Thesis submitted for a
Master of Nursing (Research)
The University of Canberra
December, 2006

The MDOT Study:
Prevalence of Menstrual Disorder of Teenagers;
exploring typical menstruation, menstrual pain
(dysmenorrhoea), symptoms, PMS and endometriosis

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Abstract

There are few data available about the menstrual patterns of Australian teenagers and the prevalence of menstrual disorder in this age group.

Aims

- To establish the typical experience of menstruation in a sample of 16-18 year old women attending ACT Secondary Colleges of Education.
- To determine the number of teenagers experiencing menstrual disorder that could require further investigation and management.

Method

The MDOT questionnaire was used to survey participants about their usual pattern of menstruation, signs and symptoms experienced with menses and how menstruation affected various aspects of their lives including school attendance, completion of school work, relationships, social, sexual and physical activity. Data analysis included exploration of aggregated data, as well as individual scrutiny of each questionnaire to determine menstrual disturbance requiring follow up. Those participants whose questionnaire indicated a requirement for further investigation, and who consented to being contacted, were followed up through an MDOT Clinic.

Results

One thousand and fifty one (1,051) completed questionnaires - 98% response rate.

The typical experience of menstruation in the MDOT sample includes: bleeding patterns within normal parameters for this age group; menstrual pain, 94%; cramping pain, 71%; symptoms associated with menstruation, 98.4%; PMS symptoms, 96%; mood disturbance before or during periods, 73%; school absence related to menstruation, 26%; high menstrual interference on one or more life activity, 55.8%; asymptomatic menstruation, 1%; True response to 'My periods seem pretty normal' 71.4%.

Statistically significant associations were found between each and all of: menstrual pain, symptoms, interference on life activities and school absence. The prevalence of significant menstrual disturbance in the sample is approximately 25% where: 21% experienced severe pain; 26% reported school absence; 33% had seen a GP about periods; 26.9% think there is something wrong with periods; 23.5% require follow up based on individual scrutiny of each questionnaire; 10-14% require further
investigation to rule out endometriosis. Referral and investigation of menstrual pain, symptoms, and diagnosis of menstrual pathology in the sample was low.

**Conclusion**

The MDOT questionnaire has helped to establish a clearer picture of typical menstruation in the population sample. Where 1% of girls reported having asymptomatic menstruation, the majority of teenagers in the study reported menstrual pain and symptoms that could be experienced as part of the dysmenorrhoeic syndrome of symptoms, PMS, or underlying pathology such as endometriosis. Due to the overlap in symptoms and a propensity to be dismissive of menstrual pain and symptoms, many girls are suffering menstrual morbidities that could be well managed with NSAIDs and the oral contraceptive pill (OCP) if non-pathological, or investigated further if a menstrual pathology is suspected.

Considering these results the reported school absence rate of 26% is not surprising. Whilst this study does not cost the true impact of menstrual disturbance on schooling, the results of the MDOT questionnaire reflect significant physical and emotional impact on a considerable number of teenager’s lives which could also have repercussions on education, schooling performance and other areas of their lives. Future research is planned to determine the MDOT questionnaire’s validity for identifying pathological menstrual disorder so it can act as a screening tool to facilitate earlier detection. Replication of the MDOT study should be done in younger teenagers (from menarche) to determine menstrual disturbance in the younger age group.

Key words: menstrual pain, dysmenorrhoea, PMS, menstrual disorder, endometriosis, adolescence, teenagers, prevalence, screening tool.
Acknowledgements

I wish to thank the following participants, contributors and supporters of the MDOT study:

- **All the wonderful teenage women who responded to the MDOT questionnaire**
- The principals and teachers of the ACT government Secondary Colleges (senior high schools) who participated
- Dr Anne Sneddon – Staff specialist in Obstetrics and Gynaecology, the Canberra Hospital and ANU Medical School
- Professor Paul Arbon – Professor of Nursing (Population Health), Flinders University
- Dr Jan Taylor – Senior Lecturer, School of Nursing, University of Canberra
- David Pederson – Statistical Consultant, University of Canberra
- Michelle Cole, Robert Cook, Kasia Bail, Ann Marie Dunk and other colleagues from The Canberra Hospital and University of Canberra Research Centre for Nursing and Midwifery Practice
- Ms Ros Wood – President, Management Committee, Endometriosis Association Victoria
- My family, for understanding my passion and supporting me with their love, patience and belief in the importance of this research

Funding

The MDOT study was funded by the Australian Capital Territory Health, Health and Medical Research Support Program.

Dedication

This thesis is dedicated to all the teenagers and women around the world, diagnosed and undiagnosed, who suffer the pain and sequelae of menstrual disorder, in particular, endometriosis.
# Contents

ABSTRACT .......................................................................................................................... 2
APPROVALS .......................................................................................................................... 4
ACKNOWLEDGEMENTS ....................................................................................................... 5
  Funding ................................................................................................................................. 5
  Dedication ............................................................................................................................ 5
CONTENTS ............................................................................................................................ 6
LIST OF TABLES ................................................................................................................... 8
LIST OF FIGURES ................................................................................................................. 9
ABBREVIATIONS AND ACRONYMS .................................................................................... 10
CHAPTER 1: INTRODUCTION ............................................................................................... 11
  Human Development ........................................................................................................... 11
  What is the question? ........................................................................................................... 11
  Why this research? .............................................................................................................. 12
  Aims of the MDOT study ................................................................................................... 15
CHAPTER 2: LITERATURE REVIEW ..................................................................................... 16
  Introduction ......................................................................................................................... 16
  Menstruation ..................................................................................................................... 16
  Menstrual pain – normal or pathological? ........................................................................ 19
  PMS - Premenstrual Syndrome – normal or pathological? ............................................... 25
  Menstrual disorder ............................................................................................................ 27
  Endometriosis ................................................................................................................... 28
  Impact of menstrual pain, PMS and endometriosis on teenagers .................................... 37
  Benefits of early diagnosis and long term prognosis for teenagers with endometriosis ... 41
  Nursing Perspective ........................................................................................................... 42
  Summary ............................................................................................................................. 47
  Purpose of the MDOT Study .............................................................................................. 48
CHAPTER 3: METHOD ......................................................................................................... 49
  Introduction ......................................................................................................................... 49
  Research method and components ................................................................................... 49
  The Questionnaire ............................................................................................................. 54
  Method for contacting respondents who consented to follow up .................................... 58
  Ethics .................................................................................................................................. 59
  Summary ............................................................................................................................. 61
CHAPTER 5: RESULTS ......................................................................................................... 62
  Introduction ......................................................................................................................... 62
  Participation and response rates ....................................................................................... 62
  Representativeness of sample in the ACT ......................................................................... 63
  Survey results ................................................................................................................... 64
  Associations between menstrual bleeding patterns, pain, symptoms, interference, and school absence ............................................................................................................................................................................. 76
  Exploration of associations between short cycle length, menarcheal age and pain severity, school absence ............................................................................................................................................................................. 81
  Typical menstruation in MDOT sample ............................................................................ 82
  Individual menstrual picture (IMP) results ....................................................................... 83
  Respondent menstrual consent to be contacted ................................................................ 83
  Problematic menstruation ................................................................................................. 84
List of Tables

Table 1. Studies on menstrual pain and symptoms in teenagers .................. 23
Table 2. Questionnaire content ................................................................... 55
Table 3. Participation rate for questionnaire completion across the colleges ..... 62
Table 4. Female enrolments in government and non-government ACT secondary colleges/senior high schools .......................................................... 63
Table 5. Self-reported age at menarche ...................................................... 64
Table 6. Frequency of respondent menstrual bleeding for each day of menses ... 65
Table 7. Analgesic treatments used by respondents ...................................... 68
Table 8. List of menstrual symptoms ranked in order of frequency (percentage-wise) ................................................................. 69
Table 9. Frequency of reported PMS symptoms ........................................... 70
Table 10. Frequency of physical PMS Symptoms ........................................ 71
Table 11. Frequency of psycho-emotional PMS Symptoms .......................... 71
Table 12. Life activities listed in order (percentage-wise) from highest reported interference to lowest reported interference ........................................ 72
Table 13. Perceptions of normality regarding menstrual periods ................. 74
Table 14. Problematic menstruation: reported perceptions, consultation and investigation .................................................. 74
Table 15. Menstrual hygiene products used by teenagers ............................... 75
Table 16. People teenagers talk to about menstruation ................................. 75
Table 17. Teenage reports of moods experienced with menstruation .......... 75
Table 18. Respondent reports of mother/sister with period problems ............ 76
Table 19. Crosstabulation of levels of menstrual pain with school absence due to menstruation ........................................................................ 77
Table 20. Association between menstrual pain and menstrual interference on life activities ................................................................. 78
Table 21. Respondent follow up matched to respondent consent .................. 83
List of Figures

Figure 1. Response Rate ................................................................. 63
Figure 2. Frequency of light, medium and heavy bleeding across menstrual bleeding days ................................................................. 66
Figure 3. Aspects of menstruation that cause interference with life activities.... 73
Figure 4. Association between mean interference of menstruation on life activities and the three pain categories .......................................................... 78
Figure 5. Association between mean number of menstrual symptoms reported and school absence due to menstruation ................................................................. 79
Figure 6. Association between menstrual interference on life activities and school absence due to menstruation ................................................................. 81
## Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACOG</td>
<td>American College of Obstetricians and Gynecologists</td>
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<td>ACT</td>
<td>Australian Capital Territory</td>
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<tr>
<td>AUB</td>
<td>Abnormal uterine bleeding</td>
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<td>CPP</td>
<td>Chronic pelvic pain</td>
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<td>DOB</td>
<td>Date of birth</td>
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<td>GP</td>
<td>General practitioner</td>
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<td>HRQL</td>
<td>Health related quality of life</td>
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<td>IMP</td>
<td>Individual menstrual picture</td>
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<td>MDOT</td>
<td>Menstrual disturbance of teenagers</td>
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<tr>
<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
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<td>OCP</td>
<td>Oral contraceptive pill</td>
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<td>Polycystic ovarian syndrome</td>
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<td>PID</td>
<td>Pelvic inflammatory disease</td>
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<td>PMS</td>
<td>Premenstrual syndrome</td>
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<td>PMT</td>
<td>Premenstrual tension</td>
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<tr>
<td>SES</td>
<td>Socio-economic status</td>
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