

# Knowledge and Risk Perception of Betel Nut with Tobacco Chewing during Pregnancy and Breastfeeding among Women in Palau

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## Background/Purpose

Betel nut with tobacco chewing is highly prevalent in the Republic of Palau, even amongst pregnant women. Clinical records showed 76% of Palauan women chew betel nut with tobacco while pregnant and the odds of delivering a full-term low birthweight infant were marginally higher for women who chewed betel nut with tobacco during pregnancy (adjusted Odds Ratio=2.4; 95%CI: 1.0-6.0, p = 0.049) compared to women who did not<sup>1</sup>. With such high prevalence of use, and potential risk of adverse birth outcomes, we conducted a survey to explore knowledge, risk perceptions, and reasons for use of betel nut with tobacco during pregnancy and breastfeeding.

## Introduction to Palau and Betel Nut Chewing

The Republic of Palau is located in the Pacific to the East of the Philippines, and is made up of over 340 islands with 188 miles<sup>2</sup> of land (Figure 1). Palau is a self-governing Republic that gained its independence in 1994, though it still maintains a Compact of Free Association with the U.S. The population of Palau is approximately 17,501, and 73.5% of the population is native Palauan<sup>2</sup>. The per capita income is \$5,097, and is classified as "middle-income"<sup>3</sup>.

Betel nut, or the areca nut grows naturally throughout many areas of the Pacific and Southeast Asia. Different cultures have various ways of preparing betel nut for chewing. In Palau, betel nut is typically prepared by first splitting the nut in half and removing the soft pit. Then, caustic lime derived from coral is added to the betel nut to activate the natural stimulant, arecoline. This combination wrapped with a pepper leaf was originally chewed in traditional practice. The betel nut alone is a stimulant and classified as a carcinogen. In the past few decades, locals began adding tobacco to their chew, primarily in the form of cigarettes (Figure 2).

## Methods and materials

We conducted a cross-sectional study among a convenience sample of women ages 18-45 years from July 11, 2014 - September 24, 2014 (N = 1,345) representing 40% of women in Palau. Women were recruited via radio and print announcements and in neighborhoods and workplaces. Interviews were in person, and both quantitative and qualitative data were collected on tobacco use during pregnancy and breastfeeding. Descriptive statistics were performed only on Palauan respondents [ever and not ever pregnant] (n= 909).

## Results

- Among reproductive-age Palauan respondents who have ever been pregnant (N = 617), 69.4% used tobacco during their most recent pregnancy. Among those who breastfed, 71.3% used tobacco (Figure 3).
- Among respondents who used tobacco while pregnant or breastfeeding, the majority of tobacco use was betel nut with tobacco chewing (98.4% and 99.0%, respectively)(Figure 3).
- Among all reproductive-age respondents, cigarette smoking was reported as more harmful than betel nut with tobacco chewing during pregnancy (97.1% and 73.5%, respectively) (Figure 4). Similarly for breastfeeding, 94.3% reported cigarette smoking as very harmful, while 68.7% thought betel nut with tobacco chewing was harmful (Figure 4).
- Among all reproductive-age respondents who used betel nut with tobacco chewing during pregnancy and breastfeeding, the most commonly reported reasons for use were: addiction/habit (38.9%); stimulant effects (22.0%); and culture/family pressure (11.3%).

## Discussion and interpretation

The majority of Palauan women in Palau chew betel nut with tobacco during pregnancy and breastfeeding; this supports previous work<sup>1</sup>. Smoking tobacco during pregnancy and breastfeeding was perceived to be more harmful than chewing tobacco during pregnancy and breastfeeding. This lack of perceived harm could be contributing to the high rates of betel nut with tobacco chewing during pregnancy and breastfeeding. Main reasons for use of betel nut with tobacco during pregnancy and breastfeeding were addiction, stimulant effects, and culture/family pressure. Due to the lower harm perception for chewing tobacco, there is a critical need to educate women on the harmful effects of betel nut with tobacco chewing during pregnancy/breastfeeding, as well as to provide culturally sensitive services for addiction, stress management, and addressing cultural reasons for use.

## Conclusions and Recommendations

- Chewing betel nut with tobacco during pregnancy and breastfeeding was highly prevalent among a convenience sample of ever pregnant Palauan women.
- The majority of all reproductive-aged respondents were aware that betel nut with tobacco chewing during pregnancy and breastfeeding is harmful, but considered it less harmful than smoking.
- Reasons for use included nicotine dependence, stimulant effects, and cultural factors.
- Intervention in Palau is necessary, and data collected from this work should be used to guide culturally appropriate public health programs.
- Interventions developed for Palau have the potential to be adapted and used more widely in the Pacific.

## Figures and tables

Figure 1. Map of Palau



Source: CIA Factbook at <https://www.cia.gov/library/publications/the-world-factbook/geos/ps.html>

Figure 2. Images of Betel Nut



Figure 3. Prevalence of Tobacco Use During Pregnancy and Breastfeeding Among Palauan Women

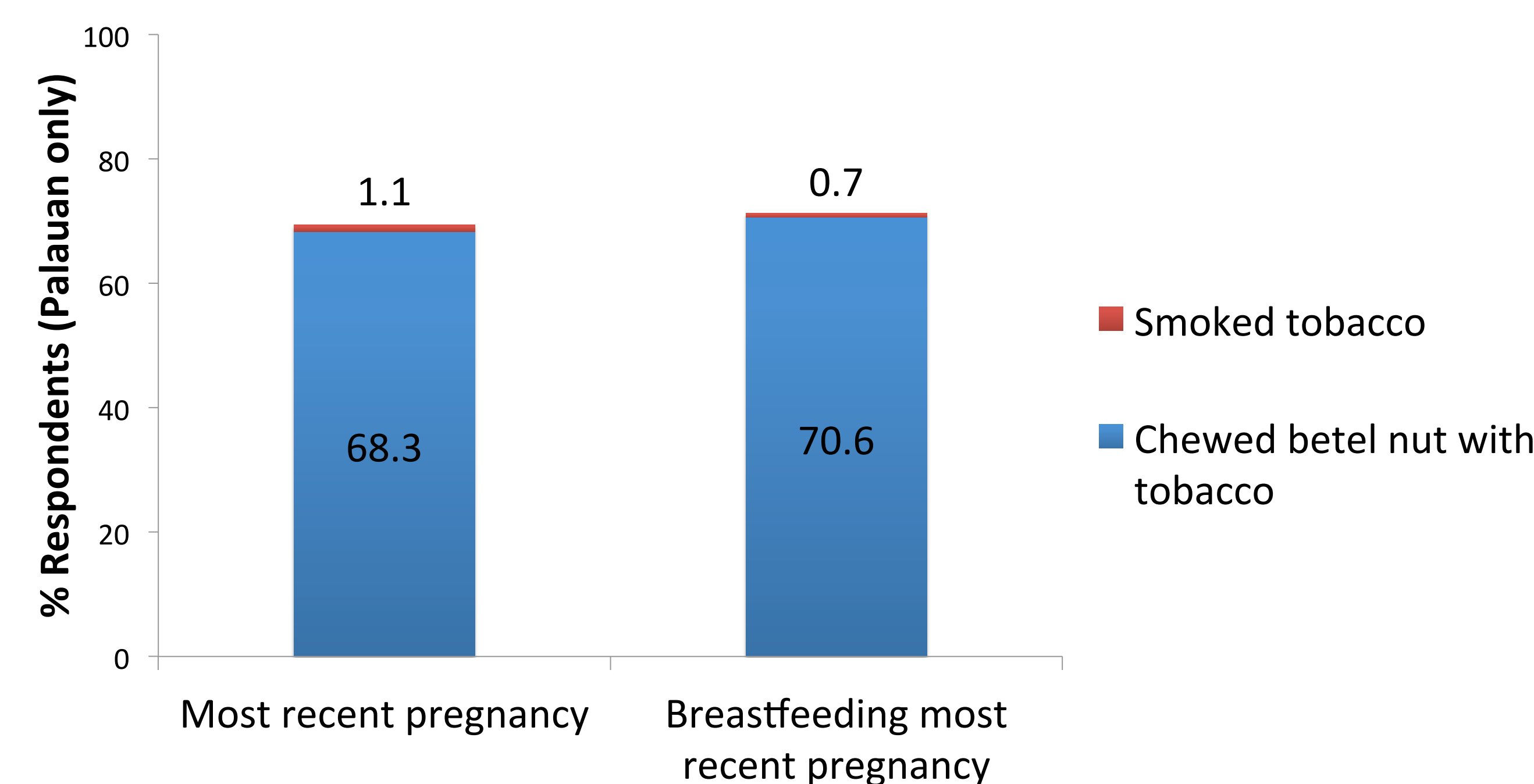
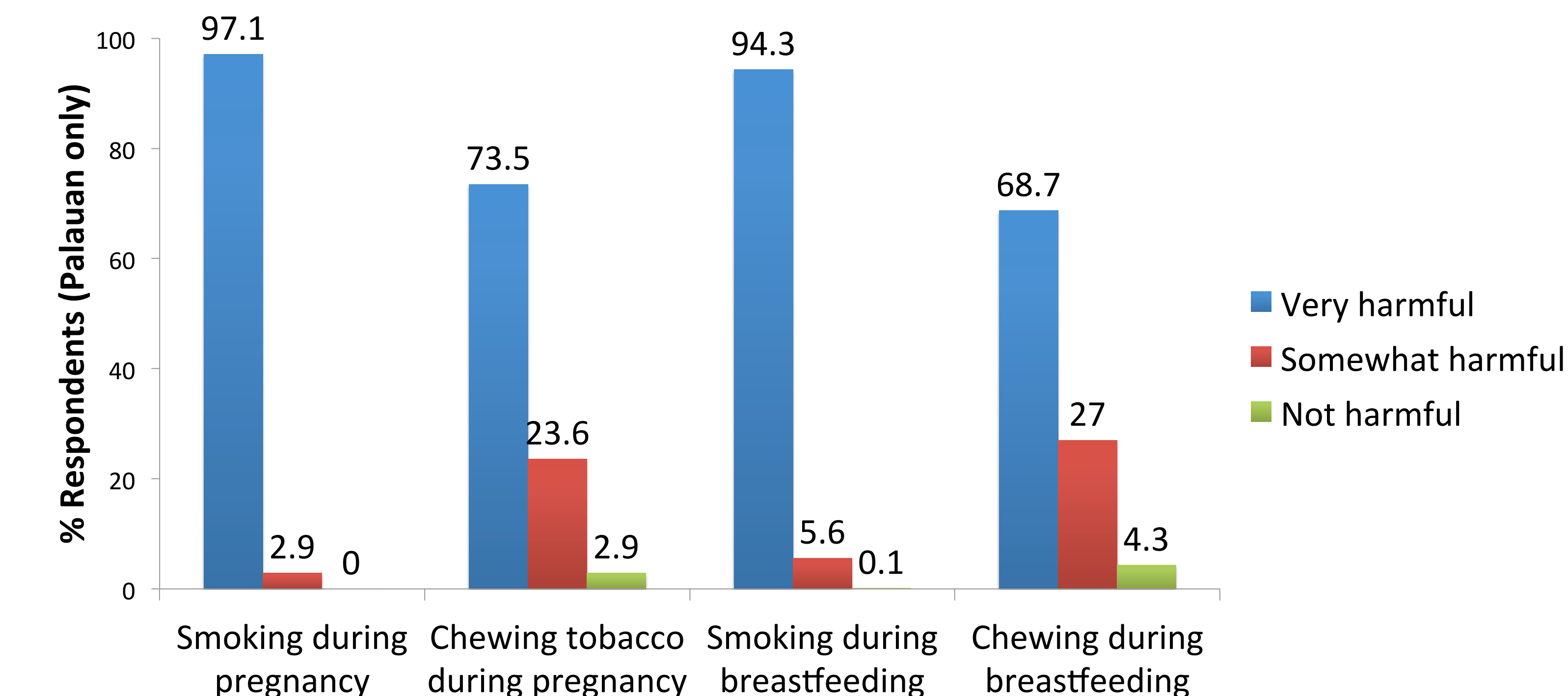


Figure 4. Perception of Harm of Tobacco Use During Pregnancy and Breastfeeding



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