

Why women consult with increased vaginal bleeding: a case-control study

Mark Shapley, Kelvin Jordan and Peter R Croft

SUMMARY

Background: Many women with heavy periods and irregular bleeding do not consult about them. It has been suggested that some of these symptoms are associated with psychological distress and that this influences consultation behaviour, which may account for why some women present with a menstrual disturbance and others with apparently the same problem do not.

Aim: To explore the relationship between symptom severity, psychological distress, and the seeking of medical help in primary care among women aged 54 years or less with increased vaginal bleeding.

Design of study: Case control.

Setting: An urban four-partner general practice of 10 000 patients.

Method: Questionnaires were sent to women who were consulting with new episodes of 'increased vaginal bleeding' and two groups of controls: consulting controls with 'acute respiratory tract infection' (RTI) or 'other illness' as identified by weekly computerised searches; and community controls, selected from the practice age-sex register.

Results: Nine hundred and forty-three questionnaires were sent out to 108 cases and 835 controls with an 80% response rate. Of these, 60.9% of the cases, 47.0% of the consulting controls, and 39.7% of the community controls were subjects with probable psychological distress on the General Health Questionnaire (χ^2 test, $P = 0.002$). Cases were more likely than community controls to have heavy periods (odds ratio [OR] = 2.86, 95% confidence interval [CI] = 1.53–5.35) and heavy periods interfering with life (OR = 3.69, 95% CI = 2.02–6.75). After controlling for heaviness of periods, cases were still more likely to have psychological distress (OR = 1.80, 95% CI = 1.00–3.24). The same relationships prevailed when comparing cases and consulting controls.

Conclusion: Interference in life caused by heaviness of periods appears to be a powerful initiator of consultation with increased vaginal bleeding. Perceived heavy periods and psychological disturbance are weaker predictors. Women presenting to primary care with increased vaginal bleeding are more likely to have a psychological disturbance than women from the community or those consulting with another illness.

Keywords: vaginal bleeding; consultation behaviour.

Introduction

SELF-REPORTED heavy periods and 'abnormal menstrual' bleeding patterns are common in the community;¹⁻³ however, many women with these symptoms do not consult about them. One survey found that 22% of menstruating women aged 35 years and over reported that heavy periods interfere with their life. However, only 7% of these women had consulted their doctor about them in the previous six months.¹ This corresponds with the consultation rate in primary care for 'disorders of menstruation and other abnormal bleeding from the female genital tract' based on general practitioner (GP) records of 5.8% of women per year in the age range 25 to 64 years.⁴

Community studies have suggested that some symptoms of increased vaginal bleeding are associated with aspects of psychiatric morbidity and certain personality traits.^{1,5,6} Limited studies within primary care^{7,8} and more extensive studies in hospital clinics⁹⁻¹⁷ have tended to confirm this and have also suggested an association with stressful life events.^{8,12} It has been proposed that psychological distress influences consultation behaviour¹² and may be a reason why some women present with a menstrual disturbance and others with apparently the same problem do not.

The influence of non-physical determinants on consultation is also suggested by the fact that women who report menorrhagia in the community or at hospital clinics do not necessarily have excessive blood loss on objective assessment.^{2,18} In a hospital gynaecology clinic, if a woman is a 'probable psychiatric case', she is less likely to have organic pathology underlying the menstrual complaint.^{9,11}

However, the association between the complaint of increased vaginal bleeding and psychiatric symptomatology is controversial and some studies in primary care^{19,20} contradict the association. One qualitative study¹⁹ suggested that presentation with heavy periods is usually owing to changes in heaviness, effect on quality of life, and an underlying ambivalence about the nature of period problems. In another study, a high score on the Hospital Anxiety and Depression scale was not a predictor for subsequent presentation in primary care with an episode of increased vaginal bleeding.²⁰

The purpose of this study was to explore the relationship between symptom severity, psychological distress, and the seeking of medical help in primary care in women with increased vaginal bleeding.

Method

The study took place in a four-partner urban practice with a total registered population of 10 000 patients. The practice records all consultations on a computerised database (ViSion) and submits data to the Royal College of General

M Shapley, MA, FRCGP, general practitioner and research fellow; K Jordan, PhD, statistician; and P R Croft, MD, MRCGP, professor of epidemiology, Primary Care Sciences Research Centre, Keele University, Staffordshire.

Address for correspondence

Dr Mark Shapley, Primary Care Sciences Research Centre, Keele University, Staffordshire ST5 5BG.

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HOW THIS FITS IN

What do we know?

There is an association between psychological status and reported heaviness of periods in the community and in hospital clinics. Studies on status at presentation in primary care are lacking.

What does this paper add?

The strongest factor in initiating consultation with increased vaginal bleeding is interference in life from heaviness of periods. The self-reporting of heavy periods has a weaker effect and psychological distress a much weaker effect. These are independent of propensity to consult. Women at presentation to primary care with increased vaginal bleeding are more likely to have psychological distress than women in the community or women presenting with a respiratory tract infection or 'other illness'.



Practitioners Weekly Returns Service. All data entries have an associated Read code (a hierarchical coding system of morbidity and practice activity used in the UK comparable to the International Classification of Diseases.²¹).

The method was a case-control study. Cases were women consulting with 'increased vaginal bleeding'. Two control groups were chosen to investigate any confounding effect of consulting behaviour which is known to be associated with psychological distress and the reporting of symptoms.²² The two sets of control patients were non-consulting controls and consulting controls who attended because of 'acute respiratory tract infection' (RTI) or 'other illness'. All consulting groups (cases and consulting controls) were identified by computerised searches conducted weekly, over a study period of 15 months.

Cases of increased vaginal bleeding were defined as all women aged 18 to 54 years who presented to a doctor or practice nurse in the study period with one of 15 Read codes or their 'daughter' codes, shown in Table 1. These codes did not include any that were related to pregnancy or postmenopausal bleeding.

Consulting controls with RTI were defined as all women aged 16 to 54 years who presented to a doctor or practice nurse in the study period with one of three Read codes or their daughter codes, shown in Table 1. Consulting controls with 'other illness' were defined as all women aged 16 to 54 years who presented to a doctor or practice nurse in the study period with an episode of 'other illness', defined as a group of conditions selected to exclude mental illness, infectious disease, gynaecological conditions, pregnancy and pregnancy-related conditions, and 'process of medicine' terms. Fifteen Read codes or their daughter codes as shown in Table 1 were used for this group.

Consulting controls were not matched by age with cases since all such consultants were needed within the study period. Age confounding was dealt with at the analysis stage.

The purpose of the study was to determine influences on presentation to primary care and therefore only patients with

Table 1. Read codes used in computerised searches.

Description	Read five-byte code
Read term: 'increased vaginal bleeding'	
Menstrual loss increasing	151C.
Length of cycle decreasing	151G.
H/O: polymenorrhoea	1572.
H/O: menorrhagia	1573.
H/O: abnormal uterine bleeding	158..
Excessive or frequent menstruation	K592.
Irregular menstrual cycle NOS	K594z
Ovulation bleeding	K595.
Metrorrhagia	K596.
Post-coital bleeding	K597.
Intermenstrual bleeding	K59y3
Dysfunctional uterine haemorrhage NOS	K59yx
Functional uterine haemorrhage NOS	K59yy
Premenopausal menorrhagia	K5A0.
Other abnormal uterine and vaginal bleeding	K5E..
Read term: 'acute respiratory tract infection'	
Streptococcal sore throat plus scarlatina	A34..
Acute respiratory infections	H0...
Pneumonia and influenza	H2...
Read term: 'other illness'	
Multiple sclerosis	F20..
Migraine	F26..
Ischaemic heart disease	G3...
Cerebrovascular disease	G6...
Chronic obstructive pulmonary disease	H3...
Oesophageal, stomach, and duodenal diseases	J1...
Non-infectious enteritis and colitis	J4...
Irritable colon — irritable bowel syndrome	J521.
Cirrhosis and chronic liver disease	J61..
Intestinal malabsorption	J69..
Nephritis, nephrosis, and nephrotic syndrome	K0...
Other skin and subcutaneous tissue inflammatory conditions	M1...
Arthropathies and related disorders	N0...
Vertebral column syndromes	N1...
Peripheral enthesopathies and allied syndromes	N21..

first or new episodes of illness were recruited. To exclude follow-up consultations for increased vaginal bleeding, a first or new episode was defined as no consultation with one of the increased vaginal bleeding Read codes in the previous year. For RTI the appropriate timeframe was defined as no consultation in the previous six weeks with an RTI code. For 'other illness' the definition was no consultation with a Read code within the same chapter of the identified 'other illness' chapter in the previous three months.

Each case of increased vaginal bleeding was matched by age within five years (age range = 16 to 54 years) to four controls randomly selected from the practice age-sex register at the time the case was identified. These constituted the non-consulting controls.

The full age range for potential controls could have been 13 to 59 years; however, a lower limit of 16 years was set for ethical reasons and an upper boundary of 54 years to match the perimenopausal status of the cases.

For all groups of cases and controls, women were excluded if their medical records showed a consultation with an increased vaginal bleeding Read code in the year prior to

the index code, or who were currently pregnant or had ever had a hysterectomy. In addition they were excluded if they had had a gynaecological operation or had been pregnant within the three months prior to the index consultation. Once a woman was entered into the study, she was excluded from further selection into any of the groups.

All women were sent a menstruation questionnaire. The two main instruments used in the questionnaire — the 20-question General Health Questionnaire (GHQ)^{23,24} and the Women's Perception of the Heaviness of her Menstruation¹ — have been validated and used in previous studies. In addition to these, the menstruation questionnaire enquired about social status, race, parity, and reasons why the woman did or did not consult. The questionnaire was piloted prior to the study.

Women in any group who reported on their questionnaire that they had not had a 'period' in the previous six months were excluded. Women were categorised on the basis of their perception of the heaviness of their menstruation into 'heavy' (women who replied to the question 'over the past six months how do you regard your periods?' with the terms 'fairly heavy', 'very heavy' or 'variable') or 'non-heavy' (women who replied to the same question with the terms 'very light', 'fairly light' or 'neither heavy nor light').

The GHQ is a self-administered screening instrument designed to detect current, diagnosable psychiatric disorders. A subject is said to be a 'probable psychiatric case' if they score above the cut-off point determining a 50% probability of being a psychiatric case on detailed diagnostic tests involving interview.^{23,24} The GHQ was scored by the standard method and the standard cut-off point of greater than or equal to 4 for a 'probable psychiatric case' was used as a measure of psychological distress within the groups.

Non-responders were sent a second questionnaire after two weeks and, if they then failed to respond, were contacted by telephone (three attempts at contact) if they had a number in the medical records or telephone directory.

Responders who only partially completed the questionnaire were also contacted by telephone (three attempts) or, if they did not have a telephone, a photocopy of the missing items was sent to them. However if questions were incomplete on the GHQ then these were coded as zero scoring unless fewer than half of the items were completed, in which case the subjects were excluded.

Data was analysed using SPSS 9.0 for Windows and Stata 6.0 for Windows. Odds ratios for consulting with increased vaginal bleeding associated with heaviness of periods, heaviness of periods interfering with life, and GHQ score compared with non-consulting controls were computed by conditional logistic regression and adjusted for confounding variables. As the consulting controls were not age matched to the cases of increased vaginal bleeding, odds ratios for consulting with increased vaginal bleeding associated with heaviness of periods interfering with life, heaviness of periods, and GHQ score compared with consulting controls, were computed by unconditional logistic regression and again adjusted for confounding variables.

Results

A total of 943 questionnaires were sent out to 108 cases and 835 controls. The number of women who replied was 753, giving a response rate of 80%. Three women were excluded because less than half of their GHQ was completed. One hundred and five women reported that they had not had a period in the previous six months and this included two of the 89 increased vaginal bleeding group. These were excluded and the study population therefore consisted of 645 patients. There were 87 cases, 296 consulting controls, and 262 non-consulting controls (Table 2).

Consulting controls were slightly younger than cases (mean age of cases = 37.9 years, standard deviation (SD) = 9.85; mean age of consulting controls = 35.2 years, SD = 10.22; $P = 0.026$). The matched cases and non-consulting controls were of similar age (mean age of non-consulting controls = 36.5 years, SD = 9.54). There was a significant difference in the proportion of the increased vaginal bleeding cases who perceived their periods to be heavy ($P < 0.001$) compared with both the consulting and non-consulting controls. There was also a higher proportion of increased vaginal bleeding cases who said that the heaviness of their periods interferes with their life ($P < 0.001$) compared with the consulting and non-consulting controls. In the increased vaginal bleeding cases, 60.9% scored 4 or more on the GHQ, compared with 47.0% in the consulting controls and 39.7% in the non-consulting controls (χ^2 test, $P = 0.002$, Table 2).

The likelihood of a woman consulting with increased vaginal bleeding compared with the non-consulting community

Table 2. Heaviness of period and GHQ scores. (Figures in brackets are percentage of total in group)

	Cases	Controls		Total
		Consulting	Non-consulting	
<i>n</i>	87	296	262	645
Heaviness of period				
Non-heavy	20 (23.0)	131 (44.3)	128 (48.9)	279 (43.3)
Heavy	67 (77.0)	165 (55.7)	134 (51.1)	366 (56.7)
Periods interfere with life				
Yes	46 (52.9)	79 (26.8) ^a	61 (23.3)	186 (28.9) ^a
No	41 (47.1)	216 (73.2) ^a	201 (76.7)	458 (71.1) ^a
Total with GHQ ≥ 4	53 (60.9)	139 (47.0)	104 (39.7)	296 (45.9)
Total with GHQ < 4	34 (39.1)	157 (53.0)	158 (60.3)	349 (54.1)

^aOne woman in the RTI group did not answer the question concerning heaviness of periods interfering with life.

group and the effect of perceived heaviness of periods interfering with life, heaviness of periods, and psychological distress on the GHQ is given in Table 3. All models in this table give differences after adjusting for age, marital and work status, and parity.

Analysis with 'heaviness of periods interferes with life' as the only predictor variable is shown as Model 1 in Table 3. The figures suggest that if a woman perceives that the heaviness of her periods interferes with her life then she is over three-and-a-half times more likely to be a consulter with increased vaginal bleeding than a woman who says that the heaviness of her periods does not interfere with her life.

Analysis with 'heaviness of periods' as the only predictor variable is shown as Model 2 in Table 3. Women who report heavy periods are over two-and-a-half times more likely to consult with increased vaginal bleeding than those who report non-heavy periods.

Analysis with GHQ score ≥ 4 as the only predictor variable is shown as Model 3 in Table 3. Women who report probable psychological distress are over twice as likely to consult with increased vaginal bleeding than those without probable psychological distress.

Multivariate analysis in Models 4 and 5 in Table 3 uses each of the two menstruation variables (heaviness, interference with life) separately adjusted for psychological distress in each model. 'Heaviness of periods interferes with life' was not included in the same model as heavy periods because of a high correlation between the two. There was no substantial change in the odds ratio from the models without GHQ scores (Models 1 and 2), which suggests that 'heavy bleeding' and 'heavy bleeding interferes with life' still have an independent effect on consulting with increased vaginal bleeding even when controlling for any association with psychological distress. There is a weaker effect of psychological distress when controlling for any association with each of the other two variables but the confidence intervals include unity. These results suggest that interference with life from heavy periods and heavy periods are strongly associated with consultation for increased vaginal bleeding and that psychological distress has a weaker (and statistically insignificant) effect.

Those who perceive their periods to be heavy and have a GHQ score of 4 or more are 4.4 times more likely to consult than someone perceiving non-heavy periods and a GHQ score of less than 4. However, the interaction term for GHQ score and heaviness of periods was not significant.

The analysis in Table 4 with the same modelling but using the consulting control group shows similar relationships to those found with the non-consulting controls. This suggests that consulting behaviour does not account for differences between increased vaginal bleeding consulters and non-consulting controls.

Re-classifying the women who perceived the heaviness of their periods as 'variable' from the heavy group to the non-heavy group makes no significant difference to the results of the analyses.

Discussion

We have found evidence that the main difference between women who consult with increased vaginal bleeding and non-consulting controls is that the heaviness of periods is interfering with their lives. Responders stating that their periods interfere with their life are more than three times more likely to consult about them. Those women who perceive heavy periods as opposed to non-heavy periods are over twice as likely to consult with increased vaginal bleeding. However there is also evidence that, even when controlling for heavy periods or their interference with life, those women who have probable psychological distress are nearly one-and-a-half times as likely to consult with increased vaginal bleeding. These relationships appear to be independent of consulting behaviour, as the effects persist and are of similar magnitude when comparing increased vaginal bleeding cases with the consulting controls.

It is possible that selection bias occurred, as clinicians were not blinded to the study. If women with increased vaginal bleeding were given alternative psychological codes then this would underestimate the risk for psychological distress. If menstrual symptoms were enquired about when they might not previously have been then this would underestimate the risk for interference in life from heavy periods. The effect on the risk for psychological distress would vary

Table 3. Differences between cases of increased vaginal bleeding and non-consulting community controls in relation to heaviness of periods interfering with life, heaviness of periods, and GHQ score. Adjusting for age, work status, marital status and parity in all models.

Model	Number (%) cases	Number (%) non-consulting controls	OR (95% CI)
1 Heaviness of periods interferes with life	46 (52.9)	61 (23.2)	3.69 (2.02–6.75)
Heaviness of periods does not interfere with life	41 (47.1)	201 (76.7)	1.00
2 Heavy periods	67 (77.0)	134 (51.1)	2.86 (1.53–5.35)
Non-heavy periods	20 (23.0)	128 (48.9)	1.00
3 GHQ score ≥ 4	53 (60.9)	104 (39.7)	2.14 (1.22–3.78)
GHQ score < 4	34 (39.1)	158 (60.3)	1.00
4 Heaviness of periods interferes with life	46 (52.9)	61 (23.2)	3.25 (1.72–6.14)
Heaviness of periods does not interfere with life	41 (47.1)	201 (76.7)	1.00
GHQ score ≥ 4	53 (60.9)	104 (39.7)	1.48 (0.80–2.73)
GHQ score < 4	34 (39.1)	158 (60.3)	1.00
5 Heavy periods	67 (77.0)	134 (51.1)	2.57 (1.35–4.88)
Non-heavy periods	20 (23.0)	128 (48.9)	1.00
GHQ score ≥ 4	53 (60.9)	104 (39.7)	1.80 (1.00–3.24)
GHQ score < 4	34 (39.1)	158 (60.3)	1.00

Table 4. Differences between cases of increased vaginal bleeding and consulting controls in relation to heaviness of periods interfering with life, heaviness of periods and GHQ score. Adjusting for age, work status, marital status and parity in all models.

Model	Number (%) cases	Number (%) consulting controls	OR (95% CI)
1 Heaviness of periods interferes with life	46 (52.9)	79 (26.7)	3.45 (2.06–5.77)
Heaviness of periods does not interfere with life	41 (47.1)	216 (73.2)	1.00
2 Heavy periods	67 (77.0)	165 (55.7)	2.68 (1.51–4.76)
Non-heavy periods	20 (23.0)	131 (44.3)	1.00
3 GHQ score ≥ 4	53 (60.9)	139 (47.0)	1.65 (1.00–2.72)
GHQ score < 4	34 (39.1)	157 (53.0)	1.00
4 Heaviness of periods interferes with life	46 (52.9)	79 (26.7)	3.26 (1.92–5.54)
Heaviness of periods does not interfere with life	41 (47.1)	216 (73.2)	1.00
GHQ score ≥ 4	53 (60.9)	139 (47.0)	1.26 (0.74–2.13)
GHQ score < 4	34 (39.1)	157 (53.0)	1.00
5 Heavy periods	67 (77.0)	165 (55.7)	2.52 (1.41–4.49)
Non-heavy periods	20 (23.0)	131 (44.3)	1.00
GHQ score ≥ 4	53 (60.9)	139 (47.0)	1.43 (0.85–2.38)
GHQ score < 4	34 (39.1)	157 (53.0)	1.00

with the clinical situation and may give an under or overestimate. It seems unlikely that clinician bias can explain the strong associations observed in this study.

Another possible selection bias was that chronic or follow-up consultations were inappropriately recruited owing to coding errors or an inadequate exclusion time. We estimate that the effect would be to increase the level of psychological distress in the consulting control group. We therefore investigated this potential problem by comparing acute illness consulters (RTI controls) with 'other illness' controls. A lack of bias is suggested by the fact that there was no difference in the proportion with psychological distress between these two groups (RTI = 46.7%, 'other illness' = 47.2%).

One of the difficulties in comparing studies on menstrual symptoms and psychological status is that they differ in case definition and methods of assessment. In this study, all the cases had the clinician's diagnosis of increased vaginal bleeding and 77% of the cases self-reported heavy periods. The proportion of cases who had evidence of psychological distress was identical in those who described their periods as heavy compared with non-heavy.

The relationship between menorrhagia and psychological status has several possible explanations.¹² Menorrhagia may cause depression and consultation with menorrhagia; depression may cause menorrhagia through a physical mechanism giving consultation with menorrhagia; or depression may result in increased bodily awareness resulting in consultation with a physical complaint rather than a mental disorder. The results of this study are not consistent with the latter hypothesis, which would predict that the levels of psychological distress would have been equal in cases and consulting controls.

Heavy periods were associated with psychological distress in this study even when a woman had not consulted or had consulted with another symptom.

While psychological distress is associated with consultation for increased vaginal bleeding, the effect is weaker than the self-reporting of heavy periods. However, both are weaker than the association with the report of interference in life from the heaviness of periods. Clinicians should focus on

alleviating the way that symptoms interfere with a woman's life as the goal of therapy. This suggests a limited role for the objective assessment of blood loss in primary care.²⁵ Increased vaginal bleeding is an important problem, as it appears to have a potent effect on a woman's overall well-being.

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