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Who quits smoking during pregnancy? What can we learn from these women?

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Rationale

- Many studies (e.g., 1,2) focus on identifying who smokes (compared to those who do not) during pregnancy, with higher rates found among women who are:
  - Younger
  - Low SES background
  - Indigenous
  - Living in a rural or remote area
- Consequently, cessation interventions traditionally target socially disadvantaged women.
- However, this strategy is not enough since only ~7% of women quit while pregnant – despite the support provided (~8 antenatal visits).[3]
- More important to know, out of women who smoke, *what makes them more likely to successfully quit,* so that these factors can be supported and promoted.

Who quits during pregnancy? How are they different from those who do not?

Methods

Data were drawn from the Tasmanian Population Health database of women who had received antenatal care in Tasmania (Australia) between 2011 and 2013 (n = 14300).

- 2781 (19.4%) self-reported as smoking in the first half (first 20 weeks) of their pregnancy.
- Of these, 2570 (92.4%) continued to smoke and 211 (7.6%) quit during the second half of their pregnancy (second 20 weeks).
- Demographic and smoking characteristics were compared between smokers and non-smokers (Table 1), and quitters and non-quitters (Table 2).

Table 1.

Characteristics of total sample and comparison of maternal smokers and non-smokers.

Variable	Mean (SE)/Frequency			*p* value
	Total sample[1] N = 14300	Non smokers n = 9908 (69.3%)	Smokers n = 2781 (19.4%)	Independent Samples *t*-test or Chi-Square
Age	28.16 (.05)	28.79 (.06)	26.02 (.11)	***p* <.001**
Gestation at first visit[2]	6.21 (.05)	6.10 (.06)	6.36 (.13)	*p* = .08
Average number of antenatal visits	5.74 (.04)	5.67 (.05)	5.46 (.09)	***p* <.05**
In a Relationship[3]	72.1%	78.8%	50.2%	***p* <.001**
Born in Australia[4]	90.3%	88.0%	98.1%	***p* <.001**
Indigenous[5]	5.9%	4.1%	11.5%	***p* <.001**
Alcohol consumed[6]	9.2%	8%	13.5%	***p* <.001**
Mental health condition[7]				
No Mental Health Issues[7]	70.5%	75%	55%	***p* <.001**
Depression	11.8%	9.9%	18.5%	***p* <.001**
Anxiety	3.3%	3.1%	4.2%	***p* <.01**
Postnatal Depression	4.2%	3.6%	5.7%	***p* <.001**
Anxiety & Depression	3.2%	2.6%	5.3%	***p* <.001**
Other Combination	4.1%	3.2%	7.1%	***p* <.001**
Drug Usage				
No drug use	97.0%	98.9%	90.1%	***p* <.001**
Marijuana[8]	2.8%	0.9%[13]	9.1%	***p* <.001**
Amphetamines[9]	0.2%	0.1%[14]	0.7%	***p* <.001**
Poly Drug Use[9]	0.2%	0.2%[15]	0.4%	*p* =.19

Notes: [1]n = 1611 (not stated; 11.3%); [2]n = 14271 (29 missing); [3]n = 14245 (55 missing); [4]n = 14263 (37 missing); [5]n = 13977 (323 missing); [6]n = 14185 (115 missing); [7]n = 14286 (14 missing); [8]n = 14281 (19 missing); [9]n = 14282 (18 missing). SE = Standard error.

Results

Women who quit were more likely to (Table 2);

- Be in a relationship
- Not have experienced Postnatal Depression

Table 2.

Comparison of maternal smokers who quit in second half of pregnancy compared to those who did not.

Variable	Mean (SE) or Frequency		*p* value
	Non Quitters N = 2570	Quitters N = 211	Independent Samples *t*-test or Chi-Square
Age	26.08 (.12)	25.27 (.40)	*p* = .06
Gestation at first visit[1]	6.41 (.14)	5.75 (.42)	*p* = .14
Average no. of antenatal visits	5.41 (.10)	6.06 (.36)	*p* = .08
In a relationship[2]	49.6%[3]	57.8%	***p* < .05**
Born in Australia	98.1%	97.2%	*p* = .33
Indigenous[3]	11.8%	8.6%	*p* = .16
Consumed Alcohol[4]	13.8%	10.4%	*p* = .17
Mental health condition[5]			
No Mental Illness	55.0%	55.5%	*p* = .89
Depression	18.5%	18.5%	*p* = .99
Anxiety	4.2%	4.7%	*p* = .69
Postnatal Depression	6.0%	2.4%	***p* < .05**
Anxiety & Depression	5.3%	6.2 %	*p* = .57
Other Combination	7.2%	5.7%	*p* = .42
Drug use			
No drug use	90.0%	91.9%	*p* = .36
Marijuana[6]	9.1%	8.1%	*p* = .60
Amphetamines[6]	0.7%	0.5%	*p* = .70
Poly Drug Use[7]	0.4%	0.5%	*p* = .77

Notes: [1]43 people had gestation of '0' at first appointment, this is not taken into account in analysis; [2]n = 2563 (7 missing); [3]n = 2540 (30 missing); [4]n = 2544 (26 missing); [5]n = 2569 (1 missing); [6]n = 2561 (9 missing); [7]n = 2566 (4 missing). SE = Standard error.

Implications

- Need to focus resources on *characteristics that influence ability to quit*, not just likelihood of smoking.
- Consistent with other literature, this research indicates that **partner support**[4,5] and **mental health**[6,7] are key.
- Consequently, effective smoking cessation in pregnancy interventions should focus on promoting:
  - **Partner support**
    - ✓ Encourage and support *partner* to quit smoking.
    - ✓ Encourage *positive* (rather than negative 'nagging') support behaviours.
    - ✓ Include partners in antenatal care conversations, including effect of SHS exposure.
    - ✓ Support identification of alternative support partner (where traditional partner is absent).
  - **Mental health**
    - ✓ Smoking cessation cannot be targeted in isolation, holistic support needed to also address mental and physical health.
    - ✓ Important to provide both ante- and post-natal mental health support.
    - ✓ Encourage linking of existing services (e.g., hospital social support services, pharmacy, drug and alcohol services, child health services) to promote perinatal mental health.

A pregnant smoker's social environment and mental health must be acknowledged and incorporated in order to facilitate quit support that is effective and long-lasting.

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