Health promotion resources for Aboriginal people: lessons learned from consultation and evaluation of diabetes foot care resources

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Introduction

The prevalence of diabetes is growing at an epidemic rate in Australia and worldwide. The 2004 Australian National Health Survey estimated 3.6% of Australians had diagnosed diabetes.[1] Diabetes is associated with a range of complications including coronary artery disease, peripheral vascular disease, stroke, renal disease, blindness, diabetic neuropathy and lower limb amputation.[2]

Diabetic foot problems are among the most severe and frequent complications of diabetes, and are one of the leading causes of hospitalisation related to diabetes.[3-8] Diabetic foot problems are a particularly important issue for Aboriginal and Torres Strait Islander people (hereafter Aboriginal people) among whom diabetes is more than three times as common as in non-Aboriginal people.[1] The burden of diabetes lower limb amputation is significantly greater in Aboriginal people in Western Australia. The age specific rate ratio for amputations for Aboriginal/non-Aboriginal in 25-49 year olds is particularly startling, 37 for amputations at or above the knee and 27.5 for toe/foot amputations.[9]

Diabetes foot care education is essential for people with diabetes. It requires low expenditure and can reduce the incidence of diabetic foot complications of ulceration and amputation.[10-18] International experts suggest that 49-85% of all diabetic foot complications are preventable with education and increased awareness of diabetic foot care.[17,19] *World Diabetes Day 2005* highlighted this need for increased awareness of diabetic foot problems and foot care

Abstract

Issues addressed: Despite the startling age specific rate ratio for amputations in 25-49 year olds of, 41.25 for knee amputations and 27.5 for toe/foot amputations for Aboriginal/non-Aboriginal people, there are no diabetes foot care education brochures or health promotion media available free of charge for Aboriginal people.[1] This study consulted Aboriginal people about existing and potential resources for education on foot care.

Method: An Aboriginal and non-Aboriginal interviewer conducted six focus group discussions with a total of 60 Aboriginal people including Elders, community members, health workers, students and nurses. Focus groups discussed which materials, media and foot care messages worked best to communicate diabetes foot care messages.

Results: Participants were unequivocal in their preference for real pictures of foot problems rather than cartoons, clearly identifying a superior existing educational resource from the Indigenous Diabetic Foot Program. There was minimal support for many existing media and foot care messages. Participants preferred to develop their own messages and selected utilitarian media that would be used by all members of the Aboriginal community.

Conclusions: We recommend the delivery of the Indigenous Diabetic Foot Program in Western Australia. Consultation and involvement of Aboriginal people was consistent with Aboriginal peoples' preferred style of conversation and inclusion and allowed the target audience to determine the end product for use in education and health promotion.

Key words: Health promotion resources, diabetes foot care, education, Aboriginal, feet.

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So What

The process of seeking opinions engaged community members and led to unanticipated benefits with Marr Mooditj Aboriginal Health Training College in Western Australia now incorporating diabetes foot care education into student-training programs.

education with the campaign slogan, *Put Feet First: Prevent Amputations*.[17] Countries such as Nauru, India, Brazil and US have implemented national diabetic foot care education and preventive programs that had measurably beneficial effects in reducing diabetic foot amputation.[3,11,20,21] Despite Australian assistance in the successful program with the people of Nauru, it has not been fully reproduced in Australia.

At present there is not a specific national diabetic foot care initiative in Australia. However, Australian national and state guidelines and policies do recognise the need for culturally appropriate diabetes foot care education for Aboriginal people but few resources are available.[22-24] Healthy Living NT has developed an eight-page flipchart entitled; *Keep your feet healthy*.[25] Services for Australian Rural and Remote Allied Health (SARRAH) has developed the *Indigenous Diabetic Foot Program* (IDFP) educational card set, video and health promotion media and slogans.[26] During 2007/08 an educational resource specifically for the Aboriginal Diabetic Foot in the New South Wales context developed the NSW Aboriginal Diabetic Foot Program.[26] In Western Australia, the Aboriginal Community Controlled Health Service [Derbarl Yerrigan Health Service (DYHS)] had produced a double-sided A4 foot care brochure for their community, however, it was out of print with no plans for reprinting.[27]

In spite of the high burden of diabetes, associated foot problems and lower limb amputations in Aboriginal people, in Western Australia there are no diabetes foot care education brochures or health promotion media available free of charge for Aboriginal people. The lack of access and availability of Aboriginal resources became apparent to the researchers while delivering community based diabetes education sessions, titled *The Journey of Living with Diabetes*, motivating the initiation of this study.[28] The aim of this study was to listen and learn from Aboriginal people in determining what materials, medium and foot care messages worked best to communicate diabetes foot care messages for their community in Western Australia.

Methods

Prior to implementing this project, consultation was undertaken with the management of DYHS. An Aboriginal Reference Group was established to provide guidance, cultural advice and input into the information and processes of the research. The research was approved by the Western Australia Aboriginal Health Information and Ethics Committee and by the Human Research Ethics Committee of Curtin University.

Two researchers (one Aboriginal and one non-Aboriginal) conducted six focus group discussions (FGD) during March and May 2008. A total of 60 Aboriginal people including Aboriginal Elders, community members, Aboriginal Health Workers, Aboriginal Health Worker students and Aboriginal Enrolled Nurse students participated. Sites for FGD included an Aboriginal Elders club in a northern suburb of Perth, two rural towns, Moora (177km north of Perth) and Tambellup (328km southeast of Perth) and three FGD at Marr-Mooditj Aboriginal Health Training College in Perth. FGD lasted between 45-60 minutes, and were preceded by verbal and written information about the study, obtaining written informed consent, and collecting demographic information from the participants. A fridge magnet and bumper sticker produced by IDFP were given to each participant. At the end of each FGD, a healthy lunch was made available for participants to share.

Aboriginal health research guidelines require *reciprocity* as a component of the research process.[29,30] *Reciprocity* involves an exchange between the researchers and the participants. This requires,

'the researcher to demonstrate a return (or benefit) to the community that is valued by the community and which contributes to the cohesion and survival of Aboriginal people'[30]

Reciprocal interventions including diabetes foot care education, general foot care, podiatry treatment, podiatry assessment, tuition on how to complete a diabetes foot screening or other services deemed suitable by each group, were offered to FGD participants.

Focus group discussions were a chance to 'yarn' with our participants. Yarning from an Aboriginal perspective is a way of communicating in an informal way. The environment, venue, timing and participants all play a major role in the yarning process. The environment and venue must be safe and participants need to feel comfortable and at ease in the place. Sharing of information will depend on who are the other participants within the group.[31]

The focus group discussions were audio-recorded and one facilitator made written notes. All FGD followed a schedule of open-ended questions, consisting of four components. The first component asked participants to compare three existing Aboriginal paper-based diabetes foot education tools, produced by the *Indigenous Diabetic Foot Program* (IDFP),[26] Healthy Living NT[25] and DYHS.[27] Further information about these resources is shown in Table 1. Secondly, participants commented on four different media (key ring, bumper sticker, fridge magnet and poster) for suitability as a health promotion tool for Aboriginal people, and suggestions were sought for more appropriate resources. Participants were then asked their views on the wording of three important foot care messages. Finally they were asked to compare three international diabetes foot care messages, *Put feet first:*

prevent amputation [World Health Organization (WHO)], *Love your feet* (Nauru) and *I'm looking after my feet every day* (IDFP) for their engagement and saliency. The participants' preferences for existing media were tallied in frequency tables. Comments on existing media were grouped as positive or negative comments.

Results

Participants

The sixty participants in this project were all Aboriginal and identified themselves as coming from 23 geographical areas (one urban, nine regional, seven rural and six remote areas) of Western Australia. Eighteen different language groups were identified. The majority of participants were female (79%). Ages ranged from 18-87 years and the median age was 44 years. Diabetes had been diagnosed in 26% of the participants, 66% had previously had some form of diabetes education and 13% had previously seen a podiatrist.

Paper based resources

There was unanimous support for the IDFP paper-based diabetes foot care education booklet and posters.[26] These resources utilise photographs of Aboriginal feet and foot conditions, and were preferred to cartoons, making the foot problems of diabetes appear more real. Participants suggested that the pictures help with education, allow more people to understand, get straight to the point and show what can really happen to a diabetic person's feet. Some of the quotes from participants in support of the IDFP resources are shown in Box 1.

Media

The participants' order of preferred media, with great consistency between groups, was the poster, key ring, magnet and sticker. At all FGD, large enamel pannikins (mugs) were proposed as the best media for the delivery of a foot care message. Other media suggested were headwear (such as beanies for older people, caps for younger people and bandanas for the teenagers), calico bags, thongs, wristbands and waving feet like the hands that go on car windows. A poem was written at one FGD and the use of a song was suggested at two FGD, with one group even creating the words and rhythm for a song.

Foot care messages

Views surrounding the wording of the foot care messages generated discussion around language and reading. It was suggested that foot care messages should be short and simple. It was noted by all groups that not everyone could read, so if possible words should be replaced with pictures. For example the message, *Look after your feet*, should use a picture of

Table 1: Summary information on existing diabetes foot care education materials discussed at focus groups.

Producer	Format	Style	Colours	Artwork	Cost	Availability
IDFP	9-page educational card set	Photographs identifying foot problems by number	Neutral	Photographs, real Aboriginal feet	$30.00	http://www.diabeticfootprograms.com.au
HealthyLiving NT	8-page Flipchart	Cartoons	Bright	Original Aboriginal designs	$35.00	www.healthylivingnt.org.au
DYHS	Double-sided A4 page	Text & one photograph	Neutral	Original Aboriginal logo	$0.00	Out of print
IDFP	Poster	Photographs identifying foot problems by number in common & medical terms	Brown, black & white, blue & white	Photographs, real Aboriginal feet	$30.00/ 10 pack	http://www.diabeticfootprograms.com.au
Unknown	Key ring	Shaped as a foot	Silver	I ♥ NY	$5.00	
IDFP	Sticker	8-word message & artwork	Brown, black & white	Half a black footprint on white background	$25.00/ 10 pack	http://www.diabeticfootprograms.com.au
IDFP	Magnet	8-word message & artwork	Brown, black & white	Half a black footprint on white background	$22.00/ 10 pack	http://www.diabeticfootprograms.com.au

Box 1: Participants' quotes indicative of their support for the IDFP materials.

'Get straight to the point, no use mucking around with cartoons, a cartoon will always be a cartoon, need to show them what can happen'
'Pictures help people with education, helps to see what can happen or what is happening to someone else right now'
'More visual- so more understand'
'People will want to look after their feet after seeing that, it's showing the real thing'
'Our people survived by looking, like with looking for food, work out how to catch, that's what they should see, how to look after feet and what happens'

Box 2: Participants' suggestions for a foot care message

Look After Your Feet (In pictures and words)
HAPPY FEET!
Step up and see the podiatrist!
Walk Alive
I check my djina/ I check my nimbal
Fast as a falcon into the foot doc
Feet keep the heart beating
Feet get u places
My djina are the soul print of my life

Notes: "djina" means feet in Noongar; "nimbal" means feet in Madu
Foot falcon- Aboriginal people often call themselves or their friends this if they do not have a car and their feet are their mode of transport.

eyes to replace the word *look* and a picture of feet to replace the word *feet*. Figure 1 shows an example developed by the participants. There was also strong support for opportunities to use and maintain the local native language, so participants recommended that foot care messages should utilise the local word for feet or use the local language centre to translate the message.

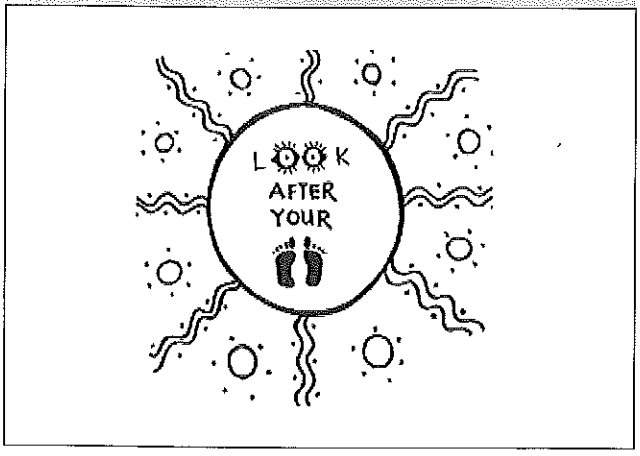
There was minimal support for the three existing international foot care messages that were compared at the FGD. The language of the messages was not considered suitable, for example they preferred, *Respect your feet,* rather than *Love your feet*. Participants also preferred, either the first or second part of the WHO message, *Put feet first* or *Prevent amputation*. Each group preferred to create their own foot care message. They created short, simple messages with practical, humorous and visual themes. Box 2 presents some foot care messages created by the participants at FGD.

Discussion

This study identified overwhelming support for the IDFP paper-based diabetes foot care education booklet and posters confirming that these are using culturally appropriate diabetes foot care education tools for use with Aboriginal people in Western Australia. It also validates the use of the IDFP materials in *The Journey of Living with Diabetes,* in Western Australia.[28] The format, pictures, language and literacy of the IDFP resources are appropriate, stimulate discussion and make it easy to engage people in discussion about foot care. Participants wanted to keep these resources and suggested places and ways these resources could be used.

In contrast, the resources given to each participant by the researchers, (bumper sticker and a fridge magnet), were not considered appropriate media, and were often left behind after the FGD. Not everyone has use for these media as some people don't own a motor vehicle or have a fridge. They lacked relevance for all Aboriginal people, and the Aboriginal artwork and language was unfamiliar. The media selected as most appropriate were practical, utilitarian items for everyday use. Appropriate media should reflected Aboriginal peoples' spirit and desire to be inclusive and to benefit the whole community. The choice of language, media and artwork to be used in health promotion resources was deemed essential to engage people about foot care, as has been reported in other studies.[32-34] Traditional art, language and stories provide a basis for cultural identity and a viable method for imparting modern health knowledge to Aboriginal people.[32] They have been an important part of health promotion initiatives in the prevention and management of diabetes, heart disease, renal failure, mental health, HIV and substance abuse.[32]

Figure 1: Foot care message developed by participant.



Resources are tools used in health promotion to engage target groups around health education. Both government and non-government organisations expend considerable resources in producing and reproducing health promotion media, often without careful evaluation of their effectiveness. In our study the IDFP poster at a cost of $3.00 would have been a better choice to give each of the participants than the $4.70 spent on the bumper sticker and fridge magnet. This further illustrates the importance of consulting with Aboriginal people about what they deem appropriate education media.

The participants' preference to create their own foot care message rather than use the three international messages was centred on appropriate language. The language of a single foot care message illustrated the significance of consultation with Aboriginal people and local cultural knowledge. For example, *djina*, a common word for foot in several Aboriginal languages, is not for use in the area of Port Hedland, where it refers to the name a person who has passed away.

The community setting and supportive environment created by the combination of consultation, reciprocity and the FGD, was inclusive and engaged Aboriginal people around foot care education in an interactive forum consistent with their preferred style of 'yarning'. This approach provided a rich learning ground for health education that was not anticipated.[29,30] The process provided a forum for comparing resources, developing foot care messages and foot care education with low expenditure. There were immediate requests from participants asking if a FGD could be offered in their town suggesting the process was culturally appropriate, enjoyable and worthwhile repeating.

Outcomes and Conclusion

Increased awareness by health professionals and educators of the IDFP paper based resources is recommended. These were unanimously favoured, and are currently available and desired by the participants. The two researchers from this project aim to ensure the delivery of the IDFP course in WA annually. The initial cost of the course ensures ongoing free access to

these preferred paper-based resources. As partners, the two researchers from this project, are exploring the possibility of repeating the project in more areas of Western Australia in association with Diabetes Australia Western Australia. Also, as a result of the project, Marr Mooditj Aboriginal Health Training College now incorporates diabetes foot care education into some student-training programs.

Greater use of the IDFP tools and the information gained from this project could be used in conjunction with other health promotion interventions to improve foot health outcomes in the Australian Aboriginal population, where diabetes is prevalent. Education and information stands incorporating resources aimed at foot care should be present at local health promotion events including 'Aboriginal seniors days' and nationally represented in Foot Health Week promotions. IDFP resources should also be readily available in regional, rural and remote healthcare services throughout Australia to support the advice provided by health professionals. Efforts are also required to enhance communication with Aboriginal Health Services across Western Australia to ensure they are aware of these resources.

Health programs, not just foot care education programs, are more likely to build stronger communities when community people become involved in making decisions about the suitability of resources. This encourages community ownership of health promotion interventions[35,36] and was the main strength of this project. Consultation and involvement of Aboriginal people in our project allowed the community to determine the end product. We recommend continuation of such processes, which are a respectful, interactive, culturally appropriate and effective means of engagement. We recognise behavioural change is difficult to facilitate, and merely having a new, culturally appropriate health promotion resource for foot care education is not in itself an answer. However, the approach described, involving consultation, reciprocity and focus group discussions allowed the target community to determine the end product for use in education and health promotion for Aboriginal people. They chose a simple message on media they will be exposed to daily.

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References

1. Australian Bureau of Statistics. *National Aboriginal and Torres Strait Islander Health Survey, Australia 2004-05*. Canberra (AUST): ABS; 2006.
2. Australian Institute of Health and Welfare. *Diabetes: Australian Facts 2008*. Canberra (AUST): Commonwealth of Australia; 2008.
3. International Diabetes Federation [homepage on the Internet]. Brussels (BEL): IDF; 2000 [cited 25 November 2007]. *International Consensus on the Diabetic Foot (1999)*. Available from: http://shop.idf.org/catalog/product_info.php?cPath=21&products_id=33
4. Unachukwu C, Babatunde S, Ihekwaba AE. Diabetes, hand and/or foot ulcers: a cross-sectional hospital-based study in Port Harcourt, Nigeria. *Diabetes Res Clin Pract*. 2007;75(2):148-52.
5. Australian Aboriginal HealthInfoNet [homepage on the Internet]. Perth (AUST): Kurongkurl Katitjin Centre for Indigenous Australian Education and Research, Edith Cowan University; 2007 [cited 11 August 2007]. *Review of Diabetes among Indigenous Peoples*. Available from: http://www.healthinfonet.ecu.edu.au/chronic-conditions/diabetes/reviews/our-review
6. Frykberg RG, Zgonis T, Armstrong DG, Driver VR, Giurini JM, Kravitz SR, et al. Diabetic foot disorders. A clinical practice guideline (2006 revision). *J Foot Ankle Surg*. 2006;45 Suppl 5 :1-66.
7. Lawrence A. Foot care education in renal patients with diabetes. *EDTNA/ERCA J*. 2004;30(3):153-6.
8. Viswanathan V. The diabetic foot: perspectives from Chennai, South India. *Int J Low Extrem Wounds*. 2007;6(1):34-6.
9. Department of Health WA. *Analysis of the WA Hospital Morbidity Data System*. Perth (AUST): State Government Western Australia; 2008.
10. Valk GD, Kriegsman DM, Assendelft WJ. Patient education for preventing diabetic foot ulceration. A systematic review. *Endocrinol Metab Clin North Am*. 2002;31(3):633-58.
11. Viswanathan V, Madhavan S, Rajasekar S, Chamukuttan S, Ambady R. Amputation prevention initiative in South India: positive impact of foot care education. *Diabetes Care*. 2005;28(5):1019-21.
12. Viswanathan V, Madhavan S, Rajasekar S, Chamukuttan S, Ambady R. Urban-rural differences in the prevalence of foot complications in South-Indian diabetic patients. *Diabetes Care*. 2006;29(3):701-3.
13. Boulton AJ, Vileikyte L, Ragnarson-Tennvall G, Apelqvist J. The global burden of diabetic foot disease. *Lancet*. 2005;366(9498):1719-24.
14. Trepman E, Bracilovic A, Lamborn KK, Shields NN, Pinzur MS, Lutter LD. Diabetic foot care: multilingual translation of a patient education leaflet. *Foot Ankle Int*. 2005;26(1):64-107.
15. Wu SC, Driver VR, Wrobel JS, Armstrong DG. Foot ulcers in the diabetic patient, prevention and treatment. *Vasc Health Risk Manag*. 2007;3(1):65-76.
16. Ragnarson Tennvall G, Apelqvist J. Health-economic consequences of diabetic foot lesions. *Clin Infect Dis*. 2004;39 Suppl 2:132-9.
17. World Health Organisation [homepage on the Internet]. Geneva (CHE): WHO; 2005 [cited 11 August 2007]. *World Diabetes Day 2005*. Available from: http://www.who.int/mediacentre/events/2005/world_diabetes_day/en/

18. World Health Organisation [WHO statistical information system on the Internet]. Geneva; 2007 [cited 8 August 2007]. *World Health Statistics 2007*. Available from: http://www.who.int/whosis/whostat2007_10highlights.pdf
19. International Diabetes Federation [campaign on the Internet]. Brussels (BEL): IDF; 2005 [cited 3 August 2007]. *Diabetes and Foot Care*. Available from: http://www.worlddiabetesday.org/the-campaign/previous-campaigns/2005.
20. Pedrosa H. *Save the Diabetic Foot Project: Introducing Brazil in the Foot Care Scene* [project on the Internet]. São Paulo (BRA): Sociedade Brasileira De Diabetes; 2006. Available from: http://www.diabetes.org.br/educacao-continuada/490-save-the-diabetic-foot-project-introducing-brazil-in-the-foot-care-scene-
21. Bunch AS. Tackling a new opponent. NFL star tells those with diabetes to "check your feet.". *Healthplan*. 2003;44(3):51-3.
22. WA Department of Health. *Western Australian Diabetes Strategy 1999*. Perth (AUST): State Government of Western Australia; 1999.
23. WA Department of Health. *Healthy Lifestyles. A Strategic Framework for the Primary Prevention of Diabetes and Cardiovascular Disease in Western Australia 2002-2007*. Perth (AUST): State Government of Western Australia; 2002.
24. National Health and Research Medical Council. *National Evidence Based Guidelines for the Management of Type 2 Diabetes Mellitus*. Canberra (AUST): NHMRC; 2005.
25. Healthy Living NT [homepage on the Internet]. Darwin (AUST): Diabetes Association of the Northern Territory; 2002 [cited 18 July 2007]. *Keep Your Feet Healthy - A4 Laminated Flip Chart*. Available from: http://www.healthylivingnt.org.au
26. Indigenous Diabetic Foot Program [homepage on the Internet]. Townsville (AUST): IDFP; 2003 [cited 24 September 2007]. *Indigenous Diabetic Foot Program Townsville*. Available from: http://www.diabeticfootprograms.com.au/site/index.cfm?display=116044
27. Derbarl Yerrigan Health Service [homepage on the Internet]. Perth (AUST): The Service; 2004 [cited 24 September 2007]. *Diabetes and Feet*. Available from: http://www.derbarlyerrigan.com.au/derbarl1.htm
28. WA Department of Health. *The Journey of Living with Diabetes- A Health Education Program for Aboriginal and Torres Strait Islander Peoples*. Fremantle (AUST): South Metropolitan Public Health Unit; 2007.
29. WA Department of Health. *Ethical Considerations for Health-Related Research involving Aboriginal People*. Perth (AUST): State Government of Western Australia; 1996.
30. National Health and Medical Research Council. *Values and Ethics: Guidelines for Ethical conduct in Aboriginal and Torres Strait Islander Health Research*. Canberra (AUST): NHMRC; 2003.
31. Begley L, Harald P. 'Yarning for better health'. Improving the health of an Aboriginal and Torres Strait Islander population. *Aust Fam Physician*. 2005;34(1-2):27-9.
32 Davis B, McGrath N, Knight S, Davis S, Norval M, Freelander G, et al. Aminina Nud Mulumuluna ("You Gotta Look After Yourself": Evaluation of the use of traditional art in health promotion for Aboriginal People in the Kimberley region of Western Australia. *Australian Psychologist*. 2004;39(2):107-13.
33. Watson J, Obersteller EA, Rennie L, Whitbread C. Diabetic foot care: developing culturally appropriate educational tools for Aboriginals in the Northern Territory, Australia. *Aust J Rural Health*. 2001;9(3):121-6.
34. Mikhailovich K, Morrison P, Arabena K. Evaluating Australian Aboriginal community health promotion initiatives: a selective review. *Rural Remote Health*. 2007;7(2):746.
35. Rowley KG, Daniel M, Skinner K, Skinner M, White GA, O'Dea K. Effectiveness of a community-directed 'healthy lifestyle' program in a remote Australian aboriginal community. *Aust N Z J Public Health*. 2000;24(2):136-44.
36. Trudgen R. *Why Warriors Lay Down and Die*. Adelaide (AUST): Openbook Publishers; 2000.

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