Williams Emily (Orcid ID: 0000-0002-9399-1960)
Whitaker Katriina (Orcid ID: 0000-0002-0947-1840)
Marlow Laura (Orcid ID: 0000-0003-1709-2397)

Ethnic differences in barriers to symptomatic presentation in primary care: A survey of women in England

Running title: Ethnic differences in symptomatic presentation

Emily D.Williams,[1] Katriina L. Whitaker,[1] Marianne Piano,[1] Laura A.V. Marlow[2*]

[1] School of Health Sciences, University of Surrey, UK.

[2] Department of Behavioural Science and Health, University College London, UK.

*Corresponding author: LAV Marlow, Department of Behavioural Science and Health, University College London, Gower Street, London, WC1E 6BT, 020 7679 1720, l.marlow@ucl.ac.uk

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ABSTRACT

Objective: The majority of cancers are diagnosed following a decision to access medical help for symptoms. People from ethnic minority backgrounds have longer patient intervals following identification of cancer symptoms. This study quantified ethnic differences in barriers to symptomatic presentation including culturally-specific barriers. Correlates of barriers (e.g. migration status, health literacy and fatalism) were also explored.

Methods: A cross-sectional survey of 720 White British, Caribbean, African, Indian, Pakistani and Bangladeshi women aged 30-60 (n=120/group) was carried out in England. Barrier items were taken from the widely-used Cancer Awareness Measure; additional culturally-specific barriers to symptomatic presentation were included following qualitative work (11 in total). Migration status, health literacy and fatalism were included as correlates to help-seeking barriers.

Results: Ethnic minority women reported a higher number of barriers (p<0.001, 2.6-3.8 more than White British women). Emotional barriers were particularly prominent. Women from ethnic minority groups were more likely to report 'praying about a symptom' (p<0.001,except Bangladeshi women) and 'using traditional remedies' (p<0.001,except Caribbean women). Among ethnic minority women, adult migration to the UK, low health literacy and high fatalistic beliefs increased likelihood of reporting barriers to symptomatic presentation. For example, women who migrated as adults were more likely to be embarrassed (OR=1.83,CI:1.06-3.15), worry what GP might find (OR=1.91,CI:1.12-3.26) and be low on body vigilance (OR=4.44,CI:2.72-7.23).

Conclusions: Campaigns addressing barriers to symptomatic presentation among ethnic minority women should be designed to reach low health literacy populations and include messages challenging fatalistic views. These would be valuable for reducing ethnic inequalities in cancer outcomes.

Keywords: Cancer; Early diagnosis; Ethnicity; General practice; Symptomatic presentation; Barriers.

BACKGROUND

The majority of cancers are diagnosed following a decision to access medical help for symptoms,[1] and shortening the time from noticing a bodily change to making an appointment with the doctor (defined as the patient interval)[2] is key to improving earlier cancer diagnosis and thus cancer outcomes.[3] Men and women from ethnic minority backgrounds have poorer outcomes for many cancer types,[4] and longer patient intervals following identification of cancer symptoms. The growing size and increasing age of the ethnic minority population,[5] alongside evidence of inequalities in cancer outcomes provides an impetus to investigate possible explanations for these differences.

Previous studies suggest that men and women from ethnic minority backgrounds report more practical and logistical barriers to help-seeking[6] and people from South Asian backgrounds report more emotional barriers.[7,8] However, the research has been purely descriptive[6] or limited by omitting key variables such as migration status and health literacy.[8] In addition, there seems to be an the intersectionality of gender and ethnicity[6] and focusing on men and women separately will likely provide a less distorted picture. Qualitative evidence with women from ethnic minority backgrounds suggests additional factors, not captured by previous quantitative studies, that might prolong the patient interval to help-seeking.[9] For example, praying and seeking alternative medicine and/or traditional remedies before considering contacting the doctor with potential cancer symptoms, were mentioned by women from Black and South Asian backgrounds.[9,10] The importance of paying attention to one's body (body vigilance) has also been identified as a precursor to help-seeking for potential cancer symptoms,[11,12] However, there has been no research to explore ethnic variation in body vigilance. Understanding barriers to accessing healthcare provides an opportunity to reduce inequality in access, through appropriately tailored interventions.[13,14]

This study explored a range of barriers to symptomatic presentation in women from six different ethnic groups in England including culturally-specific barriers related to self-management and body vigilance. We also explored key variables (migration status, health literacy, perceived discrimination and fatalism) that were highlighted as possible correlates of barriers to symptomatic presentation among ethnic minority women in qualitative work carried out prior to questionnaire development.

MATERIAL AND METHODS

Design

A cross-sectional survey of women aged 30-60 years was conducted in June 2014 to assess attitudes to cancer, cancer screening and help-seeking. The present study reports on barriers to symptomatic presentation assessed towards the beginning of the survey without reference to cancer. In England, the ethnic minority population includes anyone who self-identifies as being from an ethnic group other than White;[15] while this population is extremely diverse, just over half are represented within five ethnic groups: Indian, Pakistani, Bangladeshi, African and Caribbean. We recruited women from these five ethnic minority backgrounds, and also from White British backgrounds (for comparison).

Sampling

Data were collected by Ethnic Focus, a market research company focusing on recruiting ethnic minorities (http://www.ethnicfocus.com). Ethnic Focus were commissioned to recruit 120 women from each ethnic group. Sampling points (n=35) were randomly selected from a complete list of postcode sectors in England based on census information and a database of postcode districts. This was then inspected by the market research company to ensure they represented areas where at least 5% of residents were from ethnic minority populations and that high, medium and low concentrations of ethnic minority residents were represented. Multilingual interviewers visited properties in selected sampling points. If eligible, participants were interviewed on the day, or the interviewer made three attempts to interview them before they were considered a non-responder. At the time of data collection the study was considered exempt from needing ethical approval under UCL Research Ethics Committee guidelines. Ethnic Focus collected and recorded informed consent prior to interviews.

Materials

Data were collected by the multilingual interviewer using a paper questionnaire. Items that assessed barriers to symptomatic presentation and potential correlates of help-seeking were developed following qualitative work[9] and discussion through patient and public involvement. Questionnaires were provided in the six most common languages spoken by target ethnic groups. If another

language was spoken the interviewer verbally translated. Questionnaire development and piloting is described elsewhere.[16]

Measures

Questionnaire items can be found in Appendix 1. Participants were asked to indicate how much they agreed with 11 items designed to assess barriers to symptomatic presentation in primary care. Most of these items were adapted from the Cancer Awareness Measure (CAM),[17] with additional items added following qualitative research with ethnic minority women.[9] These items were designed to capture emotional barriers, practical and service barriers, barriers associated with self-management and body vigilance. A total score for barriers to symptomatic presentation was created by summing the eleven items (range: 0-11).

Migration status was determined using women's year of arrival in the UK and current age, recoding this as: born in UK; migrated <18 years old or migrated ≥18 years old.

Spoken and written health literacy was assessed using single items, adapted from the European Health Literacy Project.[18] A single item assessed individuals' personal experience of racial discrimination by a health professional. This item was adapted from previous work in New Zealand.[19,20]

General fatalism, the belief that life events are determined by fate, was measured using a four-item scale,[21] used previously in cancer-related studies.[22,23] Fatalism scores were categorised into high and low based on the median of overall sample (scores⩾9 indicated high fatalism, scores<9 indicated low fatalism).

Statistical analysis

To examine ethnic group differences in barriers to symptomatic presentation, logistic regression analyses were conducted on dichotomised help-seeking variables, with White British women as the reference category. Total number of barriers was compared across ethnic groups using analyses of covariance. Analyses were adjusted for age, education and marital status.

We explored correlates of barriers within the ethnic minority sample (i.e. excluding White British women). Separate logistic regression analyses were carried out for each barrier. Analyses were adjusted for age, education, marital status and ethnicity (with Caribbean group as the reference category). Perceived racism was not included as a correlate due to a lack of variation. All analyses were conducted using SPSS 25.0 (IBM Corp, Armonk, NY, USA). The significance level was $p<0.05$, except for ethnic group comparisons of barriers (Table 2), where Bonferroni adjustments required a more stringent p value of <0.001 be applied.

RESULTS

Overall, 120 women from each ethnic group participated (overall response rates: 65%). Table 1 presents sample characteristics. Differences in the prevalence of each barrier to help-seeking are reported in Table 2. Compared with White British women, all ethnic minority women reported a significantly higher total number of barriers to symptomatic presentation ($p<0.001$). Ethnic minority women were more likely than White British women to report 'not feeling confident to talk to a GP about symptoms' ($p<0.001$, except Bangladeshi women), being 'too embarrassed to talk to GP about gynaecological symptoms' ($p<0.001$), 'worry about what the GP might find' ($p<0.001$, except African women) and being 'too scared' to see the GP if they thought a symptom might be serious ($p<0.001$). Compared with White British women, Indian and Bangladeshi women recorded greater endorsement of being 'too busy' to make time to visit the GP ($p<0.001$), and Caribbean women were less likely and South Asian women more likely to 'worry about other things' ($p<0.001$). There were no ethnic differences in 'worry about wasting GP's time' or body vigilance. African and South Asian women were more likely to endorse 'using traditional remedies' than White British women ($p<0.001$). All ethnic minority women were more likely to report 'praying about a symptom' ($p<0.001$, except Bangladeshi women), compared with White British women.

Among women from ethnic minority backgrounds, the correlates of emotional and practical and service barriers are displayed in Table 3a. Table 3b displays correlates of body vigilance and self-management barriers. Those who migrated as adults were more likely than UK-born participants to report being 'too embarrassed' and worried 'what a GP might find'. Migration was also associated with 'not spending time checking body for changes', with those who migrated (as adults and children) more likely to endorse this item, compared with UK-born participants. Conversely, those

migrating as adults were less likely to report being 'too busy' or worrying 'about wasting GP's time' compared to those born in the UK. Lower written health literacy was associated with endorsing 'too embarrassed', 'too scared' and 'worry what a GP might find'. Those with lower written health literacy were less likely to say they would 'use of traditional remedies' before visiting GP. Lower spoken health literacy was also significantly being 'too embarrassed' and 'too scared', as well as being associated with 'not feeling confident to talk to a GP about symptoms' and 'praying about a symptom'. A significant graded relationship was also observed between body vigilance and written and spoken health literacy, with less literate participants more likely to report low levels of body vigilance. Conversely those with lower written or spoken health literacy were less likely to report being 'too busy'. Women who had higher fatalism scores were less likely to say they did not feel confident talking to a GP and more likely to report 'praying about a symptom'. Women with high fatalism were also more likely to report 'not spending time checking body'.

DISCUSSION

This study demonstrated ethnic differences in barriers to symptomatic presentation in women. Compared with White British women, women from ethnic minority backgrounds were more likely to agree with many of the barriers presented, supporting previous research.[2,7,8] Worry about wasting GP's time was reported by around 40% of women, a similar prevalence to that reported in two previous studies.[6,24] There were no significant differences by ethnicity, which contradicts the findings from some studies that have found worry about wasting GP's time to be more of a barrier for White women than ethnic minority women.[7] There may be important differences between the ethnic minority populations included in these studies that explain the inconsistent findings. Among the ethnic minority women in our study, those who migrated as adults were less likely to say they worry about wasting the GP's time than those who were born in the UK. This supports the view that British culture's value of stoicism and the 'stiff upper lip'[25] is something that women who are more acculturated might adopt. Emotional barriers were consistently more prevalent in all ethnic minority groups compared with White British women, particularly embarrassment, supporting previous research.[7,8]

We included a number of barriers to symptomatic presentation that had not previously been explored quantitatively. All ethnic minority groups were more likely to say they would pray about a

symptom and more likely to report the use of traditional remedies (except Caribbean women) as first-line coping. An item designed to assess body vigilance was also included.[11] Despite a trend showing lower body vigilance in South Asian women compared with White British women, this was not statistically significant following adjustment. However, body vigilance was lower among ethnic minority women who migrated to the UK as adults, suggesting that health messages encouraging awareness of bodily changes may be particularly relevant for some ethnic minority subgroups of women.

Health literacy was associated with many of the barriers to symptomatic presentation among ethnic minority women, suggesting that lower written health literacy can contribute to embarrassment and fear about seeing the GP, and worry about what the GP might find. Low health literacy was also associated with being too busy to see the GP and having lower body vigilance. Unsurprisingly, spoken health literacy (understanding what the GP says) was associated with being more confident talking to the GP. Lower health literacy was associated with lower likelihood of using traditional remedies, this was the opposite of what we expected and may be due to the younger age of our sample (30-60 years). Those with lower health literacy tend to be older,[26] so further work exploring this association in older ethnic minority populations may have different findings. A recent paper that looked at the association between health literacy and complementary medicines in detail found that associations were different depending on the type of complementary medicines, for example lower health literacy was associated with using meditation but adequate health literacy was associated with vitamin use.[27] This is the first time health literacy has been explored in the context of ethnic minority groups' barriers to symptomatic presentation and has important clinical implications.

A number of studies have confirmed associations between fatalistic beliefs and late-stage diagnosis of cancer,[22,28] in part because they contribute to seeing less value in early diagnosis,[21,29] and fatalistic beliefs are more prevalent among ethnic minorities.[23] In this study, ethnic minority women who were highly fatalistic were lower on body vigilance, more likely to pray before seeking help and less confident talking to a doctor. This suggests that there may be a number of different mechanisms for the association between fatalistic beliefs and symptomatic presentation (and subsequently cancer survival). These findings are worthy of exploration in future work.

A recent review of symptom appraisal models highlighted processes through which sociodemographic factors might influence symptom appraisal and help-seeking,[12] identifying common psychological elements (e.g.attentional resources, identity, expectation). Ethnicity was not explicitly considered, however our findings suggest potential interactions with help-seeking barriers that are worth exploring in further research. Other psychological processes that may be important for different ethnic minority groups include identity, where the complexity of someone's role in society (and the social context in which symptoms are appraised) is considered. Relevant findings here include the higher likelihood of praying about a symptom as a form of first-line coping (linking to religious identity) and identity in terms of migration status/acculturation. Finally, it has been argued that candidacy (perceived eligibility for healthcare) may help explain socio-demographic inequalities in healthcare uptake.[4] For women from ethnic minority backgrounds, beliefs about candidacy may be influenced by language barriers, limited awareness of roles of healthcare, and competence in articulating issue for which help is being sought.[14]

Study limitations

While this study has several strengths, including the large sample of women purposefully recruited to include equal numbers from six of the UK's major ethnic groups, there are a few limitations to consider. Although good, the response rate varied by ethnic group (reported elsewhere[22]) and further details of non-responders were not collected. Cross-sectional data mean causality cannot be assumed**,** and further longitudinal research is needed to support these findings. A number of variables could not be considered in analysis due to collinearity (e.g.religion).

Clinical implications

Our findings suggest that cancer communication campaigns aimed at addressing common barriers should include sources appropriate for those with low health literacy, considering non-written formats as much as possible. While existing campaigns addressing embarrassment and fear have included both written and spoken aspects, the emphasis has always been on written communication. Ensuring that patients are aware of different communication options (e.g. translation services) may help people with lower spoken health literacy feel confident in talking to the GP. It was reassuring to find that very few women reported experience of ethnic discrimination from a healthcare professional in the past 12 months.

Women from ethnic minority backgrounds endorse more barriers to symptomatic presentation for symptoms. Emotional barriers and anticipated use of first-line coping strategies were consistently more prominent for all ethnic minority women. Those who migrated to the UK as an adult, those with low health literacy (written and spoken) and those with higher fatalistic beliefs were the most at risk of facing barriers to symptomatic presentation. This work suggests that campaigns to address barriers to symptomatic presentation among ethnic minority women should be designed to reach low health literacy populations. The findings also suggest that campaign messages designed to challenge fatalistic views may impact a number of different help-seeking barriers.

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The study sponsor had no role in the study design, conduct or interpretation of the data or the writing of the report and decision to submit for publication.

Conflict of interest statement

None declared

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Table 1: Sample characteristics (n=720)

	Overall (n=720)	White British (n=120)	Caribbean (n=120)	African (n=120)	Indian (n=120)	Pakistani (n=120)	Bangladeshi (n=120)
Age (years)							
30-40	296 (41.1)	43 (35.8)	46 (38.3)	54 (45.0)	45 (37.5)	52 (43.3)	56 (46.7)
41-50	262 (36.4)	42 (35.0)	42 (35)	46 (38.3)	47 (39.2)	43 (35.8)	42 (35.0)
51-60	162 (22.5)	35 (29.2)	32 (26.7)	20(16.7)	28 (23.3)	25 (20.8)	22 (18.3)
Education							
Below degree level	582 (80.8)	104 (86.7)	86 (71.7)	95 (79.2)	83 (69.2)	98 (81.7)	116 (96.7)
Degree level and above	138 (19.2)	16 (13.3)	34 (38.3)	25 (20.8)	37 (30.8)	22 (18.3)	4 (3.3)
Marital status							
Not married	202	43 (35.8)	77 (64.2)	46 (38.3)	22 (18.3)	9 (7.5)	5 (4.2)
Married/cohabiting	518	77 (64.2)	43 (35.8)	74(61.7)	98 (81.7)	111 (92.5)	115 (95.8)
Migration status							
Born in the UK	314	120 (100)	53 (44.2)	27 (22.6)	42 (35.0)	41 (34.2)	31 (25.8)
< 18 years	111	0	55 (45.8)	19 (15.8)	8 (6.7)	23 (19.2)	6 (5.0)
> 18 years	295	0	12 (10.0)	74 (61.7)	70 (58.3)	56 (46.7)	83 (69.2)
Ability to speak English							
Main language	431	120 (100)	120 (100)	77(64.2)	42 (35.0)	41 (34.2)	31 (25.8)
Well/very well	89	0	0	25(20.8)	24 (20.0)	22 (18.3)	18 (15.0)
Not well/not at all	200	0	0	18 (15.0)	54 (45.0)	57 (47.5)	71 (59.2)
Written health literacy – Understanding leaflets or letters about health							
Very easy	355	68 (56.7)	117 (97.5)	56 (46.7)	42 (35.0)	41 (34.2)	31 (25.8)
Fairly easy	101	44 (36.7)	3 (2.5)	25 (20.8)	14 (11.7)	13 (10.8)	2 (1.7)
Fairly difficult	208	6 (5.0)	0	37 (30.8)	48 (40.0)	61 (50.8)	56 (46.7)
Very difficult	56	2 (1.7)	0	2 (1.7)	16 (13.3)	5 (4.2)	31 (25.8)
Spoken health literacy – Understanding what GP says							
Very easy	380	78 (65.0)	72 (60.0)	68 (56.7)	67 (55.8)	56 (46.7)	39 (32.5)
Fairly easy	183	27 (22.5)	29 (24.2)	33 (27.5)	31 (25.8)	34 (28.3)	29 (24.2)
Fairly difficult	84	11 (9.2)	13 (10.8)	10 (8.3)	10 (8.3)	22 (18.3)	18 (15.0)
Very difficult	73	4 (3.3)	6 (5)	9 (7.5)	12 (10.0)	8 (6.7)	34 (28.3)
General fatalism							
Low	69	96 (80.0)	83 (69.2)	77 (64.2)	18 (15.0)	12 (10.0)	8 (6.7)
High	651	24 (20.0)	37 (30.8)	43 (35.8)	102 (85.0)	108 (90.0)	112 (93.3)
Experience of discrimination							
Yes	33 (4.6)	0	6 (5.0)	6 (5.0)	4 (3.3)	3 (2.5)	14 (11.7)
No	687 (95.4)	120 (100)	114 (95.0)	114 (95.0)	116 (96.7)	117 (97.5)	106 (88.3)

Data presented as n (%).

Table 2: Ethnic group differences in barriers to symptomatic presentation (n=720)

(n Agree, %)	Overall	White British	Caribbean	African	Indian	Pakistani	Bangladeshi
Emotional barriers							
Not confident to talk	321 (44.6)	9 (7.5)	**96 (80.0)**	**86 (71.7)**	**40 (33.3)**	28 (23.7)	**62 (51.7)**
Too embarrassed	492 (68.3)	9 (7.5)	**92 (76.7)**	**90 (75.0)**	**95 (79.2)**	**97 (80.8)**	**109 (90.8)**
Worry what GP might find	459 (63.7)	37 (30.8)	**67 (55.8)**	49 (40.8)	**92 (76.7)**	**108 (90.0)**	**106 (88.3)**
Too scared	307 (42.6)	12 (10.0)	**77 (64.2)**	**53 (44.2)**	**62 (51.7)**	**53 (44.2)**	**50 (41.7)**
Practical and service barriers							
Too busy	358 (49.7)	53 (44.2)	42 (35)	37 (30.8)	**78 (65.0)**	73 (60.8)	**75 (62.5)**
Worry about many other things	396 (55.0)	56 (46.7)	**27 (22.5)**	34 (28.3)	**90 (75.0)**	**85 (70.8)**	**104 (86.7)**
Worry about wasting GP's time	281 (39)	47 (39.2)	26 (21.7)	42 (35.0)	51 (42.5)	58 (48.3)	57 (47.5)
Self-management							
Use alternative medicine	181 (25.1)	34 (28.3)	60 (50.0)	37 (30.8)	22 (18.3)	17 (14.2)	**11 (9.2)**
Use traditional remedies	348 (48.3)	20 (16.7)	28 (23.3)	**61 (50.8)**	**80 (66.7)**	**76 (63.3)**	**83 (69.2)**
Pray about a symptom	193 (26.8)	12 (10.0)	**34 (28.3)**	**41 (34.2)**	**39 (32.5)**	**38 (31.7)**	29 (24.2)
Body vigilance							
Not spending time checking body for changes	450 (62.5)	69 (57.5)	56 (46.7)	60 (50.0)	87 (72.5)	82 (68.3)	96 (80.0)
Total number of barriers (possible range 0-11)†	5.78 (2.26)	3.23 (1.80)	**5.83 (1.73)**	**5.48 (2.15)**	**6.66 (1.94)**	**6.49 (1.88)**	**7.02 (1.79)**

Data presented are unadjusted percentages for those endorsing barrier or †mean (standard deviation) for total barriers. Ethnic group differences (White British as reference category), adjusted for age, education and marital status, are indicated in bold (significance level $p<0.001$). Barriers to symptomatic presentation response options were dichotomised into 'strongly agree/agree' versus 'not sure/disagree/strongly disagree'.

	Emotional barriers								Practical and service barriers					
	Not confident to talk		Too embarrassed		Worry what GP might find		Too scared		Too busy		Worry about other things		Worry about wasting GP's time	
	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)
Migration														
Born in UK	36	1	49.7	1	51.6	1	31.2	1	61.1	1	53.8	1	41.1	1
Under 18	60.4	0.84 (0.46-1.54)	80.2	1.66 (0.88-3.10)	65.8	1.55 (0.84-2.76)	57.7	1.49 (0.87-2.53)	35.1	**0.31 (0.17-0.54)**	45.9	1.18 (0.64-2.17)	36.9	1.04 (0.60-1.82)
Over 18	47.8	0.90 (0.56-1.44)	83.7	**1.83 (1.06-3.15)**	75.9	**1.91 (1.12-3.26)**	49.2	1.54 (0.99-2.40)	43.1	**0.23 (0.14-0.38)**	59.7	0.61 (0.36-1.03)	37.6	**0.61 (0.39-0.95)**
Written health literacy (understanding health leaflets and letters)														
Very easy	49.6	1	60	1	56.3	1	41.4	1	54.6	1	46.8	1	36.3	1
Fairly easy	25.7	0.58 (0.29-1.20)	51.5	**2.54 (1.14-5.67)**	44.6	1.78 (0.84-3.78)	30.7	1.89 (0.99-3.62)	33.7	**0.13 (0.06-0.28)**	45.5	0.58 (0.29-1.20)	43.6	1.25 (0.68-2.32)
Fairly difficult	42.3	1.15 (0.70-1.91)	84.1	**2.82 (1.57-5.07)**	80.3	**2.09 (1.18-3.69)**	48.1	**1.79 (1.11-2.87)**	49	**0.29 (0.17-0.49)**	64.4	0.74 (0.43-1.26)	37.5	0.69 (0.44-1.10)
Very difficult	55.4	1.70 (0.84-3.45)	92.9	**4.53 (1.46-14.03)**	83.9	2.38 (0.93-6.09)	51.8	**2.29 (1.15-4.56)**	50	**0.26 (0.12-0.53)**	89.3	2.02 (0.75-5.49)	53.6	1.15 (0.59-2.24)
Spoken health literacy (understanding what GP says)														
Very easy	41.6	1	60.5	1	56.1	1	38.7	1	55.8	1	52.9	1	36.3	1
Fairly easy	36.6	0.86 (0.55-1.37)	74.9	**2.45 (1.41-4.28)**	72.7	**1.97 (1.19-3.26)**	51.9	**1.67 (1.10-2.53)**	39.3	**0.46 (0.29-0.71)**	54.1	1.41 (0.77-2.57)	42.6	1.04 (0.68-1.59)
Fairly difficult	56	**2.95 (1.59-5.50)**	75	1.73 (0.86-3.49)	69	1.49 (0.75-2.96)	45.2	1.22 (0.71-2.10)	44	**0.56 (0.31-0.99)**	52.4	10.97 (5.76-20.89)	42.9	1.07 (0.62-1.86)
Very difficult	67.1	**3.72 (1.94-7.13)**	84.9	2.21 (0.97-5.05)	75.3	1.22 (0.60-2.51)	37	0.82 (0.46-1.46)	50.7	0.69(0.38-1.26)	71.2	9.56(4.95-18.47)	39.7	0.81 (0.45-1.45)
Fatalism														
Low	55.1	1	53.6	1	44.9	1	44.9	1	43.5	1	23.2	1	30.4	1
High	**43.5**	**0.61 (0.38-0.98)**	69.9	0.79 (0.47-1.34)	65.7	0.67 (0.41-1.09)	42.4	0.94 (0.61-1.46)	50.4	0.81 (0.50-1.31)	58.4	1.06 (0.64-1.74)	39.9	1.02 (0.65-1.62)

Table 3a: Adjusted† logistic regression analyses of barriers to symptomatic presentation in ethnic minority women (n=600)

†Adjusted for age, education, marital status, and ethnicity (percentages are unadjusted). CI=confidence interval; OR=odds ratio. Significant values in bold, $p<0.05$.

Table 3b: Adjusted† logistic regression analyses of barriers to symptomatic presentation in ethnic minority women (n=600)

	Body vigilance		Self-management					
	Not checking body for changes		Use alternative medicine		Use traditional remedies		Pray about a symptom	
	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)
Migration								
Born in UK	48.4	1	29.3	1	40.4	1	17.8	1
Under 18	62.2	**2.96 (1.70-5.14)**	36	1.02 (0.57-1.83)	38.7	0.64 (0.37-1.13)	32.4	1.21 (0.74-2.34)
Over 18	77.6	**4.44 (2.72-7.23)**	16.6	0.74 (0.43-1.27)	60.3	0.72 (0.45-1.15)	34.2	1.53 (0.94-2.50)
Written health literacy (understanding health leaflets and letters)								
Very easy	45.1	1	32.4	1	40.8	1	23.1	1
Fairly easy	63.4	**4.19 (2.09-8.41)**	23.8	0.86 (0.40-1.86)	44.6	0.96 (0.49-1.89)	21.8	1.10 (0.56-2.18)
Fairly difficult	84.1	**7.38 (4.30-12.67)**	17.8	1.02 (0.57-1.83)	57.2	**0.55 (0.34-0.90)**	34.6	1.45 (0.87-2.41)
Very difficult	91.1	**10.25 (3.72-28.25)**	8.9	0.51 (0.16-1.60)	69.6	0.81 (0.39-1.69)	30.4	1.38 (0.65-2.93)
Spoken health literacy (understanding what GP says)								
Very easy	54.5	1	29.5	1	42.6	1	22.1	1
Fairly easy	66.7	**1.71 (1.10-2.67)**	22.4	0.86 (0.52-1.41)	51.4	1.12 (0.73-1.73)	31.7	1.41 (0.91-2.18)
Fairly difficult	73.8	**2.09 (1.13-3.87)**	19	0.70 (0.35-1.44)	48.8	1.02 (0.58-1.81)	40.5	**1.97 (1.12-3.45)**
Very difficult	80.8	**2.64 (1.30-5.38)**	16.4	0.87 (0.40-1.87)	69.9	1.72 (0.92-3.22)	23.3	0.90 (0.47-1.72)
Fatalism								
Low	50.7	1	40.6	1	39.1	1	5.8	1
High	63.7	**2.37 (1.52-3.69)**	23.5	1.30 (0.79-2.12)	49.3	0.81 (0.51-1.29)	29	**2.20 (1.35-3.60)**

†Adjusted for age, education, marital status, and ethnicity (percentages are unadjusted). CI=confidence interval; OR=odds ratio. Significant values in bold, $p<0.05$.