

# Does improving communication and information for women increase attendance at colposcopy in an inner city clinic? A randomised controlled trial

A. Tomlinson<sup>1</sup>, M. Kyrgiou<sup>2</sup>, E. Paraskevaidis<sup>3</sup>, H. Kitchener<sup>4</sup>, P. Martin-Hirsch<sup>5</sup>

<sup>1</sup>Nurse Colposcopist, <sup>2</sup>Research Fellow, <sup>3</sup>Prof. of Gynaecological Oncology-Head of the Department Gynaecology-Obstetrics,

<sup>4</sup>Prof. of Gynaecological Oncology, <sup>5</sup>Consultant Gynaecological Oncologist

<sup>1,4</sup>The Academic Unit of Obstetrics and Gynaecology, St Mary's Hospital, Manchester (U.K.)

<sup>2,3</sup>Department of Obstetrics & Gynaecology, University of Ioannina (Greece)

<sup>5</sup>Consultant Gynaecological Oncologist, Central Lancashire Teaching Hospital, Preston (U.K.)

## Summary

*Purpose:* To establish whether information leaflets and appointment reminders improve attendance for diagnostic colposcopy.

*Design & Setting:* Randomised controlled trial in an inner city colposcopy clinic.

*Participants:* 500 women newly referred to the colposcopy clinic with abnormal cervical screening smear results were randomly assigned to an intervention or control group using computer-generated numbers.

*Intervention:* 233 women referred for colposcopy were sent a comprehensive information leaflet with their appointment details and additionally were sent reminder letters regarding their appointment 7-10 days prior to their appointment date.

*Control:* 267 women were sent the standard basic information prior to their appointment.

*Main outcome measure:* Attendance and default rates for diagnostic colposcopy.

*Results:* Default in the intervention arm was 42 out of 233 (18%) compared with 93 out of 267 (35%) in the control arm.

*Conclusion:* Improved communication and information in the form of a detailed leaflet and a reminder letter for women with a recently abnormal smear result increased attendance for initial colposcopy assessment.

*Key words:* Colposcopy; Attendance rates; Women's communication; Women's information.

## Introduction

Cervical screening has been proven to be effective in decreasing the incidence of invasive disease where comprehensive programmes exist. The cervical screening programme in the U.K. is now responsible for a significant decline in the incidence of cervical cancer [1]. The decline in the incidence of cervical cancer in the UK has not yet reached its full potential because the rate of screening uptake in cities such as Manchester with a substantial inner city population was 75.4% compared with the national overall average of 83.7% and over 90% in some regions [2].

Lack of health education, the length of waiting time for appointments particularly in impoverished communities and ethnic minority groups in inner city areas are associated with sub-optimal uptake of primary and hospital care appointments. Anxiety also contributes to women defaulting from cervical screening. Around 8% of women screened will have a smear showing evidence of abnormal cervical cytology many of whom will require referral to hospital colposcopy clinics for evaluation and subsequent treatment [3]. Three studies [4-6] have demonstrated high levels of anxiety and stress in these women in whom the predominant fear was that they might have cancer and their apprehension concerning the process of colposcopy.

The default rate for initial evaluation colposcopy at St. Mary's Hospital was 33% during 1999. The national guidelines for optimum colposcopy practice recommend a default rate of less than 15% [7]. The poor compliance with initial colposcopy following an abnormal cervical smear result or follow-up colposcopy to detect treatment failures represents not only an important health risk for women defaulting but also impacts on the efficient running of the colposcopy service.

Two previously published randomised controlled trials [8, 9] have explored the effect of pre-colposcopy detailed information leaflets to see whether this intervention reduces anxiety in women attending clinics. Both studies demonstrated that this strategy did not influence the level of anxiety experienced by women referred for colposcopy. In the latter larger study, improved information leaflets did not have a significant influence on the default rate, but the background default rate in the control group was only 2.9%.

While evaluating strategies to reduce anxiety for women attending colposcopy clinics is important, a prime objective must also be to reduce default rates, thereby reducing the number of women at increased risk of developing invasive disease.

Other interventions have been explored in the area of screening to improve uptake. A randomised controlled trial [10] on improving uptake of breast screening used improved staff training and telephone calls to non-atten-

ders. This study showed an improvement of uptake of breast screening by 5%. However other studies [11, 12] in primary care to improve uptake of screening services have failed to improve attendance.

The aim of this trial was therefore to determine if sending detailed leaflets and pre-visit reminders for colposcopy appointments would reduce the default rates for colposcopy.

## Materials and Methods

A pragmatic randomised controlled trial was conducted in the colposcopy clinic at St. Mary's Hospital, Manchester for six months in 2001. Five hundred consecutive women referred to the colposcopy clinic with a recently abnormal cervical smear who had not previously attended a colposcopy clinic were recruited into the study. There were no other exclusion criteria. Computer-generated numbers performed randomisation.

A prior power calculation demonstrated that a trial with 220 patients randomised to each group would be able to detect a 10% improvement in attendance rates from 65% to 75% in the intervention group as statistically significant at the 5% level with a high probability (power > 80%). An improvement of 10% would not achieve the minimum target attendance rate of 85% set out by the National Health Service (NHS) cervical guidelines [2] but the authors felt that this would potentially be a realistic benefit from the intervention. We compared groups using proportions and 95% confidence intervals (CI) of the differences.

Women allocated to the control group received a standard invitation to attend the colposcopy clinic with a very brief summary of the procedure. This letter was only printed in

English. Women randomised to the intervention group received a detailed explanatory leaflet on the implications of an abnormal cervical smear, a description of colposcopy, outpatient treatment using sensory information and detailing the importance of follow-up.

This new leaflet also included a summary in the most common ethnic languages and detailed information leaflets were available in these languages if requested. The investigating team designed the new leaflet and the hospital's link-workers for the different ethnic groups helped with the preparation of the leaflet for their respective communities. As we took a pragmatic approach to this study, we completed it when 500 women were recruited. We also sent a reminder for the colposcopy evaluation seven to ten days before the appointment. A diagram outlining the trial design and number of subjects is shown in Figure 1.

The primary outcome measure was the proportion of defaulters in each group with secondary outcome measures being age distribution in defaulters and attenders, and grade of cervical abnormalities in the defaulters in each group.

## Results

Five hundred women were randomised with 267 assigned to the control group and 233 to the intervention group. There was no significant difference in the age of women in the two groups (Table 1). There were a total of 135 defaulters between the two groups, 93/267 (35%), 21 with high grade and 72 with low-grade disease in the control arm and 42/233 (18%), five with high grade and 37 with low-grade disease in the intervention arm (Table 2). The mean age of the defaulters in the control group

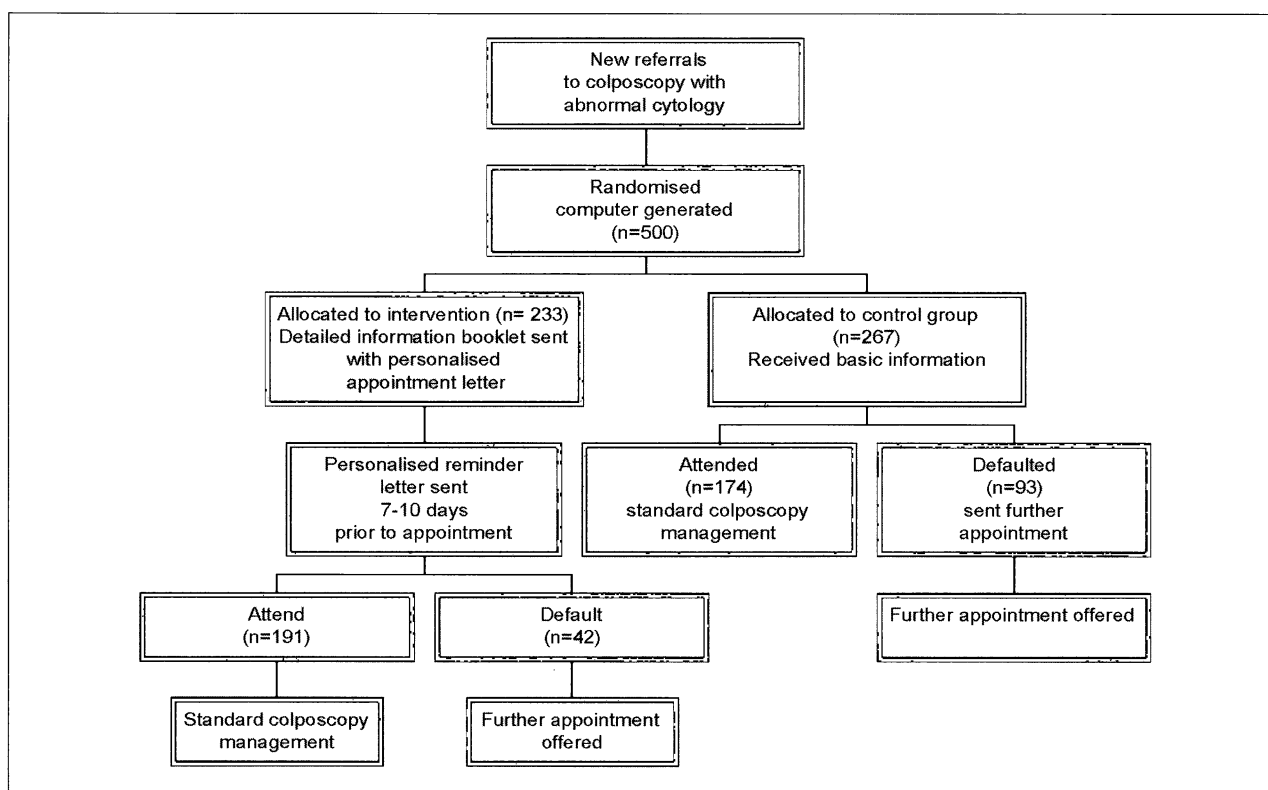


Figure 1. — Trial design.

was 29.4 (SD 4.5) years and 28.2 (SD 3.5) years in the intervention group (Table 3). There was no significant difference in the proportion of high- and low-grade smear abnormalities between the two arms of the study.

One hundred and seventy-four women (65.1%) attended for their initial first scheduled colposcopy assessment in the control group compared with 191 (81.9%) women in the intervention group (Table 4). The more detailed information leaflet and appointment reminder had a significant benefit in reducing the default rate for colposcopy attendance in the control and intervention groups, respectively: 35% (93/267), 18% (42/233) 95% CI 0.091-0.242 (9%-24%) SE of difference 0.03 SE 1.96. Therefore an extra 17% would have defaulted if not given the intervention package.

## Discussion

This randomised controlled trial has demonstrated that by using improved detailed and more readily understood information leaflets, combined with more frequent communication, led to more women attending for colposcopy in an inner city population. This study also revealed that the true extent of the default rate in our inner city setting was in the order of 35% for initial evaluation and therefore we increased our attendance for initial colposcopy by 17% (65%-82%). Approximately a third of these women had an initial referral smear suggesting high-grade disease. This represents a significant number of women who have been identified as having a 'high' risk of developing invasive disease.

Table 1. — *Ages of intervention and control groups.*

Age	Intervention (n = 233)		Control (n = 267)	
	(n)	(%)	(n)	(%)
20-24	48	(21)	74	(28)
25-34	124	(53)	114	(43)
35-44	38	(16)	52	(19)
45-54	16	(7)	14	(5)
55-64	7	(3)	13	(5)

Table 2. — *Grade of smears of defaulters.*

	High grade	Low grade	Total
Control	21	72	93
Intervention	5	37	42

Table 3. — *Age of defaulters.*

	Mean	(N)	S.D.
Control	29.4	(93)	4.5
Intervention	28.2	(42)	3.5

Table 4. — *Attendance and default figures.*

	Attended	(%)	Defaulted	(%)	Total
Control	174	(65)	93	(35)	267
Intervention	191	(82)	42	(18)	233

A previously reported pilot randomised controlled trial [14] has demonstrated that pre-colposcopy education by videotape reduces anxiety, which may then improve attendance. Two other previously published randomised controlled trials [8, 9] demonstrated that improved pre-colposcopy leaflets did not reduce anxiety levels.

However we did not set out to measure anxiety levels but only to see if we could effectively and realistically improve attendance.

We do not know from this study if the increase in attendance was due to the improved information or the reminder letters. In a randomised control trial exploring the effect of reminder letters on uptake rates of women for cervical screening a reminder letter was not sufficient to encourage women who had never or infrequently undergone a pap test to come in for cervical screening [15].

Thus we can only suggest that a combination of the two in the form of an intervention package reduced default rates.

Previous studies [16, 17] have shown that using sensory information in written leaflets prior to colposcopy has been effective. Improving sensory information regarding colposcopy might have an impact on the follow-up behaviour of women and our study illustrates that such information needs to be evaluated in this setting.

This study has highlighted the need for further work in this area to find out why women continue to default and also to study the effect of an intervention for follow-up appointments and interventions to encourage women to attend after once defaulting.

Women who have had treatment for cervical intraepithelial neoplasias are at risk of having residual disease and are at a higher risk of developing invasive disease compared with the general population [18, 19]. Poor compliance with colposcopic surveillance and post-treatment assessment also puts these women at increased risk.

Our approach failed to demonstrate a significant difference in the proportion of low/high-grade disease among the defaulters in the two arms of the study, which might suggest that the reasons for default are not principally influenced by the severity of the smear result. Similar findings have been identified in a review of 1,492 new referrals to gastroenterology and ENT clinics [20] which showed non-attendance was again not related to the nature, severity or duration of the patients' presenting problems.

The mean age of women attending for colposcopy during this study reflects the usual age for raising children. Women within this age group have been identified as having a high default rate in other clinical settings [21]. Patients in deprived areas might find it difficult to arrange childcare. Strategies to improve the service for women with children should also be considered.

This study has demonstrated a clear benefit from improved communication and reminders in improving colposcopy attendance. This strategy is inexpensive and practical and can be applied generally in colposcopy clinics and other outpatient settings.

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Address reprint requests to:  
E. PARASKEVAIDIS, M.D., Ph.D.  
Department of Obstetrics & Gynaecology  
University Hospital of Ioannina, 45500  
(Greece)