

Trinity College Dublin

# **The MAMMI Study**

**Maternal health And Maternal Morbidity in Ireland**

**Faecal and Urinary incontinence before and during pregnancy**

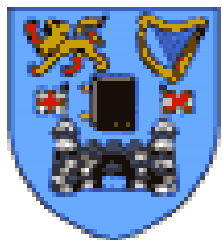
**4<sup>th</sup> International Nursing and Midwifery Conference  
15<sup>th</sup> April 2013, NUI Galway**

Déirdre Daly

Lecturer in Midwifery/HRB Research Fellow, Trinity College Dublin

Supervisors:

Professor Cecily Begley, TCD and Professor Mike Clarke, QUB (Adjunct Professor TCD)



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# **The MAMMI Study (UI strand)**

**Maternal health And Maternal Morbidity in Ireland**

**Faecal and Urinary incontinence before and during pregnancy**

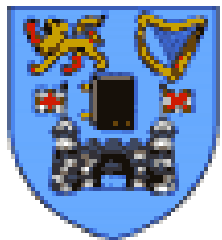
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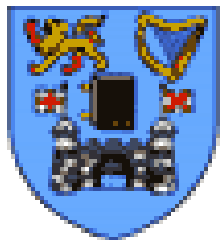
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# The MAMMI Study (UI Strand)



## Sincerest thanks to

- **The women** (all women including those who are not taking part but who read the information)
- The **midwives** and **midwifery students** and other **colleagues** who are supporting the MAMMI study
- My supervisors **Professor Cecily Begley** and **Professor Mike Clarke**
- My colleagues **Margaret Carroll, Deirdre O'Malley, Francesca Wuytack**
- **Rebekah Maguire** and **Sophie Clare** who worked with us on the MAMMI study in summer 2012
- The **Health Research Board (HRB)** for funding the MAMMI study (UI) strand
- **Professor Stephanie Brown**, Murdoch Children's Research Institute, Australia for granting permission to use and modify surveys



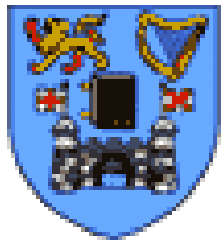
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# The MAMMI Study

Maternal health And Maternal Morbidity in Ireland

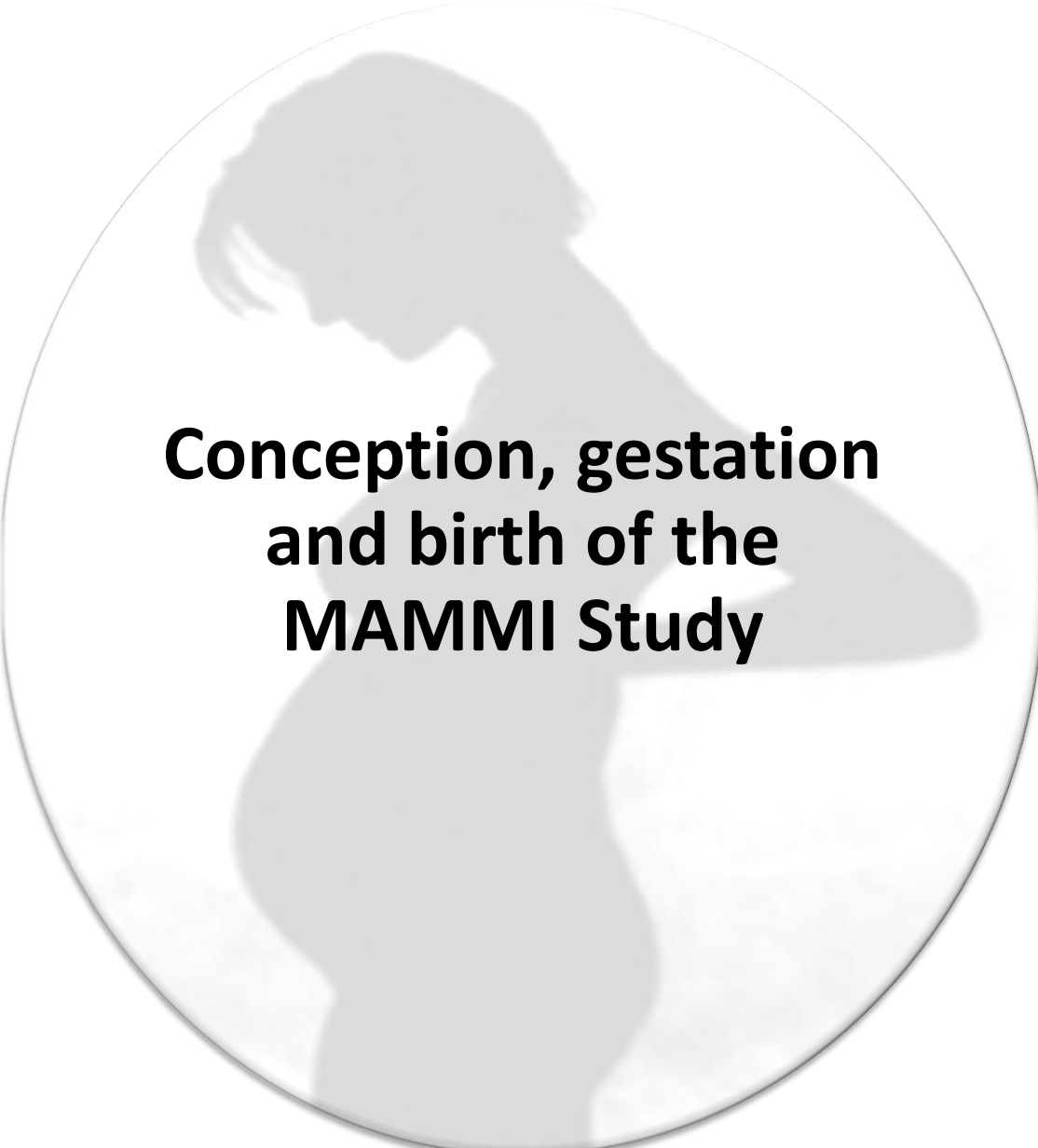


- **Background and overview of study methodology**
- **Aim and objectives of MAMMI study and the embedded MAMMI study urinary incontinence (UI) strand**
- **Preliminary findings on urinary and faecal incontinence**  
(from women recruited up to March 2013, n=725)
- **Key points**
- **Future work**

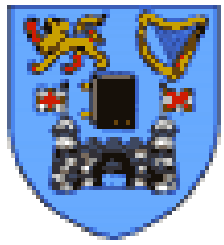


# Background and context

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A large, light gray silhouette of a pregnant woman in profile, facing left, is centered within a large white circle. The woman's head is tilted down, and her hand is resting on her hip. The circle is set against a white background.

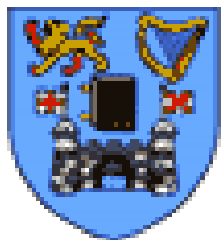
**Conception, gestation  
and birth of the  
MAMMI Study**



# Background and context



**Listening to women**



# Background and context

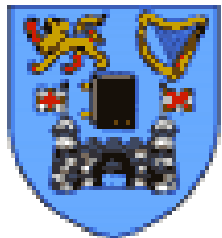


The MAMMI Study

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Searched 9-11th October 2009. Platform: Library, University of Dublin Trinity College

Database	Term	Linked with	Linked with	Limits	Years	Articles	Reviews	Main words in review heading
Date searched	(MeSH)	(MeSH)	(MeSH)					
PubMed	Pregnancy (90 items): Item 1: The status during which female mammals carry their developing young in utero before birth. Introduced 1963. Includes the terms labour (labor); pregnancy outcome; prenatal care; pregnant women; reproduction; gravidity; parturition in MeSH tree.							
09/10/09	<p><b>Morbidity (3 items): Morbidity; epidemiology and epidemiology subheadings).Item 1: Morbidity: the proportion of patients with a particular disease during a given year per given unit of population.</b></p>							
	Maternal morbidity and severe morbidity are not MeSH terms.							
	Pregnancy	Morbidity		Humans	-	14018		
Database	Term (MeSH)	Linked with	Linked with	Limits	Years	Articles	Reviews	Main words in review heading
Date searched		(MeSH)	(MeSH)					
PubMed	Complications (13 items eight of which mention 'pregnancy' related specific conditions and one which identifies 'pregnancy complications'). 1: Complications [Subheadings]: used with diseases to indicate conditions that co-exist or follow, i.e. co-existing diseases, complications or sequelae. 10:							
9/10/09	<p><b>Pregnancy complications: conditions or pathological processes associated with pregnancy. They can occur during or after pregnancy and range from minor discomforts to serious diseases that require medical interventions. They include diseases in pregnant females and pregnancies in females with diseases.</b></p>							
	Pregnancy	Complications		Humans	-	52210	8241	
		[Subheading]						



# Background and context

## The multiple meaning of maternal morbidities



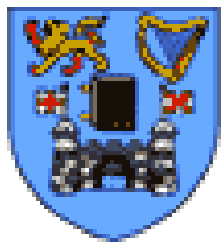
The MAMMI Study

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Searched 9-11th October 2009. Platform: Library, University of Dublin Trinity College

Database	Term (MeSH)	Linked with (MeSH)	Linked with (MeSH)	Limits	Years	Articles	Reviews	Main words in review heading
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09/10/09	<b>Morbidity (3 items): Morbidity; epidemiology and epidemiology subheadings).Item 1: Morbidity: the proportion of patients with a particular disease during a given year per given unit of population.</b>							
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	Pregnancy	Morbidity		Humans	-	14018		
Database	Term (MeSH)	Linked with (MeSH)	Linked with (MeSH)	Limits	Years	Articles	Reviews	Main words in review heading
Date searched								
PubMed	<b>Can occur during or after pregnancy...range from minor discomforts to serious diseases</b>							
9/10/09	<b>pregnant females and pregnancies in females with diseases.</b>							
	Pregnancy	Complications [Subheading]		Humans	-	52210	8241	



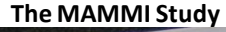


# Background and context

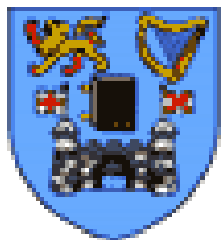


The MAMMI Study





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# Background and context

## The MAMMI Study

Maternal health And Maternal Morbidity in Ireland

General health after  
childbirth

All women

Multiparous women v  
Primiparous women

Women with underlying  
medical conditions

Physical problems

Psychological problems

Specific conditions

Obstetric emergencies

Severe morbidity

General health problems

Headache, migraine

Musculoskeletal pain

Perineal pain

Urinary problems

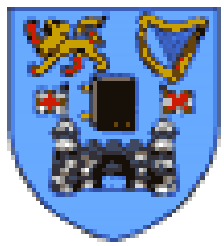
Bowel problems

Sexual health problems

Depressive symptoms

Infection

Mastitis and breast problems



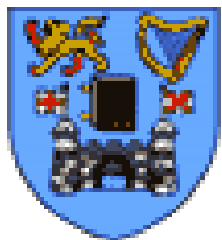
# Background and context

## The MAMMI Study

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- **More recent studies have shown**
  - The **prevalence** and **enduring nature** of many of these morbidities
  - Their **persistence** or **resolution** over time
  - The existence of **co morbidities**
  - The **inextricable link** between **maternal emotional wellbeing, depression** and **physical health recovery** postpartum
  - Morbidity can exist **before pregnancy**





# The MAMMI Study



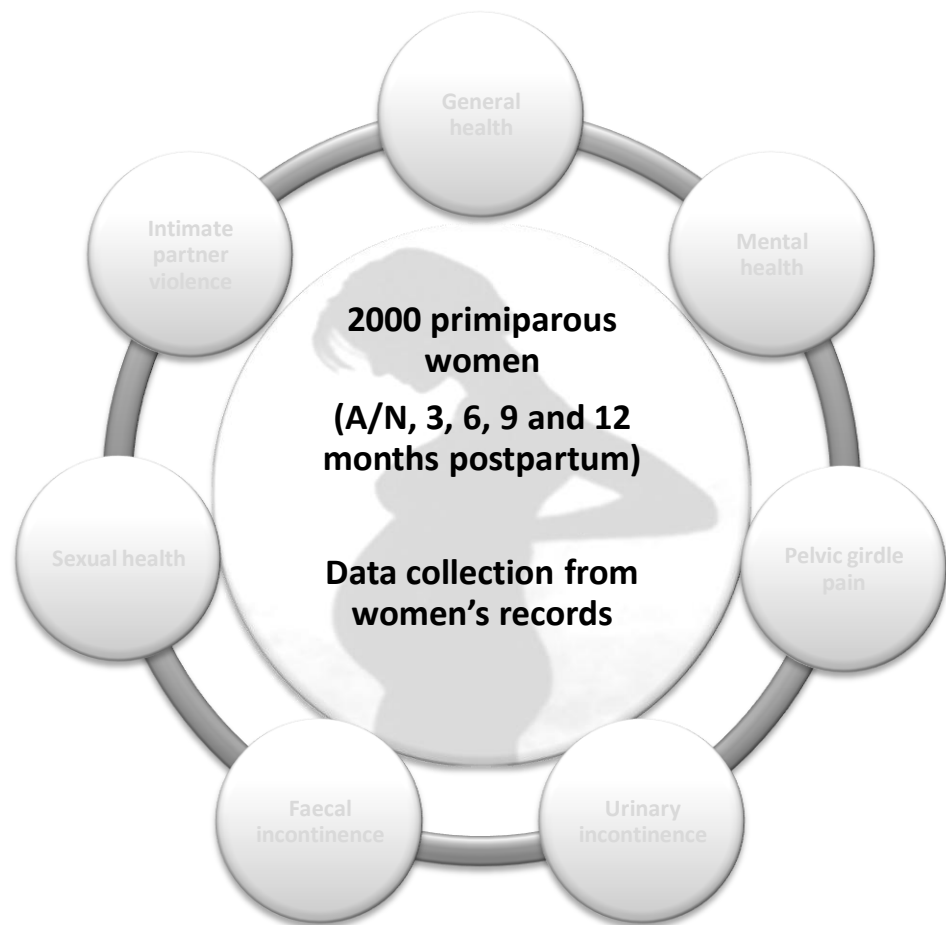
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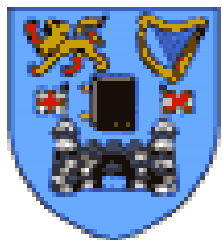
## Objective (i)

**to identify prevalence of morbidities up to 12 months postpartum for women having their first baby**

## Objective (ii)

**to identify associated factors e.g., age; Body Mass Index (BMI); mode of birth; birth weight**





# The MAMMI Study



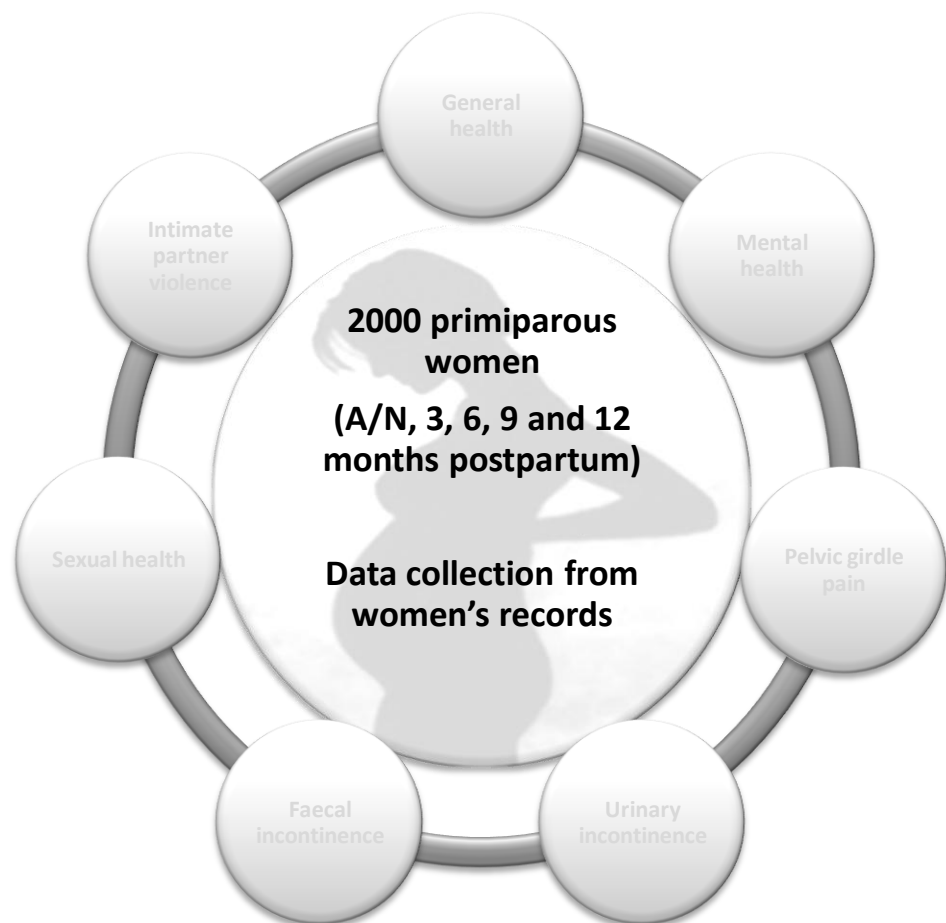
Trinity College Dublin

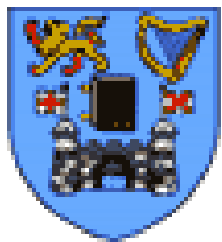
## Objective (iii)

**to identify the health service-seeking and self-help behaviours of sub-samples of women experiencing morbidities**

## Objective (iv)

**to identify the risk factors for morbidities that may be amenable to intervention**





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# Mixed methods design

## The MAMMI Study

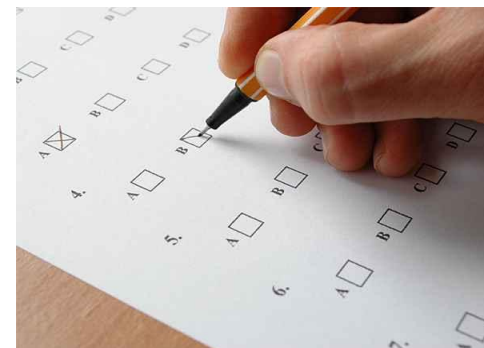


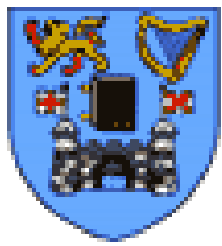
The MAMMI Study

**A cohort study with 2,000 first-time mothers: public, private, semi-private – survey.**

Women are **recruited at the booking visit** in one large maternity hospital

**(1600 from 1<sup>st</sup> site and 400 from 2<sup>nd</sup> site**





# Mixed methods design



The MAMMI Study

Trinity College Dublin

Study No

Study No

Study No

Study No

Study No

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet One: Antenatal

1

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do NOT wish to complete this or future surveys ☐

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Two: 3 Months Postnatal

2

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

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If you do not want to complete this or future surveys please tick ☐

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Three: 6 Months Postnatal

3

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

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## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Four: 9 Months Postnatal

4

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

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## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Five: Twelve Months Postnatal

5

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

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**Survey 1**  
**Antenatal**  
**First booking visit**

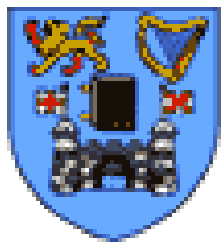
**Survey 2**  
**3 months**  
**postpartum**

**Survey 3**  
**6 months**  
**postpartum**

**Survey 4**  
**9 months**  
**postpartum**

**Survey 5**  
**12 months**  
**postpartum**





# Mixed methods design



The MAMMI Study

Trinity College Dublin

Study No

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet One: Antenatal 1

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call 01 856 8888.

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Please tick here if you do NOT wish to complete this or future surveys ☐

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Two: 3 Months Postnatal 2

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 856 8888.

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If you do not want to complete this or future surveys please tick ☐

Study No

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Three: 6 Months Postnatal 3

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 856 8888.

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Please tick here if you do not want to complete this or receive future survey ☐

Study No

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Four: 9 Months Postnatal 4

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Study No

## The MAMMI study

Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

### Survey Booklet Five: Twelve Months Postnatal 5

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Study No

Survey 1  
Antenatal  
First booking visit

Survey 2  
3 months  
postpartum

Survey 3  
6 months  
postpartum

Survey 4  
9 months  
postpartum

Survey 5  
12 months  
postpartum

Data  
collection  
from  
women's  
records

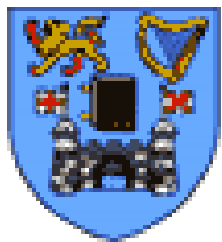


Interviews  
with women  
experiencing  
a morbidity



To ascertain  
health service  
and self-help  
seeking  
behaviour

Identify factors  
amenable to  
modification and  
trialling in future  
studies



# The MAMMI Study



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Each of the surveys asks women about...

The MAMMI study  
Researching health and wellbeing in the maternity system

Survey Booklet One: Antenatal

Survey Booklet Two: 3 Months Postnatal

Survey Booklet Three: 6 Months Postnatal

Survey Booklet Four: 9 Months Postnatal

Survey Booklet Five: 12 Months Postnatal

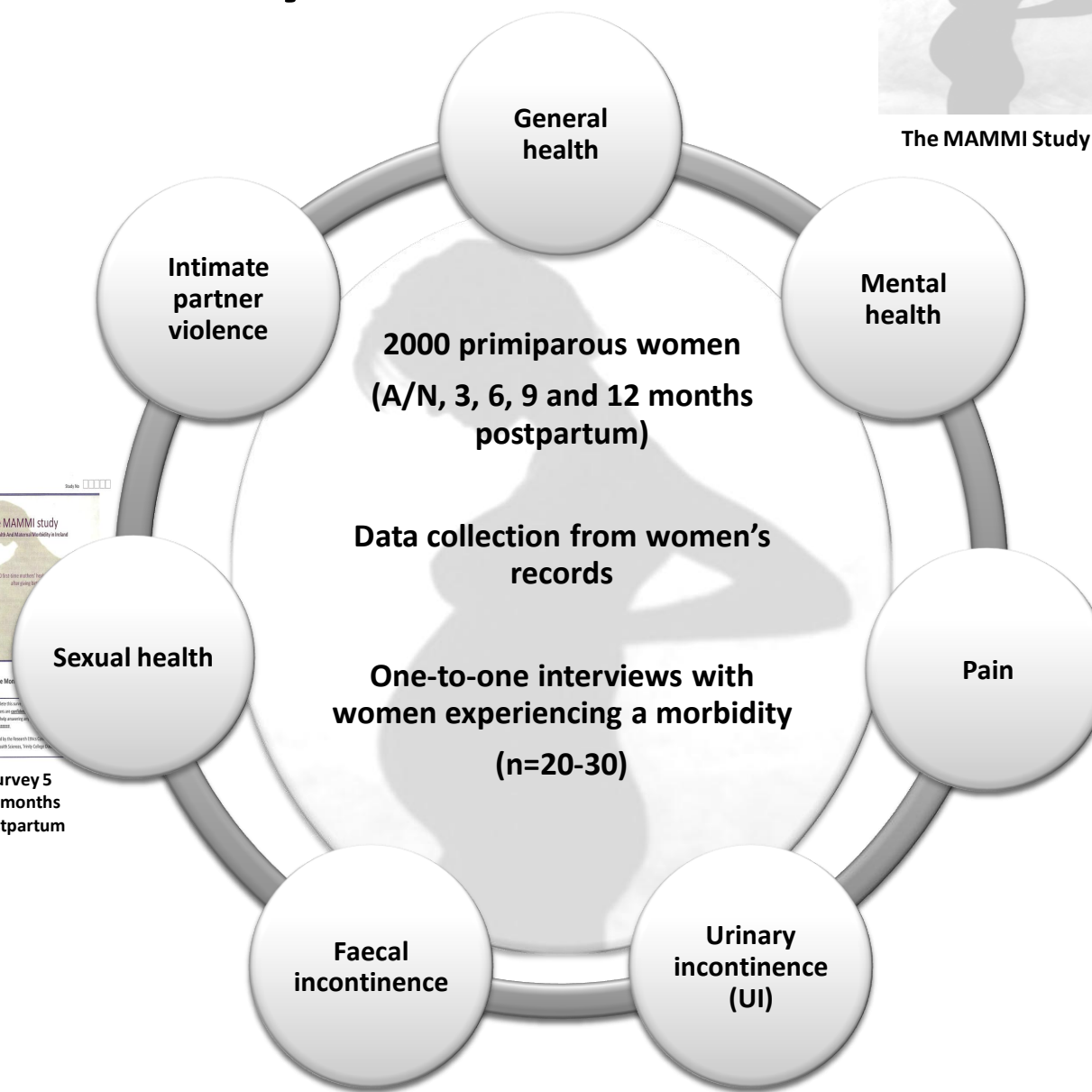
Survey 1 Antenatal First booking visit

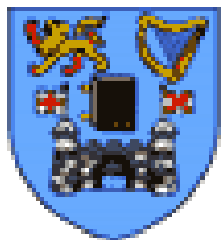
Survey 2 3 months postpartum

Survey 3 6 months postpartum

Survey 4 9 months postpartum

Survey 5 12 months postpartum





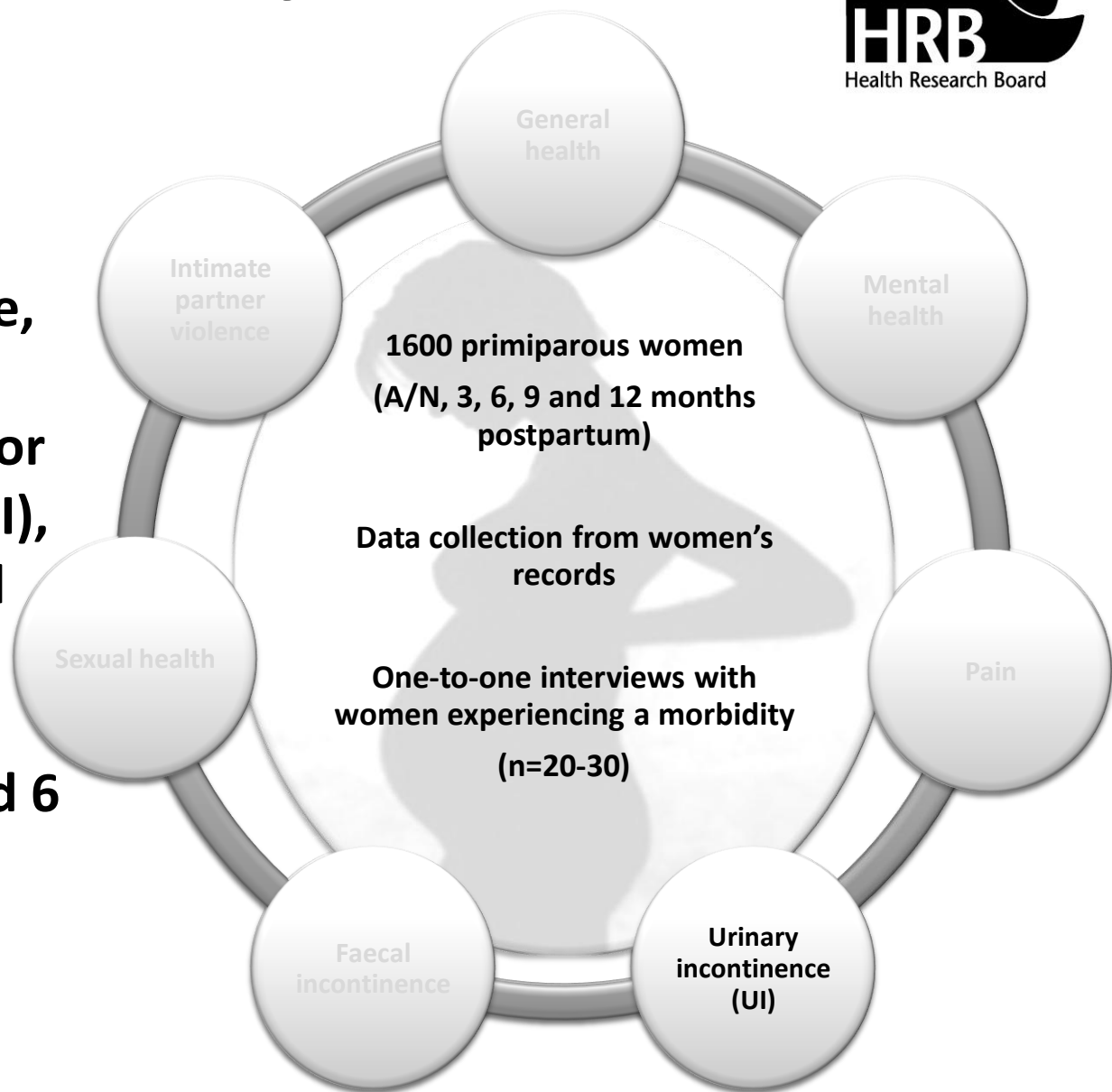
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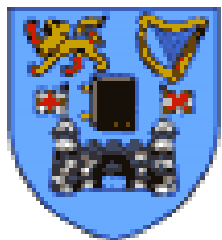
# The MAMMI Study – UI Strand



## Aim:

**To identify the existence, extent, prevalence and associated risk factors for urinary incontinence (UI), one marker of maternal morbidity, in 1600 primiparous women antenatally and at 3 and 6 months postpartum.**





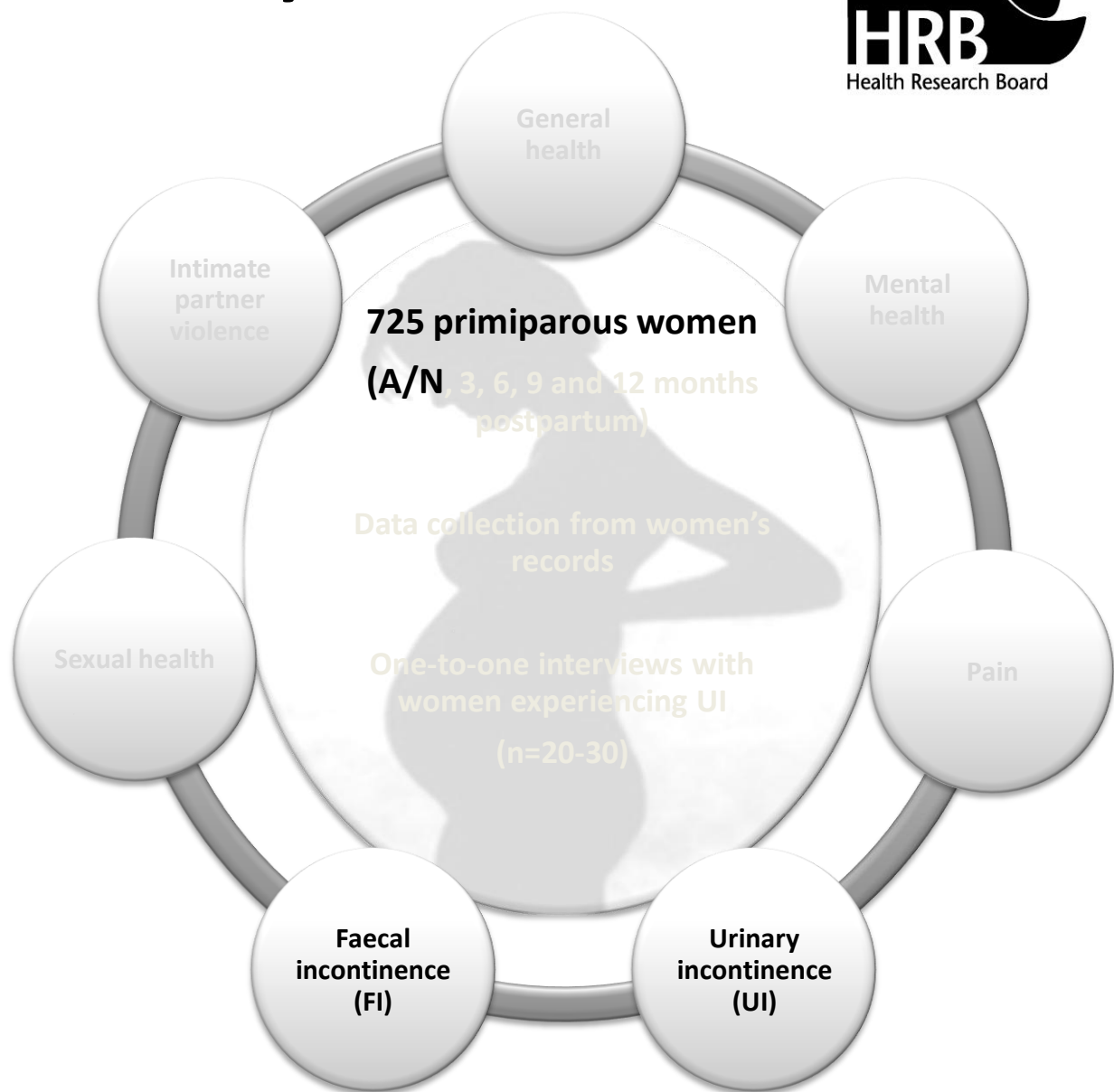
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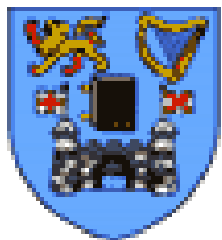
# The MAMMI Study – UI Strand



**Today's presentation  
focuses on  
Objective (i)**

**The prevalence of  
UI (and FI) before and  
during early pregnancy**





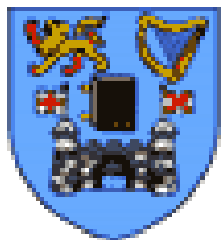
# Urinary incontinence (UI)



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Author	N	Prevalence
Glazener et al (2006)	3405 (primiparae; singleton pregnancy)	<b>29%</b> UI at 3 months postpartum: 3% had daily or more frequent leakage; 3% needed to wear a pad for this
	N	Prevalence
Brown et al (2009)	1507 (nulliparae)	Prevalence of UI increased from <b>10.8%</b> in the 12 months before the index pregnancy to <b>55.9%</b> in the 3 <sup>rd</sup> trimester



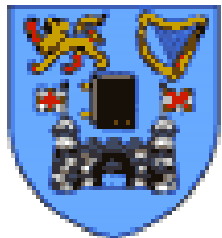
# Faecal incontinence and bowel problems



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		Prevalence at 17- 24 weeks postpartum			
Thompson et al (2002)	1295		Unassisted VB	Assisted VB	CS
		Bowel problems	15%	22%	22%
		Haemorrhoids	12%	19%	14%
			Prevalence at 4-8 weeks postpartum		Prevalence at 1 year postpartum
Schytt et al (2005)	2413	Haemorrhoids	24.6%		17.6%
		Constipation	20.5%		10.6%
		Anal incontinence	1.8%		1.5% (faeces inc.)



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# The MAMMI Study (UI) strand

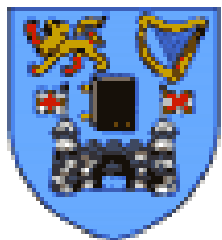
## Faecal and Urinary incontinence before and during pregnancy

### Definitions

*Abrams et al (2002) 2<sup>nd</sup> International Consultation on Incontinence 2<sup>nd</sup> edition.*



Available at: [http://www.ics.org/Publications/ICI\\_4/book.pdf](http://www.ics.org/Publications/ICI_4/book.pdf)



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# Definition - Urinary Incontinence (UI)



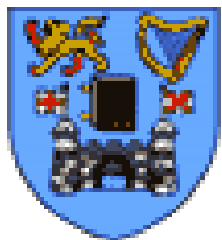
The MAMMI Study

- The complaint of any involuntary leakage of urine
  - **Stress Urinary Incontinence (SUI)**
    - Involuntary leakage on effort or exertion, or on sneezing or coughing
  - Urge Urinary Incontinence (UUI)
    - Involuntary leakage accompanied by or immediately preceded by urgency.
  - Mixed Urinary Incontinence (MUI)
    - Involuntary leakage associated with urgency and also with exertion, effort, sneezing or coughing.

*Abrams et al (2002) 2<sup>nd</sup> International Consultation on Incontinence 2<sup>nd</sup> edition.*

**Available at: [http://www.ics.org/Publications/ICI\\_2/MENUS/MAIN.PDF](http://www.ics.org/Publications/ICI_2/MENUS/MAIN.PDF)**

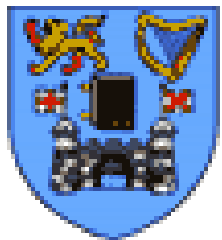




# Definition - Faecal Incontinence (FI)



- **Functional status**
  - Need to wear tissues or pads in underwear
  - **Degree of soiling of tissues, pads or underwear**
  - Duration, frequency and timing of incontinence
- **Severity of faecal incontinence**
  - **Minor** - if faecal seepage occurs less than once a month
  - **Moderate** - if there is incontinence of solids more than once a month or liquids more than once a week
  - **Severe** - if there is loss of control of solids several times a week or liquids on a daily basis

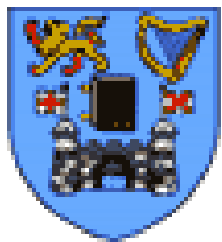


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# The MAMMI study



- **Preliminary data**
  - (~30%) of primiparous women are being offered information on the MAMMI study
  - Of those given the information, about one in three complete the survey
  - Response rate (~30%)

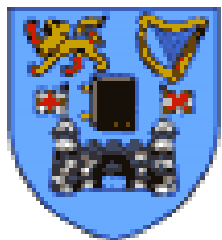


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# Demographic profile (n=725)



The MAMMI Study group			The site hospital 2011	
Nationality			Nationality (All women)	
	N	%	N	%
Irish	461	63.6%	5957	65.35%
EU	190	26%	1929	21.16%
Non-EU	64	8.8%	1217	13.35%
Not stated	10	1.4%	13	0.14%

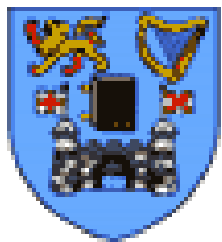


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# Demographic profile (n=725)



The MAMMI Study group			The site hospital 2011	
Age groups			Age groups (primiparous women)	
	N	%	N	%
Up to 24	62	8.6	976	23.5
25 to 29	166	22.9	1137	27.4
30 to 34	304	41.9	1314	31.7
35 to 39	162	22.3	581	14.0
40 and over	30	4.1	143 (4151)	3.5

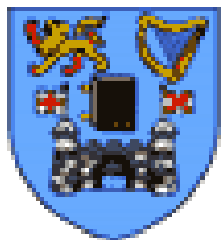


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# Demographic profile (n=725)



The MAMMI Study group BMI Categories			The site hospital BMI categories	
	N	%	N	%
Underweight (BMI <18.49)	50	6.9	Not available	
Ideal (18.5-24.9)	438	60.4		
Overweight (25-29.9)	113	15.6		
Obese (30-34.9)	53	7.3		
Very obese (35+)	12	1.7		
Total	666	91.9		
Missing	59	8.1		



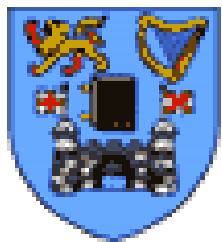
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# Leaking urine before pregnancy (n=725)

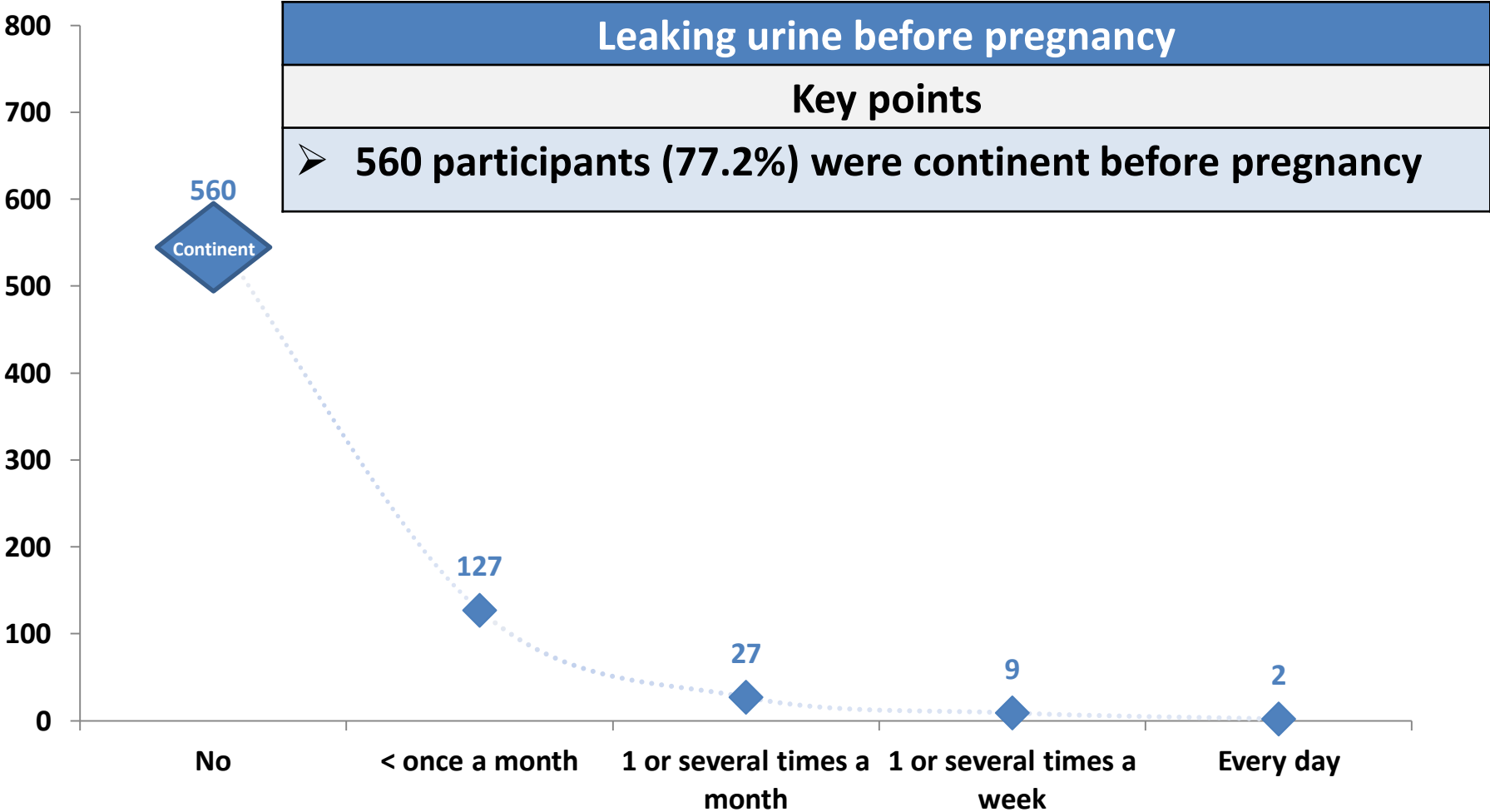


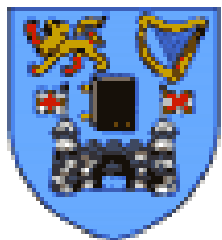
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During the 12 months before pregnancy,  
did you ever leak even a small amount  
of urine?

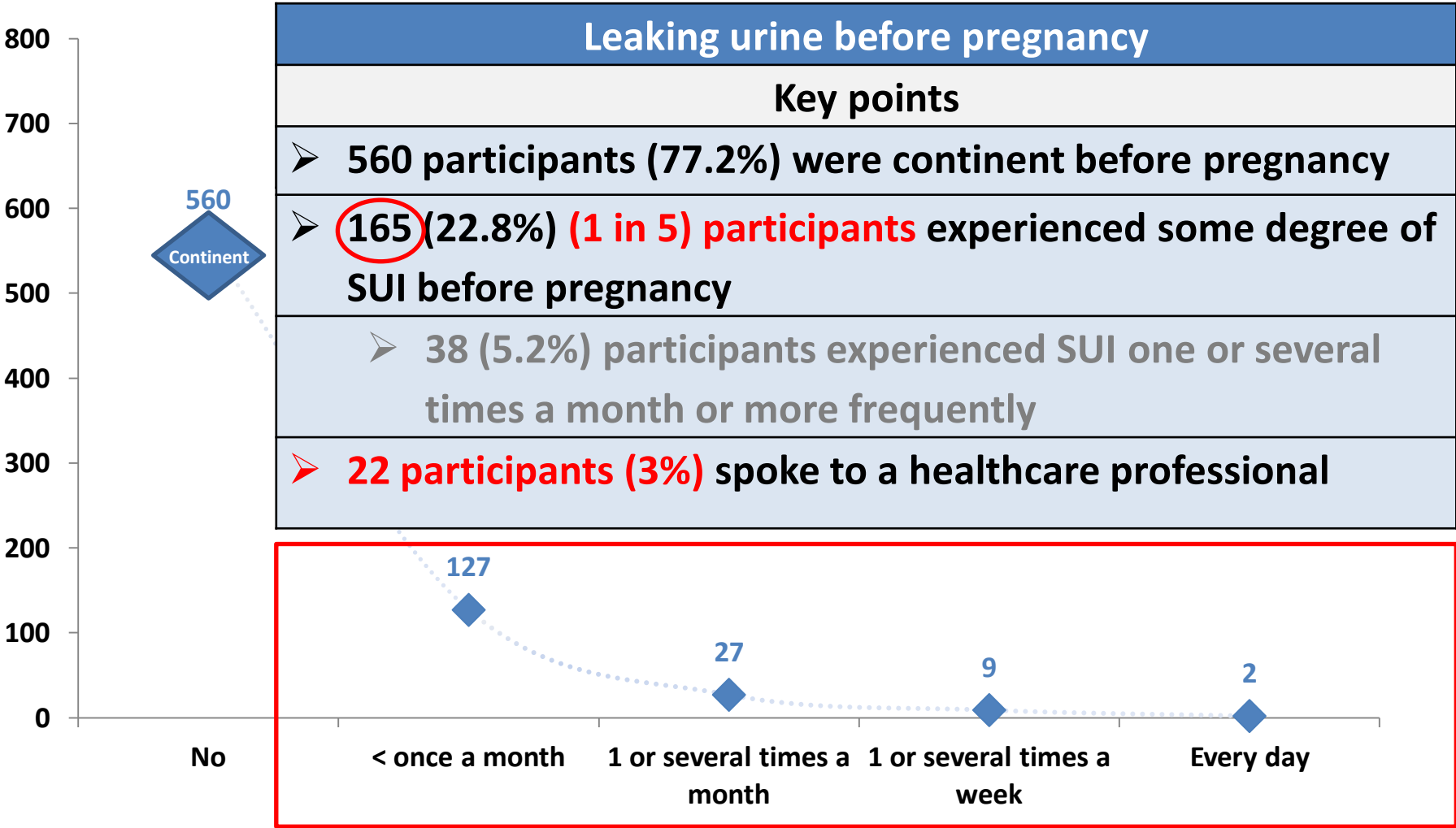


# Leaking urine before pregnancy (n=725)

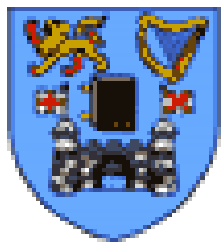




# Leaking urine before pregnancy (n=725)





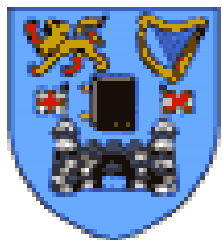


# Leaking urine before and during pregnancy

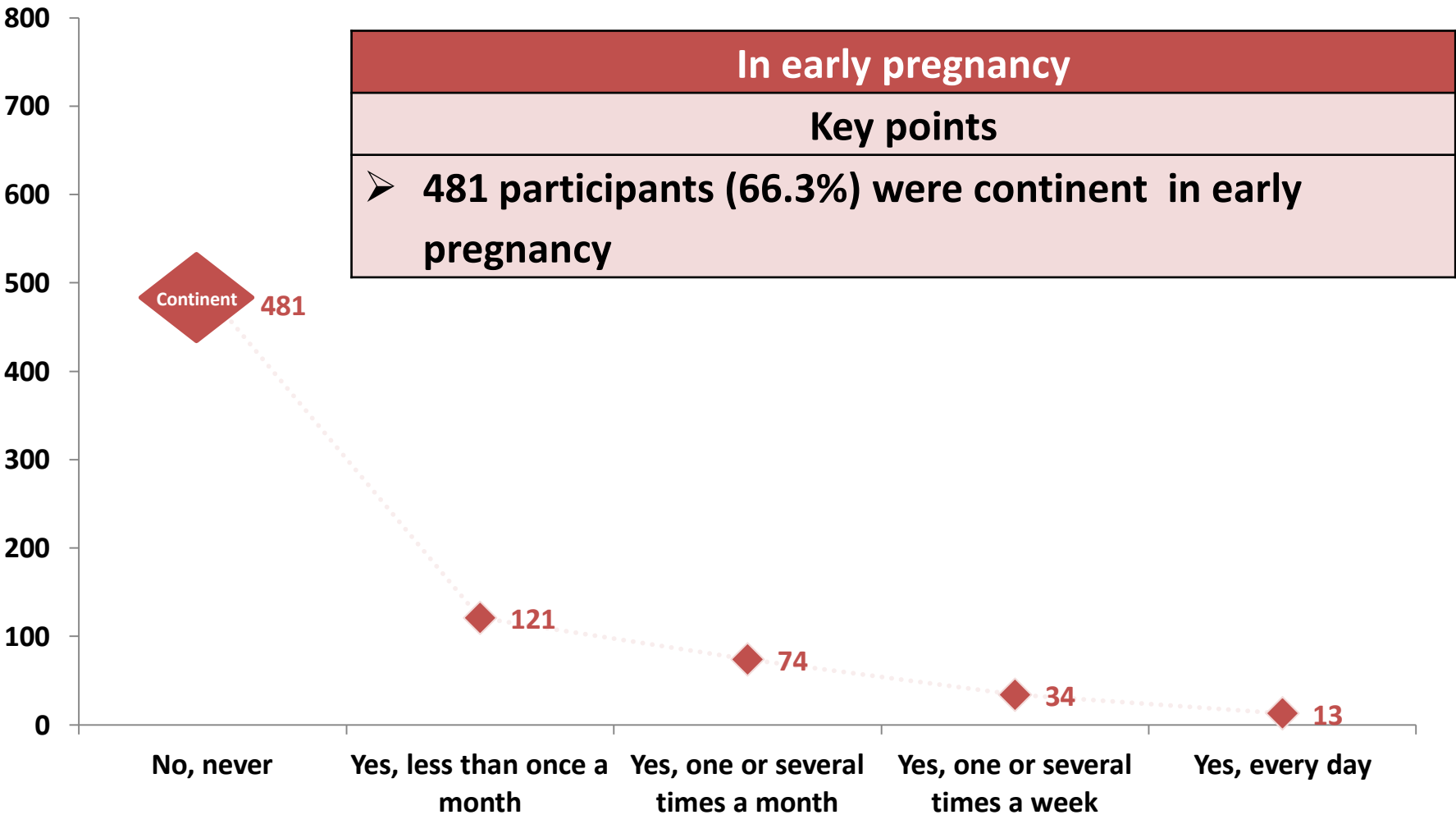


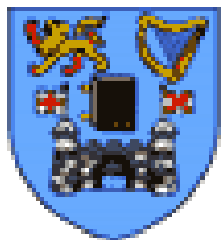
Since the start of your pregnancy have you leaked even small amounts of urine?



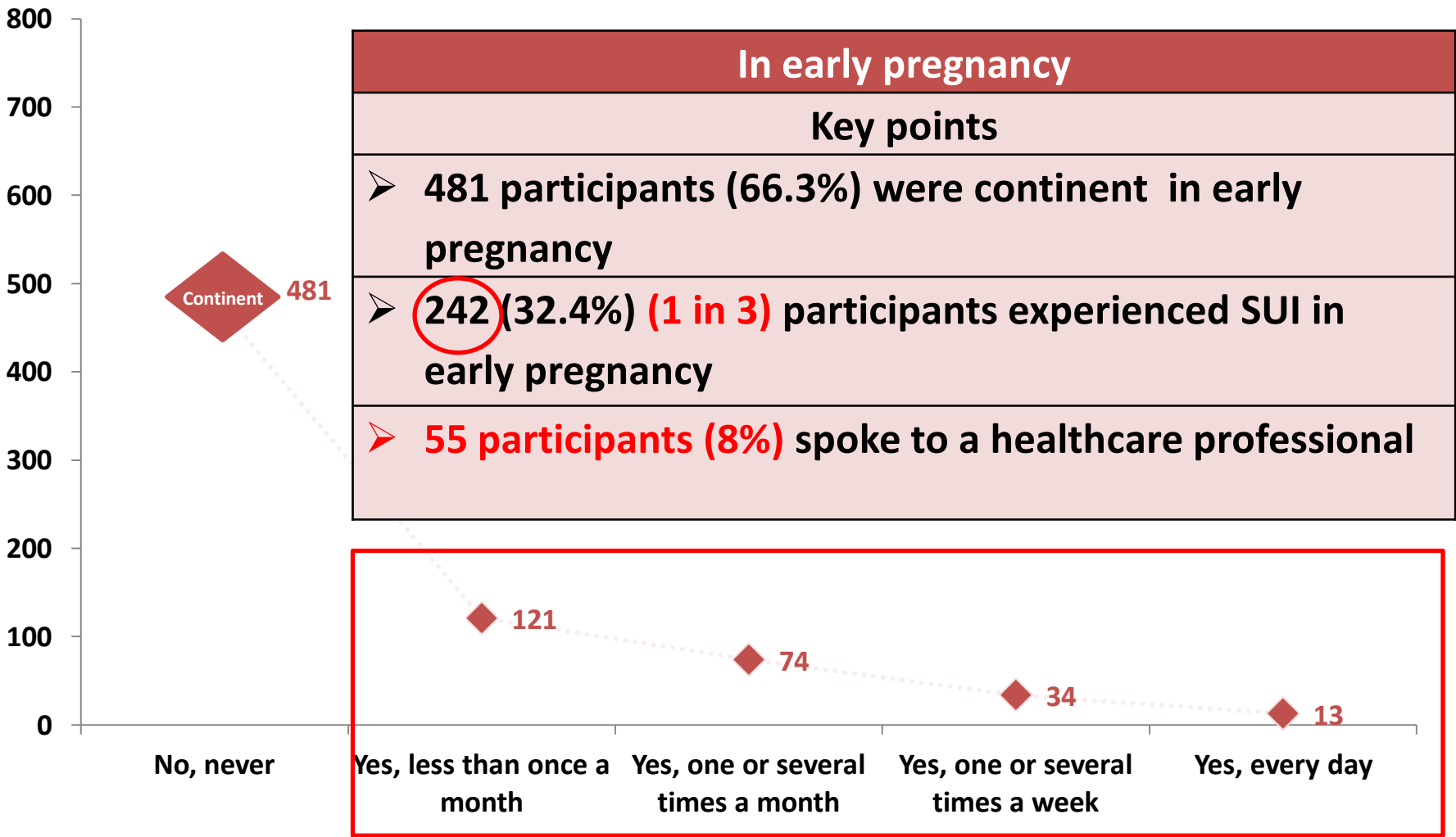


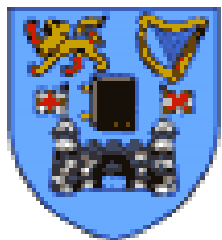
# Leaking urine before and during pregnancy





# Leaking urine before and during pregnancy



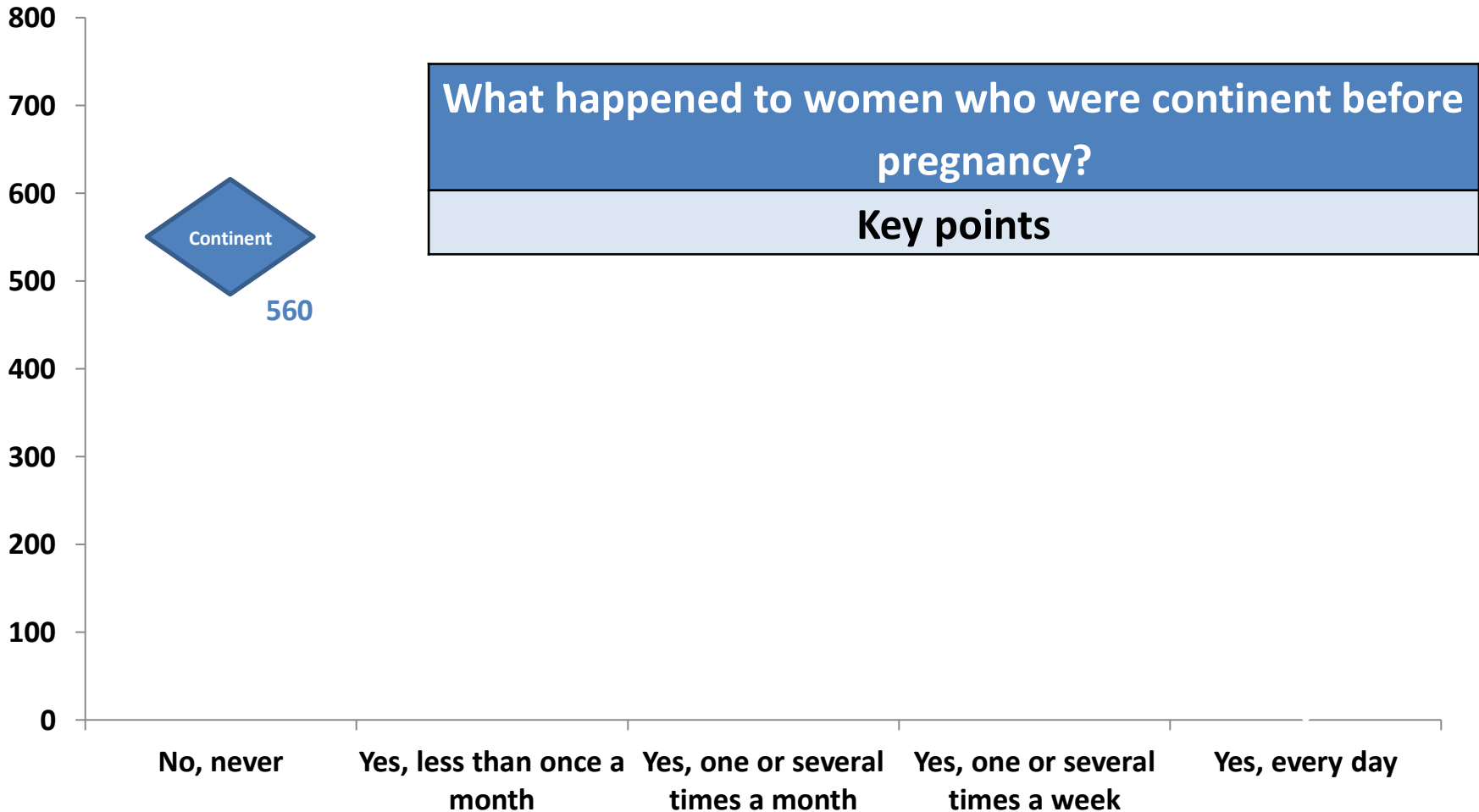


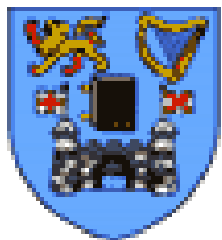
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# Women who were continent before pregnancy (n=560)

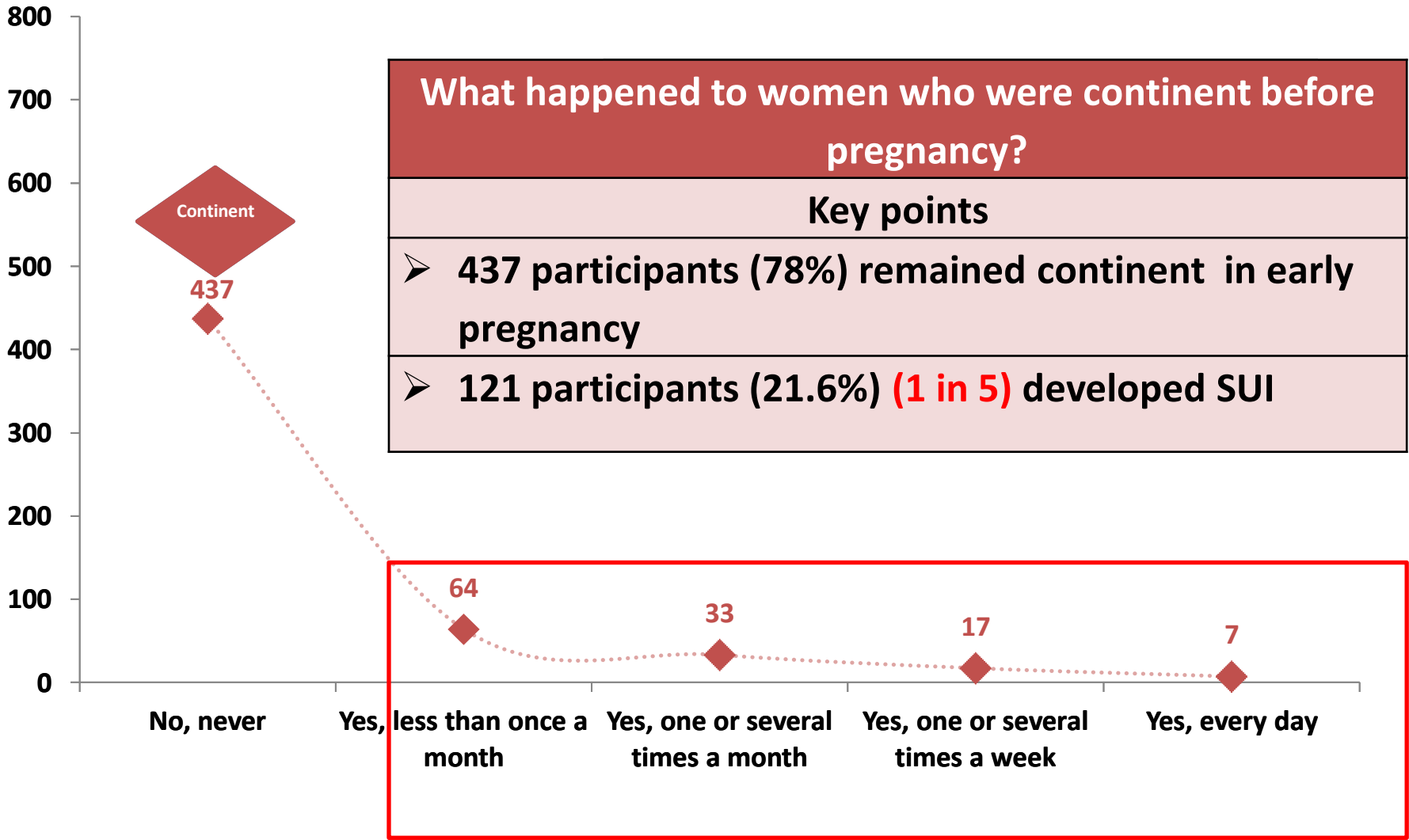


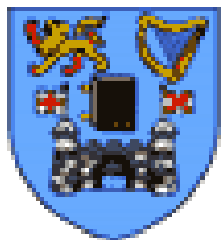
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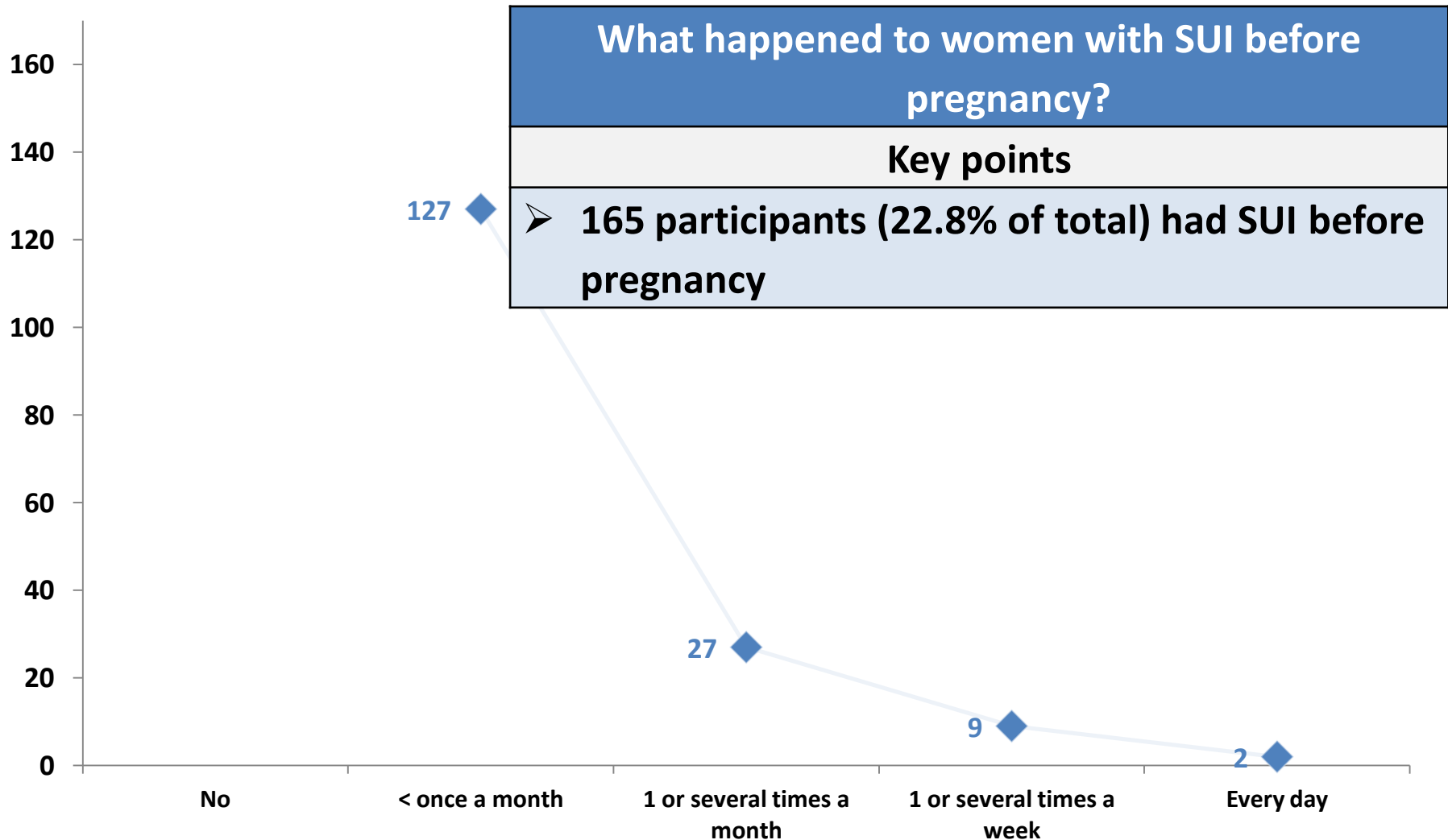


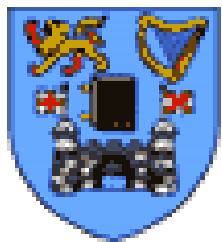
# Women who were continent before pregnancy (n=560)



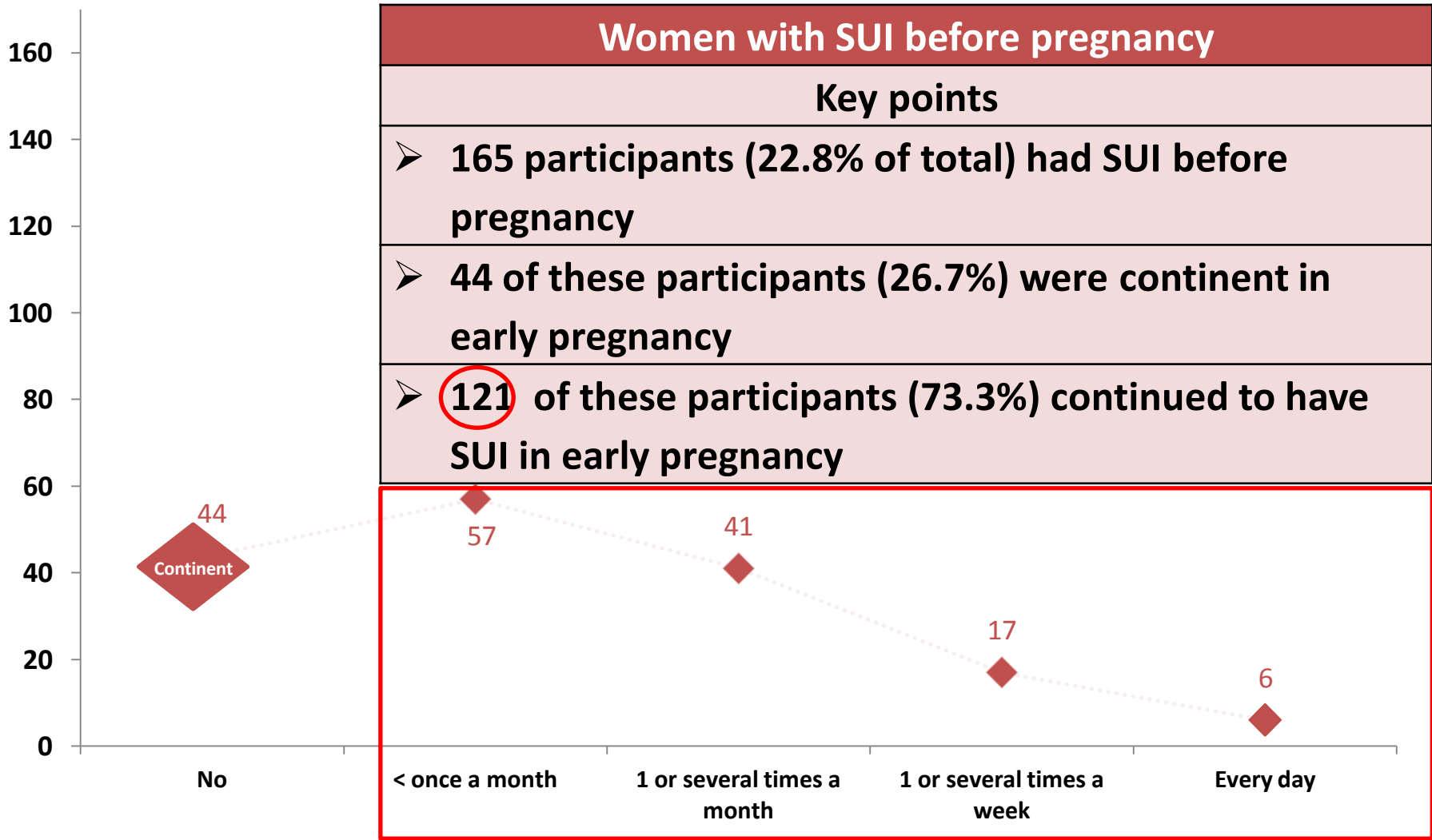


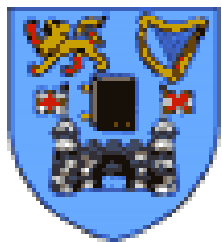
# Women with SUI before pregnancy (n=165)





# Women with SUI before pregnancy (n=165)





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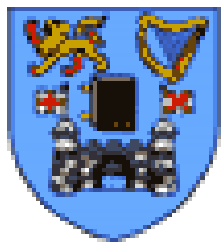
# Soiling before pregnancy (n=725)



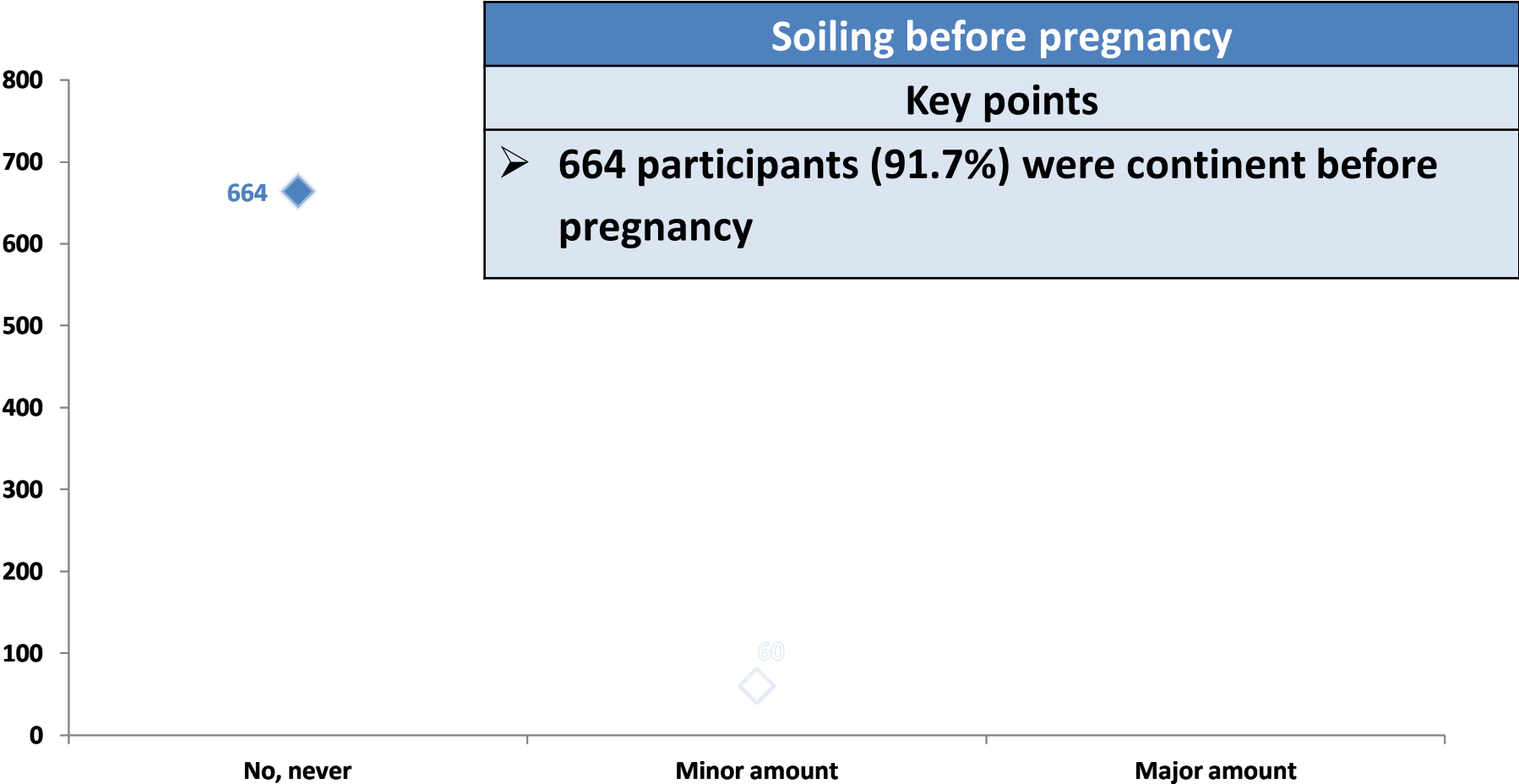
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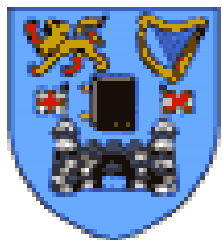
During the 12 months before your pregnancy, did you ever notice soiling from your back passage on your underwear?



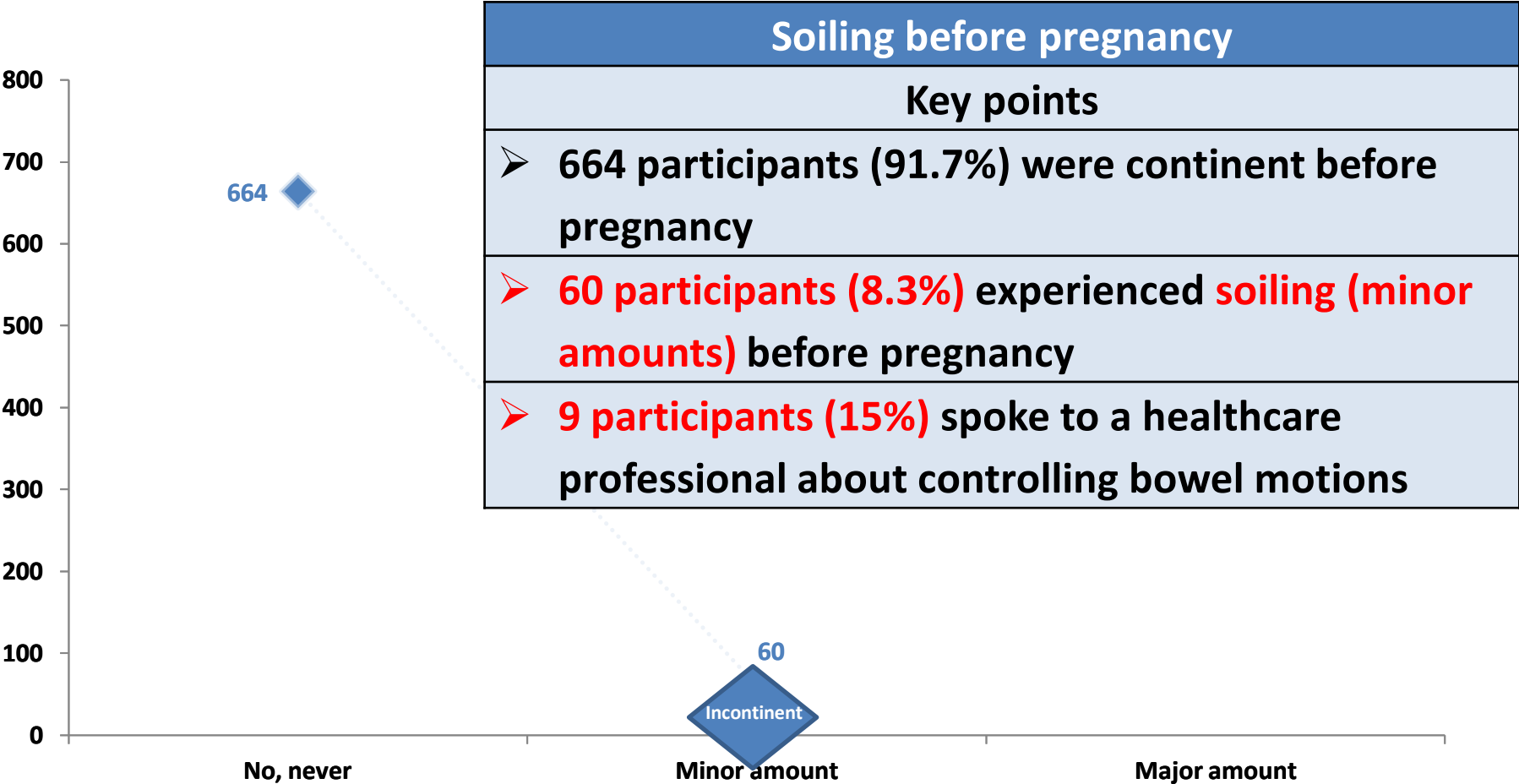


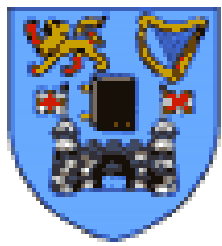
# Soiling before pregnancy (n=725)





# Soiling before pregnancy (n=725)



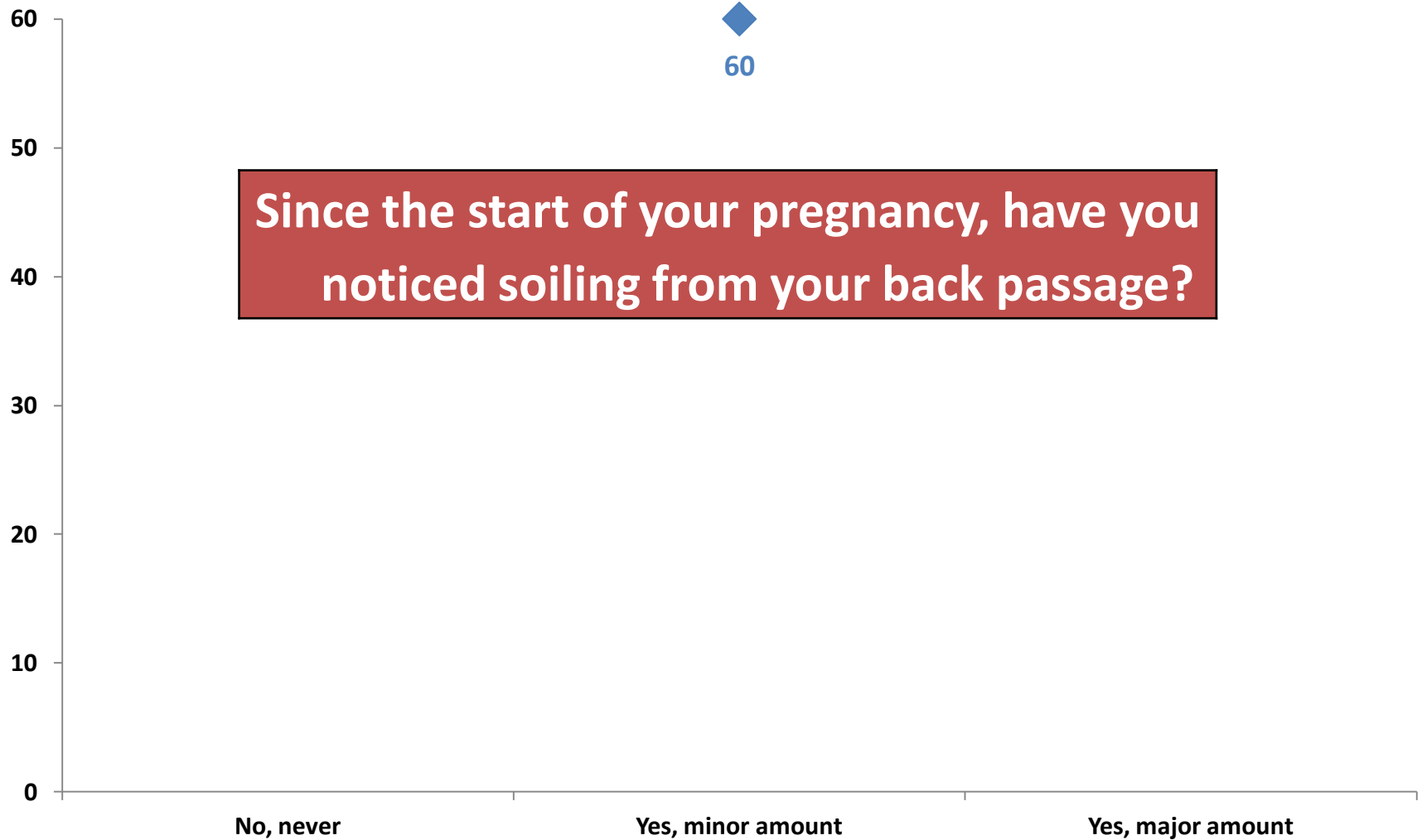


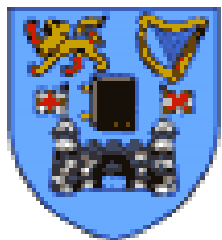
# Soiling before and during pregnancy (n=60)



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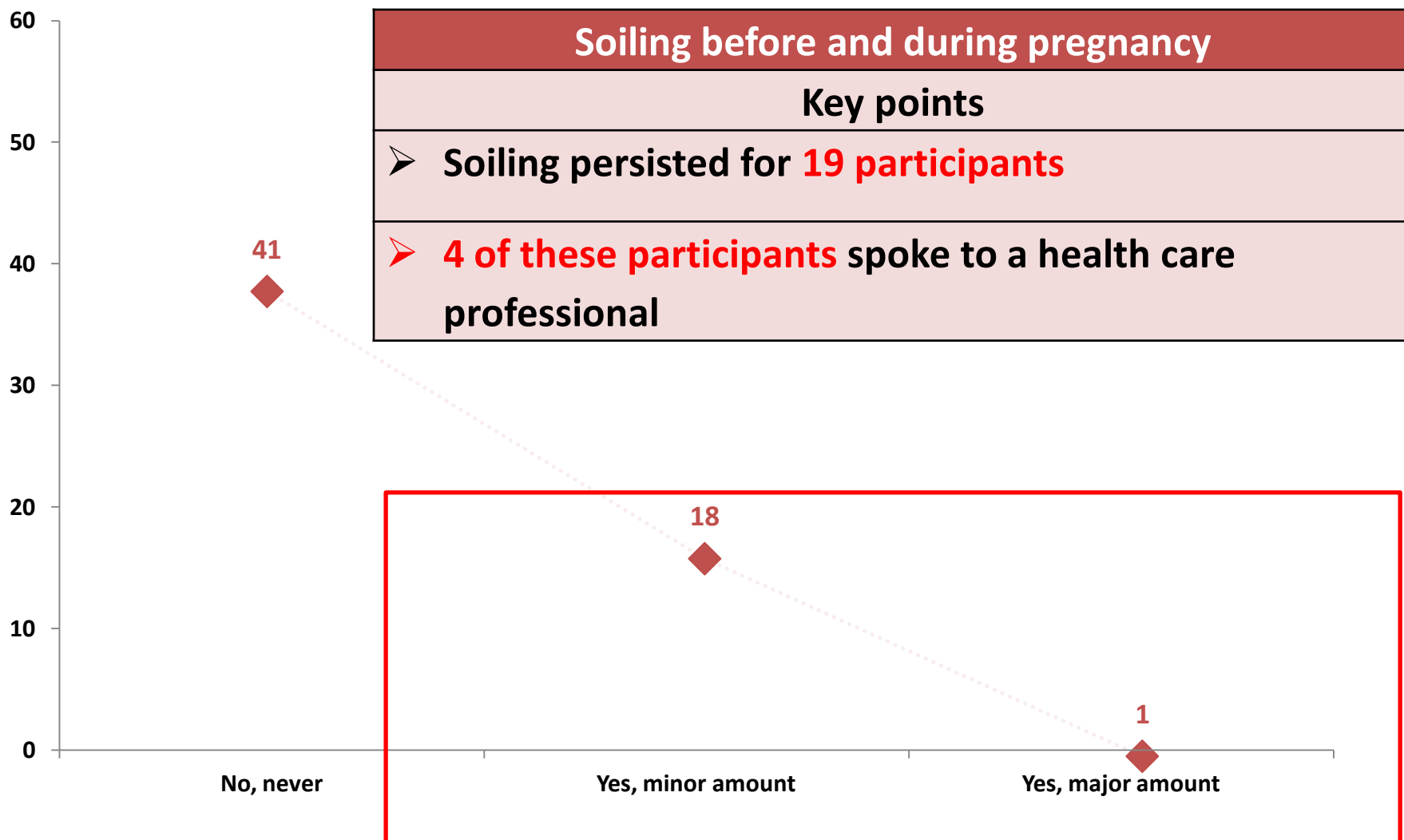


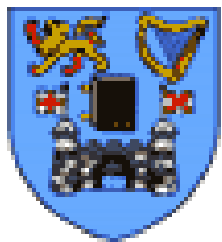


# Soiling before and during pregnancy (n=60)

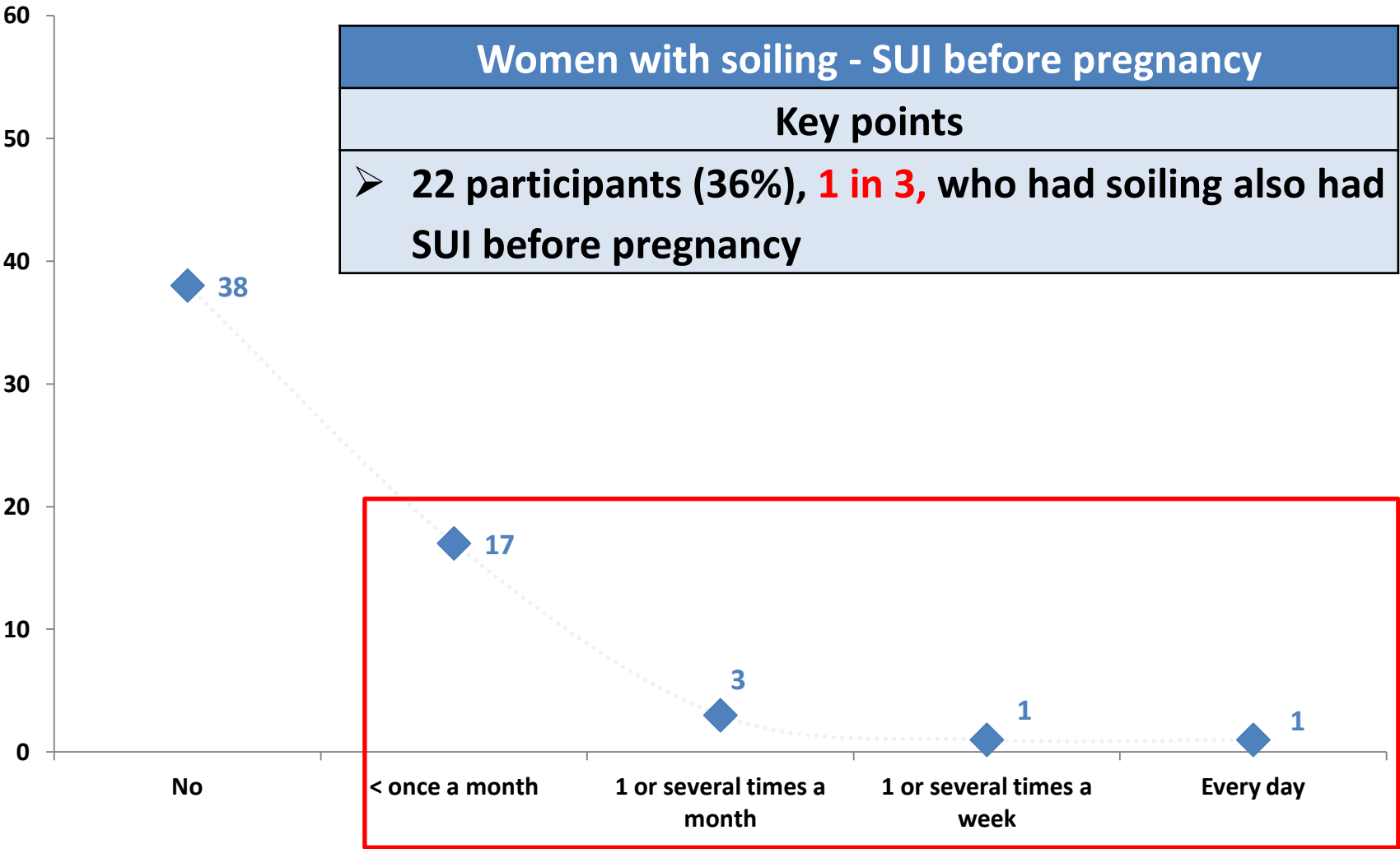


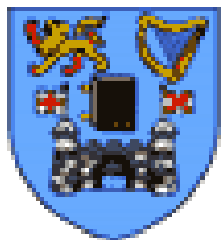
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# Soiling before pregnancy (n=60) and SUI

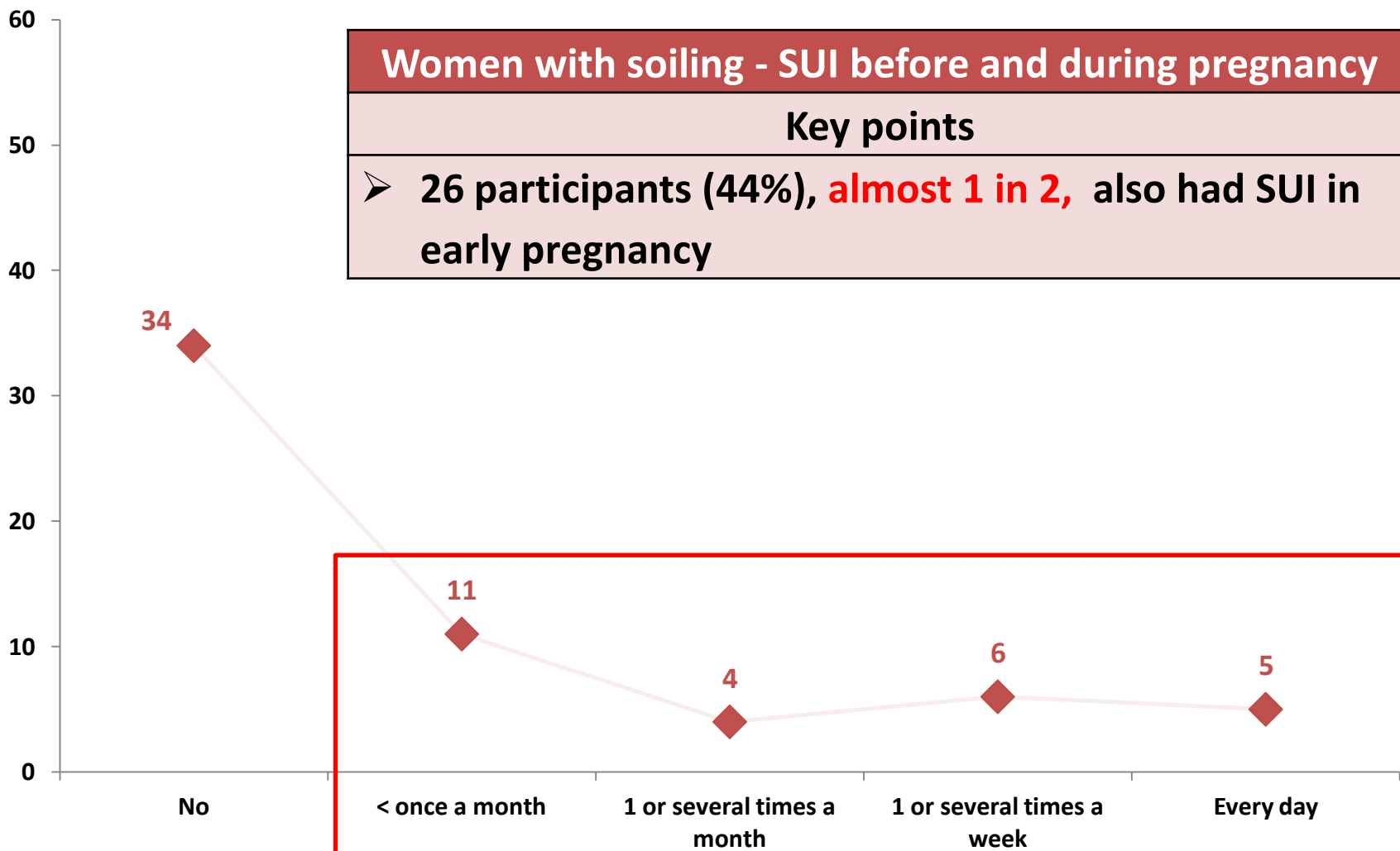


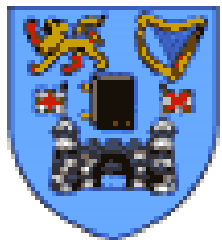


# Soiling before and during pregnancy (n=60) and SUI



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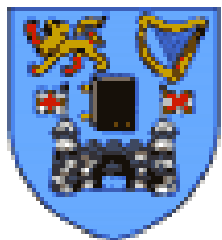
# So what can we learn from these data?



Interpret data with caution as these findings are **preliminary**



However,  
analysis of data from these 725 women show that...



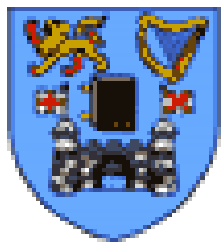
# So what can we learn from these data?

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- More than **1 in 5** participants experienced some degree of urinary incontinence before pregnancy
  - **Many did not talk to a healthcare professional**
- Almost **1 in 3** participants experienced some degree of urinary incontinence at start of pregnancy
  - **Again many did not talk to a healthcare professional**

Leaking urine before pregnancy
Key points
➤ 165 (22.8%) (1 in 5) participants experienced some degree of SUI before pregnancy
➤ 38 (5.2%) participants experienced SUI one or several times a month or more frequently
➤ <b>22 participants (3%) spoke to a healthcare professional</b>
Leaking urine in early pregnancy
Key points
➤ 242 (32.4%) (1 in 3) participants experienced SUI in early pregnancy
➤ <b>55 participants (8%) spoke to a healthcare professional</b>



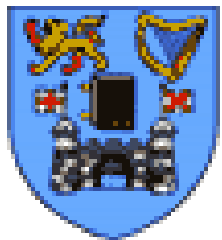


# So what can we learn from these data?

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- **One in 12 participants** experienced soiling before pregnancy and this persisted for almost 1 in 3 of these participants
  - **Again many did not talk to a healthcare professional**

Soiling before pregnancy	
Key points	
➤	60 participants (8.3%) experienced soiling (minor amounts) before pregnancy
➤	<b>9 participants (15%)</b> spoke to a healthcare professional about controlling bowel motions
Soiling before and during pregnancy	
Key points	
➤	Soiling persisted for 19/60 participants
➤	<b>4 of these participants</b> spoke to a health care professional

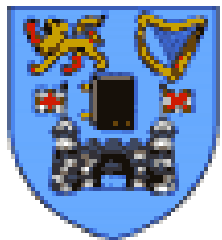


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# The relevance

- Women ***reporting occasional UI before pregnancy*** have ***raised odds*** of developing UI during pregnancy
  - Brown et al 2010
- Women ***who develop UI during the first pregnancy or puerperium*** have a ***significantly higher risk of UI 5 years later*** than women without UI symptoms
  - Viktrup & Lose 2000

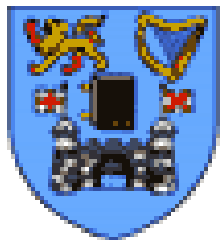


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# The message

Whilst UI & FI remains undisclosed and not discussed women who could become continent will continue to be incontinent



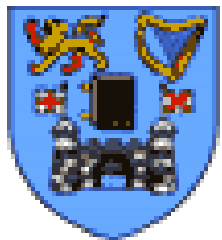
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# The final message

Whilst UI & FI remains undisclosed and not discussed women who could become continent will continue to be incontinent

**UI and FI are not normal and can be treated**



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# The MAMMI Study (UI Strand)

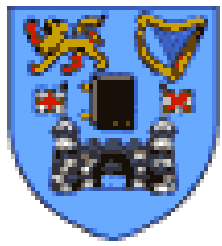


- **Future work**
  - **The MAMMI study** is ongoing
    - Sample size is 1600 (2000 with Galway site)
  - Detailed analyses are required before data are truly understood and statistical significance and associations are ascertained
    - Only then can modifiable factors be identified

<http://www.mammi.ie/>

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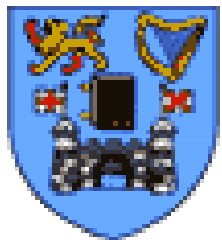


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# The MAMMI Study (UI Strand)



- **Sincerest thanks to**
  - **The women** (all women including those who are not taking part but who read the information)
  - The **midwives** and **midwifery students** and other **colleagues** who are supporting the MAMMI study
  - My supervisors **Professor Cecily Begley** and **Professor Mike Clarke**
  - My colleagues **Margaret Carroll, Deirdre O'Malley, Francesca Wuytack**
  - **Rebekah Maguire** and **Sophie Clare** who worked with us on the MAMMI study in summer 2012
  - The **Health Research Board (HRB)** for funding the MAMMI study (UI) strand
  - **Professor Stephanie Brown**, Murdoch Children's Research Institute, Australia for granting permission to use and modify surveys



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# The MAMMI Study (UI Strand)



**Thanks to the conference organizers and scientific committee for the opportunity to present**

<http://www.mammi.ie/>

Default position

