

Prevalence of postpartum anal incontinence: a cross sectional study in Northern Sri Lanka

N Rajeshkannan¹, A Pathmeswaran²

(Index words: postpartum faecal incontinence, episiotomy, Sri Lanka)

Abstract

Objectives To estimate the prevalence of postpartum anal incontinence (AI) and to highlight associated factors that account for variation in the prevalence in Vavuniya district in Northern Sri Lanka.

Methods A community based cross sectional study was conducted. Sample included all mothers (hospital and home deliveries) who had completed postpartum period between 1st August and 30th September 2007. Participants were identified from the "expected date of delivery" registers maintained by public health midwives. Data were collected by trained public health midwives at the respondents' houses using an interviewer administered questionnaire.

Results The mean age of the 540 postpartum mothers interviewed was 28 years (range: 16 - 44). Majority 78% (n=423) were Sri Lankan Tamils, 13% (n=68) Sinhalese and remaining 9% (n=49) Moors. Thirty nine percent (n=209) were primi parous, 81% (n=435) had a normal vaginal delivery and 79% (n=344) had an episiotomy. Out of 540 mothers, 16.5% (95% CI: 13.4 - 19.6) reported anal incontinence. Among them only 39.3% (n=35) had consulted a health worker for the symptom. In the bivariate analysis the following factors were significantly associated with anal incontinence: parity, history of an episiotomy, duration of labour >12hrs, mode of delivery (vaginal), family income and maternal age (teenage). But the multiple logistic regression analysis revealed only the episiotomy status as an independent risk factor (adjusted odd ratio: 3.4 (95% CI: 1.28 - 8.9).

Conclusions Anal incontinence is not an uncommon symptom in postpartum mothers and majority of affected individuals avoided seeking medical attention. Factors associated with increased risk of anal sphincter damage should be considered during delivery and an attempt should be made to reduce it.

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Introduction

Anal incontinence (AI) is regarded as an "unvoiced symptom" and affected individuals avoid seeking medical

attention [1]. Faecal incontinence is also a distressing condition, recognised for its negative impact on quality of life for women of all ages. Although estimates vary widely depending on the study population and the definition of faecal incontinence, population-based studies suggest that its prevalence in community dwelling adults is 2% to 12% [2, 3]. A major cause of faecal incontinence in young healthy women is anal sphincter tear during vaginal child birth [4]. The incidence of clinically detected obstetric sphincter tears is 3% - 24% [5, 6]. These injuries are usually repaired surgically at the time of delivery. Recent studies have reported sub-optimal outcome in about 50% of these women, leading to various degrees of anal incontinence [7]. Instrumental delivery, increasing age, increasing birth weight, length of labour are identified as risk factors [8].

Anal incontinence (AI) is defined as the involuntary loss of faeces or flatus, which adversely affects a woman's quality of life. The aim of the present study was to determine the prevalence of anal incontinence among postpartum mothers in a district of Sri Lanka and identify significant factors associated with anal incontinence.

Methods

Between 1 August and 30 September 2007 all postpartum women (at the end of 6 weeks after partus) in the Vavuniya district were asked to participate in a cross sectional study. Participants were interviewed by trained interviewers (public health midwife) at their home. The questionnaire consisted socio demographic and obstetric characteristics of participants and symptoms during the post-partum period. The diagnosis was based on the women's positive answer to the question:

"Have you ever lost control of your intestines? resulting in involuntary gas or faecal loss you did not mean to . . . after childbirth?" [10].

As this study depended on participant's memory for answers there are some limitations in the study. Out of 567 postpartum mothers 540 (95.2%) were interviewed by public health midwives for the study and 27 were not interviewed mainly because they had moved to their parents house outside the district after delivery. All the

¹MD General Practitioner, Broken Hill Australia, ²Professor of Public Health, Faculty of Medicine, University of Kelaniya, Sri Lanka.

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approached mothers agreed to participate (response rate 100%). To increase the validity wherever appropriate records were reviewed and cross checked. The study was approved by the Ethical Review Committee of University of Kelaniya.

Data entry was carried out using a programme based on Epi data document version 3.1 (Lauritsen and Braises 2004). Statistical Package for Social Scientists (SPSS Version 14.00.2008) was used for analysis and reporting. Computer data entry were done within few days which enabled to correct any errors or omissions detected in the completed questionnaire. A univariate analysis followed by bivariate analysis was carried out examining the relationship of anal incontinence with some socio demographic and obstetric variables. Individual variables were examined to see if they were associated with the anal incontinence, using chi square tests (with Yates corrector for 2x2 tables). Odd ratio was calculated wherever appropriate. Then logistic regression analysis was done to identify the independent risk factors.

Results

Maternal socio demographic and obstetric characteristics are shown in Table 1 and Table 2.

Table 1. Socio demographic characteristics of women interviewed

<i>Socio demographic variables</i>	<i>N</i>	<i>%</i>
Age of Mother		
< 20 years	43	8
20 - 35 years	447	82.8
> 35 years	50	9.2
Race		
Sri Lankan Tamil	423	78.3
Sinhalese	68	12.6
Muslims	49	9.1
Highest Educational attainment		
Not attended school	8	1.5
Grade 1-5 (Primary)	86	15.9
Grade 6-10 (Secondary)	215	39.8
Passed G.C.E (O/L)	137	25.4
Passed G.C.E (A/L)	83	15.4
Degree and above	11	2.0
Occupation		
Professionals	28	5.2
Skilled and clerical	12	2.2
Sale representative / Shop	3	0.6
Semiskilled	8	1.5
Labourer	30	5.6
Housewife	459	85.0
Family income (Total)		
≤ Rs. 5 000	279	51.7
Above Rs. 5 000	261	48.3

Table 2. Distribution of delivery related factors

<i>Obstetric Variables</i>	<i>N</i>	<i>%</i>
Parity		
Primi	209	38.7
Multi	331	60.3
Mode of delivery		
Vaginal	435	80.6
Caesarian	84	15.6
Instrumental	21	3.8
Duration of Labour		
≤12 hours	338	62.6
More than 12 hours	202	37.4
Assistance of Delivery		
Doctor	314	58.1
PHMM (Public Health Midwives)	210	38.9
Nurse	4	0.7
Others	12	2.2
Episiotomy performed or not		
Yes	344	63.7
No	196	36.3
Birth weight of 1st baby		
< 2.5 kg	111	20.6
2.5 - 3.5 kg	399	73.9
> 3.5 kg	30	5.6

Mean age of women interviewed was 27.7 (SD=5.5), minimum age was 16 and maximum age was 44. Majority were Sri Lankan Tamils 78 % (n=423), 13 % (n=68) Sinhalese and remaining 9% (n=49) Moors. Forty three (8%) mothers were teenagers and 9% of were above the 35 years. 38.7 % of study population were primi mothers and among 61.3% of multi mothers 12% were having pervious child within age of two. Around eighty one percent of women in the study delivered vaginally, 15.6% delivered by caesarian section and remaining 3.8% by instruments.

Out of 540 postpartum mothers interviewed 89 mothers (16.5%, CI - 13.4 - 19.6) reported anal incontinence. The majority of the women who experienced anal incontinence perceived the symptom as moderate in severity. Even though 89 mothers reported anal incontinence during postpartum period only 35 mothers (39.3%) consulted a health worker for the above morbidity. In the bivariate analysis the following factors were significantly associated with anal incontinence: parity (primi), mothers who had episiotomy (episiotomy status), duration of labour >12hrs, mode of delivery (vaginal), maternal age (teenage) and total family income (Table 3). Among the teenage mothers 23.3% reported anal incontinence (Table 3). But with increasing age this decreased ($p=0.009$).

Table 3. Selected factors in women with anal incontinence

Characteristic	Status of anal incontinence			Level of significance and/ ratio or odds
	Presente No (%)	Absente No (%)	Total No	
Age				
< 20 years	10 (23.3)	33 (76.7)	43	Chi-squares 9.356, $p = 0.0009$
20 - 35 years	78 (17.4)	369 (72.6)	447	
> 35 years	1 (2)	49 (98)	50	
Parity				
Primi	61 (29.2)	148 (70.8)	209	Chi square 39.98, $p < 0.001$
Multi	28 (8.5)	303(91.5)	331	
Family Income				
< 5000 Rs	34 (12.2)	845(87.8)	279	Chi-squares -7.7, $p < 0.01$
> 5000 Rs	55 (21.1)	206 (78.9)	261	
Birth weight of baby				
< 2.5 Kg	20 (18.0)	91 (82.0)	111	Chi square - 2.318, $p = 0.314$
2.5 - 3.5 Kg	67 (16.8)	332 (83.2)	399	
> 3.5 Kg	2 (6.7)	28 (93.3)	30	
Episiotomy performed or not				
Yes	80 (23.2)	264 (76.8)	344	Chi square 31.597, $p < 0.001$, Adjusted odd ratio 3.4 (95% CI : 1.28- 8.9)
No	9 (4.6)	187 (95.4)	196	
Duration of Labour				
Less than 12 hrs and equal	45 (13.4)	293 (86.6)	336	Chi square 6.587, $p = 0.001$
> 12 hours	44 (21.8)	158 (78.2)	202	
Mode of Delivery				
Normal vaginal	83 (19.1)	352 (80.9)	435	Chi square - 11.26, $p = 0.004$
Instrumental	2 (9.5)	19 (90.5)	21	
Caesarian	4 (4.8)	80 (95.2)	84	

Out of 209 primi mothers 61 (29.1%) were reported anal incontinence while out of 331 multi parity mothers only 8.4 % reported anal incontinence ($p < 0.001$) (Table 3). Birth weight was not significantly associated with anal incontinence even though it was shown as an associated factor in some studies [11]. Reported anal incontinence percentage is high among the group of mothers with total family income \geq Rs.5000 ($p < 0.01$) (Table 3). Out of 279 mothers among the less than Rs. 5 000 income group 12.2% reported anal incontinence but 21.1% mothers reported AI among the greater than Rs. 5 000 income group.

Among 540 postpartum mothers 435 mothers (80.6%) delivered vaginally. Among the mothers who

delivered vaginally 19.1% of mothers reported anal incontinence but among mothers who delivered by caesarian section only 4.8% reported anal incontinence ($p = 0.004$). (Table 3).

Among 344 mothers who had episiotomy during delivery, 23.2% reported anal incontinence. But among 196 mothers who didn't have an episiotomy during delivery only 4.6% reported anal incontinence (Table 3). But the multiple logistic regression analysis revealed only having an episiotomy during delivery as an independent risk factor (adjusted odd ratio: 3.4 (95% CI: 1.28 - 8.9). So having an episiotomy during labour increase the risk of developing AI during postpartum period by 3.4 times.

Discussion

The present study demonstrates that anal incontinence is common among post partum mothers. Most of the mothers who reported morbidity also perceived that morbidity was not severe. In the present study we inquired about mild symptoms specifically which may explain the relatively high frequency of incontinence. Several women do not mention mild symptoms unless specifically asked for them. This was supported by the findings that only 39.3% of mothers who reported anal incontinence consulted health workers.

Anal incontinence does not constitute a severe problem for the majority of affected women. However obstetricians and midwives should ask specifically about anal incontinence at the routine postnatal examination. Women with mild symptoms can be encouraged to continue pelvic floor exercises under the guidance of physiotherapists. An association between the duration of labour and disturbances in the innervation of the anal sphincters is described [10]. Our study also demonstrated the association between labour duration and AI but multiple regression analysis failed to demonstrate this as an independent risk factor.

Frequent use of episiotomy in the community was observed in our study. Out of 540 mothers 344 mothers (63.7%) had episiotomy during delivery. Previous reports describe episiotomy as a risk factor for sphincter tears [12]. Our study also demonstrated a strong association between episiotomy and development of anal incontinence. An association between fetal weight and sphincter tear has reported previously but was not found in our study [7]. One possible reason may be the frequent episiotomy in our study population (63.7%).

A study has shown that increasing maternal age as a risk factor for developing anal incontinence after delivery [13]. But our study demonstrated an opposite finding to this. The possible reason again may be the high use of episiotomy especially in younger mothers and primi mothers. In our study also demonstrated that vaginal mode delivery associated with development of anal incontinence. But caesarian section was not entirely protective as 4.8% of mothers who delivered by caesarian section also developed anal incontinence.

In conclusion, this study shows that anal incontinence is a common symptom among postpartum mothers, but most perceived it as not severe. Most mothers with anal incontinence had not sought help from a health worker. The most important independent risk factor for development of anal incontinence was having an episiotomy.

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