THE NEW ZEALAND MEDICAL JOURNAL
Vol 118 No 1216 ISSN 1175 8716

Factors affecting antenatal care attendance by mothers of Pacific infants living in New Zealand

Pamela Low, Janis Paterson, Trecia Wouldes, Sarnia Carter, Maynard Williams, Teuila Percival

Abstract

Aims To describe antenatal care attendance by mothers of Pacific infants recently delivered at Middlemore Hospital, South Auckland and to examine the demographic and psychosocial factors associated with late initiation of care and inadequate attendance.

Methods The data were gathered as part of the Pacific Islands Families: First Two Years of Life (PIF) Study in which 1365 birth mothers in the cohort (n=1376) were interviewed when their infants were six weeks old about their antenatal care attendance.

Results Almost all (99.1%) mothers attended antenatal care at least once. Over a quarter (26.6%) initiated their antenatal care late, and 10.7% attended fewer than the recommended number of times. Maternal factors significantly associated with late initiation of antenatal care were high parity, first pregnancy, not being employed prior to pregnancy and Cook Island Maori ethnicity. Factors associated with inadequate attendance were reaction to the pregnancy and being employed prior to pregnancy.

Conclusions A significant proportion of mothers of Pacific infants reported initiating antenatal care later than the first trimester and attending fewer antenatal visits than recommended. These findings indicate that the importance of antenatal care needs to be promoted among Pacific communities.

Antenatal care in New Zealand is provided within the course of maternity care. To receive maternity services in New Zealand, a woman needs to choose and register herself with a Lead Maternity Carer (LMC). This LMC can be a general practitioner (GP), a midwife, a private obstetrician, or a hospital specialist team working in a public or private setting. The LMC is responsible for providing and coordinating the woman's maternity care[1].

It is recommended that a woman register with an LMC by her fourteenth week of pregnancy to develop a care plan for pregnancy, birth, and after-delivery care. The antenatal care plan can include frequency of visits, what laboratory tests or scans are needed, and booking into an antenatal education course. The frequency and type of antenatal care a woman receives can be variable and is the result of the personalised agreement formulated between the woman and her LMC.[1]

Maternity care (and therefore the majority of antenatal care) is provided free to women who are New Zealand citizens, permanent residents, and to women who have a permit to stay in the country for two or more years. The Government pays the LMCs on a capped-fee basis for providing the modules of service required by the women.

Women may have to pay a fee for some services like a private obstetrician and non-routine laboratory tests.[1]

The provision of formal medical health care for pregnant women (in the form of visits to a general practitioner, obstetrician, or midwife) is widely accepted as an important means of decreasing the risk of maternal and perinatal mortality.[2,3] While there are no official New Zealand guidelines for the recommended number of antenatal visits that women attend [4] , primiparas are encouraged to attend a minimum of nine visits and multiparas a minimum of six visits.[5]

It is generally recommended that women initiate their antenatal care in the first trimester of pregnancy to maximise the benefits of screening for complications and monitoring foetal and maternal health.[2] Research suggests that women who initiate their antenatal care later than the first trimester have poorer outcomes, such as low birth weight and pre-term birth.[2] However, the relationship between the number of antenatal visits a woman attends and outcomes has been an issue of contention.[6] It is acknowledged that increasing the number of antenatal visits does not necessarily improve the outcomes of the pregnancy.[7]

Previous research conducted on the characteristics of women who initiate their antenatal care late or attend an inadequate number of visits has found that many of the same demographic, situational, and psychosocial factors are involved.[8–12] Demographically, women who attend antenatal care late tend to be younger (in particular, adolescents), of high parity or gravidity, without a partner, of low socioeconomic status, and low educational achievement.[8–10]

In addition, situational factors that influence the initiation or attendance of antenatal care include lack of transport, employment status, difficulties arranging childcare, and inconvenient clinic hours.[8,13] Psychosocial factors include whether the pregnancy was planned, the woman's reaction to the pregnancy, a delayed diagnosis of pregnancy, contemplation of abortion, and the availability of social support.[8,14]

The health of Pacific infants has been an issue of concern in recent years. For example, Pacific infants have the highest rate of late foetal deaths (stillbirths) in New Zealand, with 9.6 deaths per 1000 births compared to 5.9 deaths per 1000 births in the total New Zealand population in 1998.[15,16] The Pacific infant death rate has been higher than the national infant death rate from 1997, with an infant death rate of 7.9 deaths per 1000 births.[17] Pacific infants also have very high rates of hospitalisation, particularly for respiratory illnesses.[15]

Furthermore, Pacific women have the highest fertility and birth rates of women in New Zealand[18] and represent a large proportion of potential users of antenatal care. However, there is little known about the usage of antenatal care by Pacific women in New Zealand. Research findings from previous small studies suggest that approximately 40–70% of Pacific women tend to initiate antenatal care late and attend fewer visits than other women.[4,12,19]

The purpose of this paper is to describe antenatal care attendance by mothers of Pacific infants and to examine the maternal and sociodemographic factors associated with late attendance (after the first trimester, or 15 or more weeks into the pregnancy) and inadequate attendance (receiving fewer than 6 visits, the recommended minimum number of visits).

Methods

Data were collected as part of the Pacific Islands Families: First Two Years of Life (PIF) Study. The PIF Study is a longitudinal investigation of a cohort of 1398 infants born at Middlemore Hospital, South Auckland during the year 2000. Middlemore Hospital was chosen as the site of recruitment of the cohort as it has the largest number of Pacific births in New Zealand and is representative of the major Pacific ethnicities. All potential child participants were selected from live births at Middlemore Hospital where the child had a least one parent who identified as being of a Pacific Islands ethnicity and also a New Zealand permanent resident. All procedures and interview protocols had ethical approval from the National Ethics Committee.

Approximately 6 weeks after the birth of the child, mothers were visited in their homes by Pacific interviewers fluent in both English and a Pacific language. Once eligibility criteria were confirmed and informed consent gained, mothers participated in one-hour interviews concerning the health and development of the child and family functioning. Each interview was carried out in the preferred language of the mother. Detailed information about the cohort and procedures is described elsewhere.[20]

The main interview included questions on antenatal care attendance. Mothers were asked whether they had seen a doctor or midwife as part of their pregnancy care, how many weeks pregnant they were when they first sought care, and how many times they saw a doctor or midwife. Maternal and sociodemographic factors that may be associated with antenatal care use were assessed by univariate and multivariate procedures.

Results

Ninety-six percent (n=1590) of potentially eligible mothers of Pacific infants (who had been born between 15 March and 17 December 2000) gave consent to be visited in their homes when the infant was 6 weeks old. Of the 1477 mothers contacted and who met the eligibility criteria, 1376 (93.2%) agreed to participate in the study.

A more conservative recruitment rate of 87.1% would include mothers who consented to contact and were (a) confirmed eligible, or (b) of indeterminable eligibility due to inability to trace.

Of the 1376 mothers in the cohort (1.7% gave birth to twins), 9 adoptive mothers and 2 foster mothers were eliminated from these analyses. Of the 1365 remaining birth mothers, 47.2% self-identified their major ethnic group as Samoan, 21% as Tongan, 16.9% as Cook Islands Maori, 4.3% as Niuean, 3.4% as Other Pacific, and 7.2% as Non-Pacific.

The Other Pacific group includes mothers identifying equally with Pacific and Non-Pacific groups, or with Pacific groups other than Samoan, Tongan, Cook Island Maori, or Niuean. The Non-Pacific group refers to mothers of infants fathered by Pacific men. The mean (SD) age of mothers was 27 (6.2) years; 80.5% were married or in defacto partnerships, 33.0% of mothers were New Zealand-born, and 27.4% had post-school qualifications. For the majority of mothers, the study child was not their first pregnancy (gravida > 1) (78.1%) and most had given birth previously (parity > 1) (72.8%).

The majority of the mothers (99.1%) made at least one visit to a doctor and/or midwife during their pregnancy. Of these mothers, 26.6% initiated their antenatal care late (their first antenatal visit was 15 weeks or later into their pregnancy). Most mothers (89.3%) attended at least the minimum recommended number of visits– 30.7% attended between 6 and 10 visits, 50.5% attended between 11 and 20 visits, and 8% attended more than 20 visits. However 10.7% of mothers attended fewer than 6 visits.

Maternal variables were examined for potential association with late initiation of antenatal care. Variables that did not reach significance were maternal age, social marital status, car ownership, annual income, and being employed prior to pregnancy. Table 1 lists the variables that were significantly associated with late initiation of antenatal care.

For the categories within each variable, the numbers and percentages of mothers who initiated antenatal care late are given, along with the associated odds ratios. Lack of formal school qualifications, not being employed prior to pregnancy, Pacific birth place, limited English fluency, and weak alignment with New Zealand way of life and customs were significantly associated ($p<0.001$) with late initiation of antenatal care. In addition, high parity or gravidity, unplanned pregnancy, an unhappy reaction to the pregnancy ($p<0.01$), Cook Island Maori and Tongan ethnicity, and lack of telephone in household ($p<0.05$) were also significantly associated with late initiation of antenatal care.

When controlling for the effects of all Table 1 variables in a multiple regression model, factors that remained significantly associated ($p<0.05$) with late initiation of antenatal care were high parity, first pregnancy (gravida), Cook Island Maori ethnicity and not being employed prior to pregnancy.

Several maternal variables were examined for potential association with inadequate attendance. Variables that did not reach significance were maternal age, education, annual income, car ownership, telephone in the household, birthplace, cultural orientation, and fluency in English.

Table 2 lists the variables that were significantly associated with inadequate use of antenatal care. For the categories within each variable, the numbers and percentages of mothers who attended fewer than six visits are given, along with the associated odds ratios. Cook Island Maori ethnicity, being non-partnered, not being employed prior to pregnancy, unplanned pregnancy, and a less than very happy reaction to the pregnancy were significantly associated ($p<0.05$) with inadequate use of antenatal care.

When controlling for the effects of all Table 2 variables in a multiple regression model, factors that remained significantly associated ($p<0.05$) with inadequate attendance were not being employed prior to pregnancy and a happy reaction to the pregnancy.

Table 1. Numbers (row percentages) and univariate odds ratios for late initiation of antenatal care by mothers by selected variables

Maternal variable	Category	Late initiation of antenatal care		Univariate odds ratio (95% CI)	
Ethnicity	Samoan	159	(24.7)	1.00	
	Cook Island Maori	75	(33.6)	1.54	(1.11–2.15)*
	Niuean	12	(20.3)	0.78	(0.40–1.50)
	Tongan	91	(32.2)	1.44	(1.06–1.96)*
	Other Pacific[§]	10	(21.3)	0.82	(0.40–1.69)
	Non Pacific	13	(13.4)	0.47	(0.26–0.87)*
Education	Post school qualification	80	(21.5)	1.00	
	Secondary school qualification	105	(23.1)	1.10	(0.79–1.53)
	No formal qualifications	175	(33.3)	1.82	(1.34–2.47)‡
English fluency	Yes	189	(22.7)	1.00	
	No	171	(33.0)	1.68	(1.32–2.15)‡
Born in New Zealand	Yes	90	(20.1)	1.00	
	No	270	(29.8)	1.69	(1.29–2.21)‡
Cultural alignment	Low New Zealand, Low Pacific Is	80	(32.9)	1.00	
	High New Zealand, High Pacific Is	49	(21.5)	0.51	(0.37–0.84)†
	Low New Zealand, High Pacific Is	144	(32.8)	0.99	(0.71–1.34)
	High New Zealand, Low Pacific Is	86	(20.0)	0.56	(0.36–0.73)‡
Employed prior to pregnancy	Yes	161	(21.7)	1.00	
	No	199	(32.6)	1.74	(1.36–2.22)‡
Telephone in household	Yes	268	(25.3)	1.00	
	No	92	(45.1)	1.34	(1.01–1.78)*
Parity	Primipara	68	(18.6)	1.00	
	Multipara	287	(29.8)	1.86	(1.38–2.50)†
Gravida	Primigravida	64	(21.6)	1.00	
	Multigravida	292	(28.2)	1.42	(1.04–1.93)*
Planned pregnancy	Yes	112	(22.3)	1.00	
	No	247	(30.6)	1.44	(1.11–1.86)†
Reaction to pregnancy	Very happy	105	(21.6)	1.00	
	Happy	126	(28.4)	1.43	(1.06–1.93)*
	Neither happy nor unhappy	82	(28.5)	1.44	(1.03–2.01)*
	Unhappy	32	(31.7)	1.68	(1.05–2.69)*
	Very unhappy	14	(42.4)	2.67	(1.29–5.50)†

*P<0.05; †P<0.01; ‡P<0.001; [§] Includes mothers identifying equally with two or more Pacific Island groups, equally with Pacific Island and non-Pacific Island groups, or with Pacific Island groups other than Tongan, Samoan, Cook Island Maori, or Niuean.

Table 2. Numbers (row percentages) and univariate odds ratios for inadequate attendance at antenatal care by mothers by selected variables

Maternal variable	Category	Inadequate attendance at antenatal care		Univariate odds ratio (95% CI)	
Ethnicity	Samoan	58	(9.0)	1.00	
	Cook Island Maori	35	(15.7)	1.88	(1.20–2.95)†
	Niuean	2	(3.4)	0.36	(0.09–1.49)
	Tongan	37	(13.1)	1.52	(0.98–2.35)
	Other Pacific[§]	6	(12.8)	1.48	(0.60–3.62)
	Non Pacific	8	(8.2)	0.91	(0.42–1.96)
Social marital status	Partnered	107	(9.8)	1.00	
	Non-partnered	39	(14.9)	1.61	(1.08–2.38)*
Employed prior to pregnancy	Yes	55	(7.4)	1.00	
	No	91	(14.9)	2.18	(1.53–3.11)‡
Planned pregnancy	Yes	37	(7.4)	1.00	
	No	109	(12.9)	1.86	(1.26–1.75)†
Reaction to pregnancy	Very happy	33	(6.8)	1.00	
	Happy	58	(13.1)	2.06	(1.31–3.22)†
	Neither happy nor unhappy	29	(10.1)	1.53	(.91–2.58)
	Unhappy	19	(18.8)	3.17	(1.72–5.85)‡
	Very unhappy	7	(21.2)	3.69	(1.49–9.13)†

*P<0.05; † P<0.01; ‡ P<0.001; [§] Includes mothers identifying equally with two or more Pacific Island groups, equally with Pacific Island and non-Pacific Island groups, or with Pacific Island groups other than Tongan, Samoan, Cook Island Maori, or Niuean.

Discussion

Overall, antenatal care attendance by mothers of Pacific infants living in South Auckland is relatively high, with most mothers in the cohort attending at least one antenatal care visit during their pregnancy. However, over a quarter of the mothers initiated their antenatal care late or after the first trimester (in the 15th week of pregnancy or later).

While not ideal, this finding is positive in comparison to previous research findings. For example, a study of a cohort of New Zealand children born in 1991[12] found that 42.9% of the 238 Pacific mothers involved in the study initiated their antenatal care late, and more recent investigations into late attendance have found that up to 70% of Pacific women in South Auckland are attending late.[19]

Previous studies have defined late attendance as attending in the 13th week or later.[12,19] However, it is not likely that the 2-week discrepancy in time frames used would account for such a large difference in late attendance. Further comparative studies are needed as it is difficult to determine whether the current findings represent an actual decrease in late attendance.

It is possible that funding constraints within the maternity care system may impact upon the initiation of antenatal care. LMCs are not funded to provide a module of care for pregnant women until the second trimester, and do not sign a care plan until this time (fourteenth week of pregnancy).[1] While this does not stop a woman from attending visits to her GP or receiving advice from her midwife, this current system may act as a disincentive to receiving early care for some women. Furthermore, some women may experience a delay in registering with an LMC or receiving treatment if their LMC of choice is fully booked.

The majority of mothers in the current study attended at least the minimum recommended number of antenatal visits. Almost 11% of the mothers attended fewer than 6 visits. This is comparable to research done by the National Health Committee (NHC) in 1999, which found that 12% of Pacific women attended fewer than 6 visits, compared to 6% of European women.[4]

The present study found that mothers of Pacific infants have similar demographic, situational and psychosocial factors influencing the initiation and uptake of antenatal care as found in previous research. However, different factors were involved in late initiation of antenatal care and inadequate attendance.

Maternal gravida and parity were associated with late initiation of antenatal care, but not attending fewer visits. High parity, indicating that the mother had experience giving birth before, was associated with late initiation of antenatal care. This is in line with previous research and suggests that these women feel that they do not need to attend as early because they already know what to expect during pregnancy and childbirth.[8,11,12] These women may also have difficulty arranging childcare for other children in their home in order to attend antenatal care.[8] Mothers who reported this to be their first pregnancy were more likely to initiate their care late, suggesting that lack of knowledge or experience with pregnancy and childbirth is also a contributing factor to late initiation of antenatal care. These mothers simply may not have recognised that they were pregnant until later in the pregnancy.[14]

Mothers whose pregnancies were unplanned and had a less than a very happy reaction to the pregnancy were more likely to initiate antenatal care late and attend inadequately. Previous studies have suggested that ambivalence over the pregnancy and its outcome can delay a woman's decision making about whether to attend antenatal care.[13,14] Considering that 60% of the cohort had an unplanned pregnancy, and 70.8% were not using contraception at the time of conception,[21] these findings suggest that family planning education targeted at Pacific women needs to be increased, in order to reduce delay in attending antenatal care.

Not being employed prior to pregnancy was associated with both late initiation of antenatal care and inadequate attendance. Despite the fact that New Zealand provides fully subsidised antenatal care,[3] many mothers of Pacific infants have a number of socioeconomic barriers to attending antenatal care.

It was of particular concern that compared to Samoan mothers, mothers of Cook Island Maori ethnicity were significantly more likely to initiate antenatal care late. There is a need for a focused strategy to educate and inform Cook Island Maori women about the benefits of early and adequate attendance of antenatal care.

Although only significant at the univariate level, Pacific-born mothers, mothers not fluent in English, and mothers with low cultural alignment to New Zealand way of life and customs were more likely to initiate care late. These findings suggest that women who described themselves as culturally isolated from mainstream New Zealand society are less likely to feel comfortable utilising antenatal services. These findings support what has been found by other authors,[15,19,22] who suggest that cost and ethnicity play a large role in the poor uptake of primary health care services by Pacific peoples.

Discomfort seeing a medical professional of a different ethnic background, lack of understanding of the New Zealand medical system, and reliance on traditional medicine are possible reasons put forward by these authors.[15,19,22] There is a need for more culturally appropriate medical services to be available to Pacific people, or at least information available to educate Pacific people about what to expect of the New Zealand medical system.

Traditional antenatal care in the Pacific Islands involves a communal approach, with extended family members and other members of the community playing a role in looking after the pregnant woman and keeping her healthy. In addition, traditional birth attendants or traditional healers may give assistance.[23,24] The extent to which traditional healers are used by Pacific peoples in New Zealand remains largely unknown.[19] While no association between use of traditional healers during the pregnancy (11.2% of the mothers) and antenatal care attendance was found in this cohort, provision of antenatal services for Pacific women needs to take into account traditional methods of caring for pregnant women.

In conclusion, while almost all mothers attended antenatal care at least once, a significant proportion of mothers reported initiating antenatal care later than the first trimester and attending fewer antenatal visits than recommended. It is acknowledged, however, that possible changes in antenatal care delivery or consumer behaviour may have occurred since 2000 when PIF data regarding antenatal care was collected. Findings from the present study of Pacific families in New Zealand can be used to target mothers for improved uptake of antenatal care.

The benefits of antenatal care attendance need to be promoted not just to Pacific women, but also to Pacific communities on the whole, through health professionals, community leaders, churches and Pacific agencies. In order to increase early and adequate antenatal care attendance, antenatal care needs to be presented as a vital way of safeguarding the health of Pacific infants, for all Pacific women, irrespective of prior experience with pregnancy.

A**uthor information:** Pamela Low, Health Psychologist, ProCare Psychological Services, Auckland; Janis Paterson, Associate Professor, Co-Director, Pacific Islands Families: First Two Years of Life Study, Auckland University of Technology, Auckland; Trecia Wouldes, Lecturer, Department of Health Psychology, Faculty of Medical and Health Sciences, University of Auckland, Auckland; Sarnia Carter, Research Fellow, Pacific Islands Families: First Two Years of Life Study, Auckland University of Technology, Auckland; Maynard Williams, Senior Research Fellow and Statistician, Auckland University of Technology, Auckland; Teuila Percival, Co-Director, Pacific Islands Families: First Two Years of Life Study, Auckland University of Technology, Auckland and Kidz First Children's Hospital and Community Services, South Auckland Health, Auckland

Acknowledgements: The Pacific Islands Families (PIF) Study is supported by grants awarded from the Foundation for Research, Science & Technology, the Health Research Council of New Zealand, and the Maurice & Phyllis Paykel Trust. The authors gratefully acknowledge the families who participated in the study, the Pacific Peoples Advisory Board, and the other members of the research team.

Correspondence: Dr Janis Paterson, Faculty of Health Studies, Auckland University of Technology, Private Bag 92006, Auckland. Fax: (09) 917 9877; email: janis.paterson@aut.ac.nz

References:

1. Health Funding Authority. Maternity services: a reference document. Hamilton: Health Funding Authority; 2000. Available online. URL: http://www.moh.govt.nz/moh.nsf/0/64f4a80cd43629704c2569d9001a01c9?OpenDocument Accessed May 2005.
2. Enkin M. Support for pregnant women. In: Enkin M, editor. Guide to effective care in pregnancy and childbirth. Oxford: Oxford University Press; 2000.
3. Ministry of Health. Maternity services information kit. Wellington: Ministry of Health; 2001. Available online. URL: http://www.govt.nz/record?recordid=4753 Accessed May 2005.
4. National Health Committee. Review of maternity services in New Zealand. Wellington: National Health Committee; 1999. Available online. URL: http://www.nhc.govt.nz/wrkprg/msreview.html Accessed May 2005.
5. Royal College of Obstetricians and Gynaecologists. Report of the RCOG Working Party on Antenatal and Intrapartum Care. London: Royal College of Obstetricians and Gynaecologists; 1982.
6. Fiscella K. Does prenatal care improve birth outcomes? A critical review. Obst Gynecol. 1995;85:468–79.
7. Gissler M, Hemminki E. Amount of antenatal care and infant outcome. Eur J Obst Gynecol Reprod Biol. 1994;56:9–14.
8. Goldenberg RL, Patterson ET, Freese MP. Maternal demographic, situational and psychosocial factors and their relationship to enrollment in prenatal care: A review of the literature. Women Health. 1992;19:133–51.

9. Abel M. Maternal characteristics and inadequate prenatal care. Psychol Rep. 1996;79:903–12.

10. Cooney JP. What determines the start of prenatal care? Med Care. 1985;23:986–97.

11. McDonald T, Coburn A. Predictors of prenatal care utilization. Soc Sci Med. 1988;27:167–72.

12. Essex C, Counsell A, Geddis DC. The demographic characteristics of early and late attenders for antenatal care. Aust N Z J Obstet Gynaecol. 1992;32:306–8.

13. Mikhail B, Curry MA. Perceived impediments to prenatal care among low-income women. West J Nurs Res. 1999;21:335–55.

14. Young C, McMahon J, Bowman V, et al. Psychosocial concerns of women who delay prenatal care. Families in Society: The Journal of Contemporary Human Services. 1990:408–14.

15. Bathgate M, Alexander D, Mitikulena A, et al. The health of Pacific Islands people in New Zealand. Wellington: Public Health Commission; 1994. Available online. URL: http://www.moh.govt.nz/moh.nsf/0/8e142f7cf1b327cb4c25667100291715?OpenDocument Accessed May 2005.

16. The New Zealand Health Information Service. Fetal and infant deaths 1998. Wellington: Ministry of Health; 2002.

17. Statistics New Zealand. Pacific progress. a report on the economic status of Pacific Peoples in New Zealand. Wellington: Statistics New Zealand; 2002.

18. Cook L, Didham R, Khawaja M. On the demography of Pacific People in New Zealand. Wellington: Statistics New Zealand; 1999.

19. Ekeroma A. Health and community partnership: maternity services for Pacific Islands Women. In: Pacific Vision International Conference; 1999; Auckland; 1999.

20. Paterson J, Tukuitonga CF, Abbot M, et al. Pacific Islands Families Study: Technical Report Number 1. Auckland: Auckland University of Technology; 2002. Available online. URL: http://www.aut.ac.nz/research_showcase/research_activity_areas/pacific_islands_families/pdf/pif_technical_report2002.pdf Accessed May 2005.

21. Paterson J, Cowley E, Percival T, et al. Contraceptive practices among Pacific women in New Zealand. N Z Med J. 2003; 117(1188). URL: http://www.nzma.org.nz/journal/117-1188/744/

22. Young N. Pacificans' access to primary health care in New Zealand: A review. Pacific Health Dialog. 1997;4:68–74.

23. Morse JM. Cultural variation in behavioral response to parturition: Childbirth in Fiji. Med Anthropol. 1989;12:35–54.

24. Kinloch PJ. Midwives and midwifery in Western Samoa. In: Parsons CD, editor. Healing Practices in the South Pacific. Honolulu: The Institute for Polynesian Studies; 1985.

