

"Women are not neat, poor hygiene – high percentage of alcohol use and smoking, they eat poorly, too many children, high illiteracy rate, high rate of teenage pregnancies."

"Most of them are from the farms, low socio-economic group."

"They do know how to ensure a healthy baby, because they do get enough information, some of them have a "I don't care" attitude."

"Some of them do not take into consideration what you tell them – most of them come to the clinic for the first time and then they just stay away."

When asked whether there was a difference between planned and unplanned pregnancies with regard to

negative habits continuing during pregnancy, the nurses were in agreement that mothers who planned their pregnancies were more motivated than the ones who did not plan. The nurses were, however, of the opinion that most pregnancies were unplanned. They were concerned about the high rate of teenage pregnancies and that it seemed to be the fashion. There was an interesting difference in behaviour between the more rural (Vredendal area) teenagers -being more committed to raising their children well - compared to the periurban teenagers (Stellenbosch).

"Most of the pregnancies are unplanned – a lot are saying they do not want another child, but then they are already pregnant."

"The women also don't come for family planning – hulle wil bewys dat hulle kinders kan kry." (- they want to show that they are fertile)

"The view that I must have a baby is difficult to change."

Opinion about whether women are able or unable to change habits during pregnancy

Different views were shared amongst the nursing staff.

"Eating habits are difficult to change as a result of the socio-economic conditions, drinking and smoking are also difficult to change, but the violence situation could be changed."

"The alcohol intake can be changed."

"They can be more hygienic – they can be more responsible."

"The smoking story is very difficult to change."

Different opinions were expressed regarding high-risk behaviours. Some felt it was difficult to change as people were exposed to it since childhood and some were doing it for pleasure. They also mentioned the difficulty of stopping smoking and alcohol use, and that one cannot force people to change. One health worker based her opinions on her own personal habits.

Recommendations to ensure that fewer infants are born with LBW

In general, these recommendations were very broad and not limited to the parameters of nursing practice only. They included the creation of more job opportunities, more involvement by farm women in recreational activities, and support-groups for women. Regarding teenage pregnancies, school programmes

aimed at reducing teenage pregnancies were suggested. Improvements in service provision could include educational videos, more effective family planning services, more mobile services, food parcels, and the appointment of more appropriately trained staff.

In Vredendal the recommendations also focused on the services and the support from the farm owners, while the recommendations from the Stellenbosch area also focused on community involvement and the role of the schools. They felt that more focussed sexual development programmes should be presented at schools and that the current youth programmes and the activities of the Dopstop Association should continue. A health educator in Stellenbosch also recommended that more personnel should be trained as health educators.

Discussion

In exploring the knowledge, attitudes, practices and cultural beliefs of childbearing women on farms and those of the health workers with regard to a healthy pregnancy, this study has mainly served to confirm the high levels of substance use by women on farms and the inadequacy of the service providers in being able to deal with the problems relating to individual habits and community wide norms.

Knowledge and attitudes towards a healthy pregnancy in women

Although women on the farms seem unaware of the ideal weight of a healthy baby at birth, they were knowledgeable about the factors that could influence the baby's weight both positively and negatively. The women were aware of the effects of poor nutrition, smoking and alcohol use during pregnancy. Some of them personally experienced it by having affected babies, while others knew of people who had.

Knowledge and practice regarding healthy lifestyle promotion by health workers

The results suggest that screening regarding alcohol use, smoking, poor nutrition and other forms of abuse, was inadequate. Although some health workers mentioned that they made use of different approaches to obtain information, some also mentioned that a lot of women did not talk openly about high-risk behaviours. The women

reported mainly on the physical examinations done by the sister. Only two women mentioned receiving information regarding smoking, alcohol use and nutrition. This practice is not in accordance of the South African guidelines on antenatal care which clearly include screening for pregnancy problems and provision of information to all pregnant women (South Africa 2002: 18).

The women were also cautious about mentioning their risky behaviours as some nurses display anger towards them. This finding is consistent with the results of a previous study of health promotion activities for women at risk for alcohol intake during pregnancy in the Stellenbosch area, which found that women tend to deny or underreport levels of drinking in screening situations (Tversky 2001:58).

Practices of pregnant women on farms and how they are perceived by health workers

The results of the research confirmed that many women were drinking and smoking during pregnancy. Most of the women from the farms knew of pregnant women drinking and smoking, and some spoke freely about their own high-risk behaviours. According to the health workers there were high rates of illiteracy, alcohol use and smoking amongst women on the farms.

According to the women unplanned pregnancies were common. Health workers were concerned about the high rate of unplanned pregnancies, and in particular teenage pregnancies. None of the women reported episodes of domestic violence experienced during pregnancy. This is of concern because the health workers referred on numerous occasions to women being physically abused. A study by the Dopstop Association (2001:6) noted a link between drinking, accidents and violence. This could be indicative of violence being accepted as a norm, or a lack of understanding regarding their rights in accordance with the Domestic Violence Act (South Africa 1998: 8).

The Health Belief Model postulates that individuals will take action to prevent, control, or treat a health problem if they perceive themselves susceptible to the problem, if they perceive the problem to be severe in nature and consequence, if

they perceive that the action will benefit them and produce a desirable outcome, and if they perceive few barriers to taking that action. (Glanz 1998: 1) Applying the Health Belief Model it is apparent that the health-related knowledge is adequate in order for the women to believe that they could be susceptible to having a low birth weight baby, but it is too superficial for them to realise how seriously the alcohol and smoking can affect the baby. To take action and prevent low birth weight is, however, limited as a result of an unsupportive and hostile environment, explained as the 'barriers to action' in the Health Belief Model. The women who do abuse substances have low levels of motivation to change since the cost/benefit balance favours continuing with the habits.

Ideas to reduce infants born with LBW

The ideas of the women and health workers were very similar and focussed on three areas namely development, education and services. The women also mentioned what they themselves could do to reduce their infants being born with low birth weight e.g. regular visiting of the clinics and adopting healthier lifestyles by specifically reducing alcohol use and smoking. The women and health workers realised that any attempt to reduce LBW infants would require involvement from the various relevant sectors to initiate social change in order to combat infant LBW on the farms.

Women were more conscious than health workers about the role the farm owner needed to fulfil to reduce infant LBW e.g. the payment of a living wage and skills development activities. Health workers on the other hand suggested more mobile services, food parcels and more appropriate staff. According to Hughes and Simpson (1995: 97), infant LBW would be most effectively addressed through a dedicated national commitment to assuring adequate support to individuals and families, including ample income and health care.

It is interesting to note that the suggestions for dealing with the causes of the infant LBW problem on the farms fit within the five action areas of the Ottawa Charter (WHO, 1986) i.e. health promoting policies; the creation of supportive environments; personal skills development; community action; and the reorientation of the health services.

The potential for change

The results of the focus group and semi-structured interviews with health workers suggest that in terms of changing harmful habits it is most difficult to stop smoking. They were, however, positive about the fact that alcohol use by women, as well as violent behaviour towards women, could be reduced. They felt that improvement in eating habits were unlikely as this depends on the socio-economic conditions of the women on the farms. It seems that the health workers are suggesting that the barriers to change are strongest for changing eating patterns, since the women have little control over what they can afford (Sheeran & Abraham 1995: 42).

The Health Action Model (Tones 1995: 18) incorporates psychological elements of the normative, belief and motivational systems, and explains that these influence the intention to practice healthy habits. This behavioural intention is, however, modified by the facilitating and inhibiting factors on an environmental and personal skills level. Improving the health and social service provision could assist women on an individual level to be more motivated and able to make changes in their lifestyles, but the norms in the community around drinking and smoking will be difficult to change. Promoting healthy public policy with regard to a living wage and affordable essential food prices for example, may allow the women to gain some control over their socio-economic conditions. Low wages for farm workers and the fact that some farms are still practicing the 'dop' system, only serve to reinforce the web of poverty, with endless adverse physical, emotional and social consequences for the women and their families. This is consistent with the findings of London (1999: 1409).

A barrier to improving health promotion services is the lack of appropriately trained health educators. The Vredendal area does not have the services of a dedicated health educator, leaving the already overloaded nurses to address health education haphazardly. The Stellenbosch antenatal clinics are enjoying the services of health educators, but the health educators are based at the clinics and do not visit the women on the farms. While it is recognised that the health educator alone cannot solve the root causes of the factors influencing infant LBW, she is a key person in the

health promotion process and can initiate action directed towards social, environmental and economic conditions by contributing to the creation of a supportive environment and developing personal skills. This is in line with some of the priority action areas for health promotion as outlined by the Ottawa Charter for Health Promotion (WHO 1986).

Limitations of the study

This study focused only on the women working and living on farms in the Vredendal and Stellenbosch farming areas. Limitations with regard to the methodology include the fact that only nursing staff participated in the focus group discussions as social workers, health educators, nutritionists and psychologists were not available due to other work commitments. Also, in retrospect it seems that we were not able to unpack the deeper reasons for women not being able to make changes in their substance use. More probing 'why' questions needed to be used.

Conclusion

This study highlights the lifestyle factors related to LBW infants on farms, and proposes that these should be addressed collectively by all the relevant sectors in the community. Although some of these processes have been initiated, there are gaps in the health services, such as a limited number of trained health educators, which should be addressed immediately to provide women with opportunities to ensure acceptable pregnancy outcomes.

Finally, it is important for health workers to address some of these challenges that are within their scope of influence in the short term. There is no doubt that infant LBW on farms should be urgently addressed by means of a multi-sectoral development programme, even though the results will only be evident in the medium to long term.

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