

# Patient satisfaction in treatment for cervical pathology

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**Abstract.** This study aimed to analyse the satisfaction levels of patients treated for cervical dysplasia. At the Orbis Medical Center, all cases of abnormal cervical cytology are referred for colposcopy; however, there are three possible routings for patients: i) Patients are informed by the gynecologist about the colposcopy in a visit to the outpatient clinic, and colposcopy is planned in a second visit; ii) patients are informed by the gynecologist immediately before the colposcopy (a single visit); or iii) patients are called by a nurse practitioner 1-2 weeks prior to the colposcopy. The nurse practitioner informs patients about their Pap smear result, the colposcopy procedure and the follow-up (single visit plus telephone conversation). Patient satisfaction was analysed in the diagnostic and occasionally in the therapeutic colposcopies, with regards to information, treatment, appeasement and number of visits. The issue of whether the introduction of nurse practitioners improved patient satisfaction was also assessed. Patient satisfaction questionnaires were sent to all 593 patients who underwent a colposcopic examination for the first time following an abnormal smear test result. Data were analysed using SPSS 14.0. For statistical analyses,  $\chi^2$  tests and the Mann-Whitney U test were used.  $P < 0.05$  was considered to be statistically significant. The response rates did not differ significantly among the three groups of patients. In general, patient satisfaction regarding care was high (96%). The role of the nurse practitioner was rated highly (8.0-8.4). Although there were differences in the number of visits and satisfaction regarding the information provided, patient satisfaction did not differ significantly between groups 1 and 3. Patients in group 2 were significantly less satisfied with regard to almost all analysed data. In conclusion, the single visit procedure is extremely efficient. Patient satisfaction did not differ significantly between groups 1 and 3, but group 2 patients were significantly less satisfied. The introduction of nurse practitioners improves patients' knowledge, comfort and satisfaction. Furthermore, it reduces the number of visits

required. Efficient treatment strategies were introduced and patient satisfaction was increased.

## Introduction

Cervical intra-epithelial neoplasia (CIN) is regarded as a precancerous disease of the cervix. Human papillomavirus (HPV) infections are strongly associated with the development of cervical dysplasia and cervical cancer (1). A total of 70% of all cervical dysplasias are detected by population screening with cytology of the cervix (Pap smear) (2-3).

At the Orbis Medical Center, all cases of abnormal cervical cytology are referred for colposcopy; however, there are three possible routings for patients: i) Patients are informed by the gynecologist about the colposcopy in a visit to the outpatient clinic, and colposcopy is planned in a second visit; ii) patients are informed by the gynecologist immediately before the colposcopy (a single visit); or iii) patients are called by a nurse practitioner 1-2 weeks prior to the colposcopy. The nurse practitioner informs patients about the Pap smear result, the colposcopy procedure and the follow-up (single visit plus telephone conversation).

Receiving information pertaining to abnormal cervical cytology has caused anxiety and confusion in women in the past. Levels of anxiety are high in women who are referred for colposcopy due to a limited understanding of the implications of a Pap smear test and the purpose of colposcopy (4-8). Moreover, certain individuals have difficulty understanding all the information provided (9). High levels of anxiety before and during colposcopy may have adverse consequences, including pain and discomfort during the procedure. It may also lead to high percentages of patients being lost to follow-up (8,10).

A number of interventions to reduce the level of anxiety in female individuals undergoing colposcopy are described. Anxiety and pain levels during colposcopy are reduced if the patient is listening to music or watching a video during colposcopy. Anxiety is also reduced when information videos are shown prior to colposcopy (8,10,11). Information leaflets increase knowledge levels, which is important for obtaining clinical consent to the colposcopy and for reducing psychosexual dysfunction (8,10,12). To improve knowledge scores and satisfaction, pre-colposcopy discussion sessions in which detailed information is provided have proven to be effective. Pre-colposcopic counselling sessions were not associated with anxiety reduction (8,12).

The purpose of this study was to analyse patient satisfaction following colposcopic examinations due to abnormal cervical

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cytology. Single and repeat hospital visits were differentiated. Moreover, the role of the person that provided the information prior to the colposcopy and the availability of time were analysed. Moreover, whether the introduction of nurse practitioners improved patient satisfaction was assessed.

## Materials and methods

Patient satisfaction questionnaires were sent to all 593 patients who underwent a colposcopic examination for the first time between January 2007 and April 2009, following an abnormal smear test result. The patient satisfaction questionnaires comprised components such as information provided, admission procedure, appraisal by the gynecologist and nurse practitioner, autonomy, aftercare, follow-up and patient characteristics. The questionnaire was introduced by a letter with background information.

Responses of the patients were based on a ten-point scale ranging from 1 (very poor) to 10 (excellent). Overall satisfaction of patients was analysed as well as the satisfaction of patients with respect to their routing.

Data were analysed using SPSS 14.0. For statistical analyses,  $\chi^2$  tests and the Mann-Whitney U test were used.  $P < 0.05$  was considered to be statistically significant.

## Results

Patient satisfaction questionnaires were sent to 593 patients, 245 of whom responded (41%). For 93% ( $n=228$ ) of patients, the native language was Dutch. Of all respondents, 44% ( $n=109$ ) were in group 1; 34% ( $n=83$ ) were in group 2 and 22% ( $n=53$ ) were in group 3 (Table I). The mean number of responses per month was 8 for the year 2007; 11 for the year 2008 and 12 for the year 2009. Group 3 was the smallest group, but the responses per group were not significantly different.

The medium and median age of patients was 40 years (range 16-79). Age did not differ significantly among the three groups. A total of 43% ( $n=160$ ) of the respondents had received middle-level applied education 43% ( $n=160$ ) and 77% ( $n=189$ ) of the patients had middle-level or higher levels of education, which affected individual decision-making (?).

We assessed the value of the information received prior to colposcopy. Overall, patients in group 3 had the highest satisfaction level (Table II). Satisfaction ratings regarding information on diagnosis and treatment were 7.2 for group 1; 6.9 for group 2; and 8.1 for group 3. In addition, the value of the information leaflet was rated 7.6 for group 1; 7.5 for group 2; and 8.3 for group 3. These ratings are not significantly different. Satisfaction ratings regarding waiting times were also not significantly different (7.3 for group 1; 7.2 for group 2; and 7.3 for group 3).

Ratings regarding the personal attention provided by the gynecologist were also not significantly different (8.0 for group 1; 7.8 for group 2; and 8.0 for group 3). Competence was rated 8.3 for group 1; 8.1 for group 2; and 8.3 for group 3. Understandability ratings regarding diagnosis, treatment and follow-up provided by the gynecologist were 8.1 for group 1; 7.6 for group 2; and 8.0 for group 3, which is not a significant difference.

Table I. Questionnaire respondents in subgroups.

Group	Respondents [no. per subgroup (%)]
1	109 (44)
2	83 (34)
3	53 (22)
Total	245 (100)

The lowest satisfaction rates were found in group 2. High satisfaction rates ( $>8.0$ ) were found in patients who were contacted by a nurse practitioner 1-2 weeks before the colposcopy (group 3). In this telephone conversation, information was provided and patients' concerns were discussed. The satisfaction level regarding this conversation was rated 8.0. Regarding the competence and clarity of the nurse practitioner, ratings were 8.3 and 8.2 respectively. Personal attention was rated 8.4.

Regarding aftercare and follow-up, patients were asked to rate provision of information on follow-up and outcomes of colposcopy. Satisfaction ratings for these criteria were 7.5 for group 1; 7.1 for group 2; and 7.7 for group 3. The lowest satisfaction ratings were found in group 2.

Satisfaction ratings for levels of care at the outpatient colposcopy clinic and in the hospital in general were 7.6 for group 1; 7.5 for group 2; and 7.6 for group 3. In addition, 96% of the patients were very satisfied with the care at the outpatient colposcopy clinic in general. Four percent of the patients ( $n=11$ ) reported to be unsatisfied, with a rating  $<6$ .

Responses were analysed (1-5 per criterion) and the mean ratings were calculated per criterion. Ratings regarding information prior to colposcopy were 7.3 for group 1; 7.1 for group 2; and 7.8 for group 3. Admission procedure was rated 7.5 for group 1; and 7.3 for groups 2 and 3. Appraisal by the gynecologist was rated 8.0 for group 1; 7.6 for group 2; and 7.8 for group 3. Autonomy was rated 7.6 for groups 1 and 3; and 7.2 for group 2. The ratings for aftercare were 7.5 for group 1; 7.2 for group 2; and 7.6 for group 3. For the outpatient clinic the ratings were 7.7 for group 1; 7.4 for group 2; and 7.5 for group 3 (Table III). Patients were also asked whether they would return to the hospital upon further medical need: 96% ( $n=105$ ) of group 1, 92% ( $n=49$ ) of group 2 and 98% ( $n=52$ ) of group 3 answered positively.

Criteria with the lowest satisfaction ratings are predominantly found in group 2. The lowest scores were found in criteria regarding information, admission procedure, appraisal by the gynecologist, autonomy, aftercare, outpatient colposcopy clinic and planned return.

The rate of recurrence in group 1 was 44% ( $n=44$ ). Satisfaction ratings in group 1 patients with and without recurrence were identical (7.5). The rate of recurrence in group 2 was 41% ( $n=33$ ). Satisfaction ratings in group 2 patients with and without recurrence were 7.3 vs. 7.5, respectively. The rate of recurrence in group 3 was 29% ( $n=15$ ). Satisfaction ratings in group 3 patients with and without recurrence were 7.5 vs. 7.4.

The overall rate of recurrence for all patients was 40% ( $n=92$ ). The overall satisfaction ratings in patients with and without recurrence were 7.5 vs. 7.4. None of these differences

Table II. Satisfaction ratings regarding provision of information.

Satisfaction value with information prior to colposcopy	Group 1	Group 2	Group 3
Information on diagnosis and treatment	7.2	6.9	8.1
Information leaflet	7.6	7.5	8.3

Satisfaction ratings were based on a ten-point scale ranging from 1 (very poor) to 10 (excellent). The information leaflet contained information on colposcopy, the LLETZ-procedure, pre- and aftercare, pain medication and complications.

Table III. Satisfaction ratings per criterion for groups 1, 2 and 3.

Criteria	Satisfaction ratings		
	Group 1	Group 2	Group 3
Information	7.3	7.1	7.8
Admission procedure	7.5	7.3	7.3
Appraisal by the gynecologist	8.0	7.6	7.8
Appraisal by the nurse practitioner	-	-	8.2
Autonomy	7.6	7.2	7.6
Aftercare	7.5	7.2	7.6
Outpatient clinic	7.7	7.4	7.5
Medium satisfaction rates	7.6 (7.3-8.0)	7.4 (7.1-7.4)	7.6 (6.9-8.2)

Satisfaction ratings were based on a ten-point scale ranging from 1 (very poor) to 10 (excellent). Satisfaction ratings are the mean rating per criterion; 1-5 questions per criterion. Medium satisfaction ratings: mean rating for all criteria.

between patients with and without recurrence were statistically significant.

## Discussion

Patient satisfaction was measured in relation to various aspects of colposcopy. We analysed 245 patients with abnormal cytology (4.5% of all Pap smears), who were referred for colposcopy (13,14). These patients had a mean age of 40 years, which is slightly higher than that found in previous studies (15). High educational levels were found; however, greater satisfaction was significantly associated with less education (16,17). This factor has to be taken into account when interpreting satisfaction levels in this study.

Our study has shown that the single visit procedure is extremely efficient for treating patients with abnormal cervical cytology. However, criteria with the lowest satisfaction rates are predominantly found in group 2. Although there is a difference in the number of visits, patients' comfort and satisfaction with the information provided, satisfaction levels did not significantly differ between groups 1 and 3. Patients of group 2 were significantly less satisfied with regards to almost all analysed data. The introduction of the nurse practitioner allowed for the implementation of efficient treatment strategies and patient satisfaction was increased.

Patient satisfaction therefore plays an important role in maintaining relationships between patients and health care providers, as well as in patient compliance and continued use of medical services (18,19).

The domains used in our questionnaires corresponded with those mentioned in patient satisfaction questionnaires from the World Health Organization (20). The amount of questions asked by the patients does not show any correlation with levels of satisfaction (21,22). In our study, a ten-point scale was used, which is presumed to have a higher reliability index than a four-point scale (23).

Female individuals experience difficulties in acquiring relevant information prior to colposcopy (9). Moreover, they believe little or no information is provided by their primary care team and 43% had no knowledge at all about the colposcopy (4,12). This lack of information can result in high levels of anxiety and distress (4-8,24). Various authors have advocated the provision of adequate information (4,8,12). Written information can improve compliance to follow-up after colposcopy (8). To address this matter, an information leaflet was sent out prior to colposcopy, which was deemed a positive step. In group 3, 100% of the patients were satisfied ( $\geq 6$ ) with the leaflet, vs. 91 and 92% of groups 1 and 2, respectively. Female individuals recollected the information more readily when it was provided in various ways and repeatedly; therefore the leaflet was of greater benefit to group 3 patients (8).

In addition, significantly higher satisfaction levels were found for information regarding diagnosis and treatment before colposcopy, in group 3. Only 4% of patients evaluated the information as inadequate (score  $\leq 6$ ) vs. 14% in groups 1 and 2. Furthermore, patients rated the informational telephone conversation with the nurse practitioner prior to the colposcopy as very good ( $\geq 8.0$ ).

In our study, provision of adequate information in combination with counselling improved knowledge and satisfaction, which is in agreement with other findings (9,5,12,25). However, it appears to be ineffective in reducing anxiety levels (5,8,10,12,26).

Gynecologists are often criticised as they are frequently perceived as being rushed during consultations and women believed their queries remained unanswered (4). It is important to recognise that most doctors practise under time pressure (7). At the colposcopy clinic female patients felt unable to ask questions in this setting (6). This may explain the lowest medium satisfaction levels in group 2 patients.

Nurse practitioners have been introduced whose role involves contacting patients by telephone 1-2 weeks prior to colposcopy to provide information and support. These nurse practitioners explain the meaning of medical terms, details of the procedure and the aftercare, and encourage the discussion of issues the patients consider to be of importance, such as the effect on gender and fertility.

Inadequate or inaccurate information can be the basis of anxiety (5,7). Anxiety may be exacerbated in women with specific concerns (24). Nurse practitioners can help to minimise anxiety by encouraging questions to explore these concerns and clarifying misunderstandings (5,7).

In order to improve knowledge scores and satisfaction, pre-colposcopy discussion sessions in which detailed information is provided, are known to be effective (5,8). Counselling was associated with an increase of knowledge with regards to colposcopy (8,25).

The role of the nurse practitioner was highly valued (8.0-8.4) by the female patients in our study. Only one patient did not find the nurse practitioner of benefit.

Patients prefer appraisal by the nurse practitioners instead of the gynecologist, 8.2 vs. 7.8, although this difference is not significant. It appears to be that nurse practitioners are available for patients, are accustomed to this type of work and are more emotionally focused. Consequently, they have developed adequate and supportive pre-colposcopic counselling techniques. Additionally, patient comfort is improved and the number of visits are reduced. It has been suggested that pre-colposcopic counselling may prevent future psychiatric or psychological morbidity and improve compliance with treatment (5,18).

Accordingly, the lowest medium satisfaction levels were predominantly found in group 2. Patient satisfaction did not differ significantly between groups 1 and 3. This reflects the fact that specific patient-focused attention and informational care is accountable for positive experiences and high levels of satisfaction.

Experiences were generally positive for all groups and mean satisfaction scores with regards to care were very high ( $\geq 7.4$ ), which corresponds to other studies (27). A total of 95% ( $n=206$ ) of the patients plan to return to the hospital upon further medical need. Further analysis revealed that the most common reasons for returning were satisfaction with the treatment in general, location of the hospital and sympathy of hospital staff. Other reasons given were competent gynecologists and minimal waiting time.

The rate of recurrence or persistent disease was not associated with satisfaction, which contrasts with findings in other

studies, where good self-perceived health is associated with higher satisfaction levels (19,28). This discrepancy is likely due to the asymptomatic course of cervical intra-epithelial neoplasia.

Limitations in questionnaire data on care quality stem from non-response, missing values, and skewed score distributions (29). Our response rate of 41% was adequate, although lower than the 54-67% rate typically noted in mailed surveys (21,30).

Results may have been biased if non-respondents were less satisfied (21,31). The criterion most susceptible to non-response in our study is information bias in that for some patients the questionnaire was sent two years prior to colposcopy. The longer the follow-up period, the higher the non-response: mean number of responses per month in 2007 was 8 as opposed to 12 per month in 2009. Patient characteristics involve age (young age group), a higher educational level, a lower socio-economic status, marital status (single), employed, unemployed, and good or not good health (32). The effect of anonymity did not enhance the response rate. A written reminder was sent after 2 weeks; however, written reminders only improved the response rate when accompanied by the questionnaire (21).

Our study has some limitations. Firstly, the participants were relatively highly educated, which is known from previous studies to have a negative impact on satisfaction (22). There is an absence of determinants such as ethnicity and income; however, there is no identified association for these patient characteristics (22,28). Secondly, the use of a written questionnaire may have induced a sample bias, as non-Dutch or lower-class patients would be less likely to participate due to inadequate language proficiency. However, results appear to be in agreement with other surveys of patient satisfaction with colposcopy (5,33). We were unable to perform a non-responder analysis that may have provided information on the extent of the sample bias. Finally, there is a possible information bias in the analysis of the responses in that ideally the questionnaire should have been sent out immediately after the colposcopy.

The present study examined patient satisfaction and the most convenient routing for patients referred for colposcopy. Further study is needed to identify supporting services to reduce patient anxiety and affect their level of satisfaction.

In conclusion, the single visit procedure is extremely efficient. Although patient satisfaction did not differ significantly between groups 1 and 3, patients of group 2 were less satisfied. The introduction of the nurse practitioner allows for efficient treatment strategies to be implemented, thereby increasing patient satisfaction levels.

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