Cervical Cancer Screening in Bulgaria: Psychosocial Barriers and Determinants

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Cervical cancer constitutes 7.6% of all cancer incidence in Bulgarian women, preceded by breast (22.6%), skin (10.4%) and uterine (7.9%) (Danon, Valerianova, & Ivanova, 2002). The incidence and mortality from cervical cancer in Bulgaria has been on the rise during the past two decades (Kostova & Zlatkov, 2000; Kostova, Zlatkov, & Danon, 1998). Age-adjusted rates of incidence and mortality of cervical cancer have risen in the following way: (From the WHO Health for All Database).

<table>
<thead>
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<th>•Incidence of cervical cancer in BULGARIA</th>
<th>•Mortality rates of cervical cancer</th>
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<tr>
<td>*1980 – 14.60 per 100,000</td>
<td>*1970 – 3.98 per 100,000</td>
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<td>*1990 – 15.56 per 100,000</td>
<td>*1980 – 3.38 per 100,000</td>
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<td>*2002 – 27.23 per 100,000</td>
<td>*2002 – 7.45 per 100,000</td>
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*All ages

Social and institutional dynamics in Bulgaria have important implications for cervical cancer screening and prevention programs. The changes in the healthcare system are creating significant barriers to regular screening and intensifying disparities in access to screening programs. One of the most striking consequences of the transitional period in Bulgaria is the disintegration of the previously existing cervical cancer screening programs, which offered routine cytological testing for women up until the late 1980’s. This necessitated a multi-component analysis and needs assessment of the current situation in regard to the organization of and attitudes toward screening.

The data we will be presenting are part of a larger International Study “Psychosocial and
Health Systems Dimensions of Cervical Cancer Screening in Bulgaria and Romania”, conducted in collaboration between the Health Psychology Research Center in Sofia, Bulgaria; the Department of Psychology at the Babes-Bolyai University in Cluj-Napoca, Romania; and EngenderHealth, USA

The project includes a Psychosocial Analysis, aiming to provide information on the socioeconomic screening disparities, attitudes, and risk perception of women regarding cervical cancer screening, and to identify the interconnectedness between screening behavior, socioeconomic status, screening pathways and attitudes toward screening in Bulgaria. The model is based on elements from the Health Belief Model and the Theory of Planned Behavior [Bish, 2000 #36]. Another part of the project is the Health Systems Analysis, whose objective is to elicit the key health care system elements required for an effective implementation of cervical cancer care. As part of this we have examined the institutional arrangements and capacities required to implement cervical cancer screening. (These will be presented in detail in the other paper from Bulgaria based on this study, entitled “Implementing cervical cancer screening in Bulgaria: what are the health system-level constraints that should be addressed?” – Balabanova, Panayotova, Georgiev)

Methods

The Psychosocial part of the study includes in-depth interviews and a structured survey. In the development of the survey we were informed by existing methodologies in the area, particularly in the health psychology and health promotion literature (Sutton & Rutherford, (In press)). We also constructed the survey to be culturally sensitive to the needs of Bulgarian women and to the current context of health care. For this purpose we first conducted interviews with 35 women to understand their perceptions of barriers to cervical cancer screening, as well as their experiences of screening procedures and the availability or unavailability of such. These interviews were tape recorded and transcribed verbatim. The were analyzed according to qualitative data analysis techniques, particularly grounded theory approaches (Chamberlain, 1999), using Atlas.ti qualitative data analysis software (Todorova, Falmagne, & M.G., 2001). The findings were used in informing the development of the structured questionnaires.

The survey was administered to a nationally representative sample of women aged 20 – 65 (1099 women in Bulgaria). Data was collected through face-to face structured interviews and
entered into the Statistical Package for Social Sciences (SPSS). The statistical analysis included descriptive analysis, correlation analysis, ANOVA and regression analyses in order to identify the determinants of screening.

For this paper, we will focus on the socioeconomic determinants of women’s past screening behavior and future screening intentions, as well as their access to information and perceived barriers to cervical screening.

Women’s past screening behaviors

The data we have collected illustrate women’s past screening behavior. As is shown in Fig.1, nearly half of the women have never had smear test and less than half have had such a test. At the same time, one out of 10 women could not confirm if she has been tested or not. After a detailed interviewer’s explanation of what a smear test is, the question was posed again, and the number of those women who responded with ‘I don’t know’ decreases by half.

Fig.1 Smear test attendance before and after interviewer’s explanation
In terms of frequency of screening, of those women who have had PAP tests, 39% have the smear test at least once a year (fig.2), while 31% have their smear test once in a period between two and five years, and one quarter have not had the test in over five years. The frequency of visits for cervical smears resembles the frequency of gynecological exams.

**How often do you get smear tests?**

- More than once a year: 9%
- Once a year: 29%
- Every 2-5 years: 31%
- More than 5 years: 25%
- DK: 6%

*Figure 2. Frequency of smear tests*

**How often do you go to a gynecological exam?**

- Less than once in 5 years: 32%
- Once every 3-5 years: 22%
- Once a year: 26%
- More than once a year: 13%
- DK: 7%

*Fig.3. Frequency of gynecological exams*
Social and demographic characteristics of women’s past screening behavior

Social and demographic characteristics are important determinants of women’s past screening behavior. All cross-tabulations have significant Chi Square statistics at P= 0.00

Size of settlement: The percentage of women who have never had a smear is the highest among women living in small settlements (under 5000 people) – 61-63%. In contrast, the percentage of those who have been tested is highest among women living in big cities (population between 50000 and 100000 and particularly in the capital) – 60-61%.

Marital status: Married and divorced women (50-46%) have had smear tests twice more often compared to non married (25%) and widowed women (37%).

Ethnicity: There is a strong differentiation of women’s screening behaviors according to their ethnicity. One out of two Bulgarian women have been tested compared to one out of ten women from Roma ethnicity and one out of 3 women from Turkish ethnicity, pointing to a greater risk among minority women in Bulgaria.

Religion: Religious affiliation of women is also a strong determinant of their past screening behavior. One out of two women with Orthodox affiliation has had a smear, while one out of four women with Muslim denomination has completed the check. Women who consider themselves to be less religious have had smear tests twice as often compared to women who identify themselves as highly religious.

Education: Women’s educational level is a powerful determinant of their past screening behavior as well. The higher their educational level, the greater the percentage of those who have been screened. Only 15% of women with basic or without education have been tested compared to 77% of women with two year college education and 64% of women with higher education.

Financial situation: Women who rate their situation as good had smear tests three times more often (59%) than women who consider their household’s material situation as poor.

Age: Women’s past screening behavior is also differentiated by age. The greatest share of women who have done a cervical smear is in the middle age groups: 30-39 (49%), 40-49 (54%) and 50-59 (54%). Among women from the youngest age group (20-29) and the oldest one (between 60-65) prevails the number of those women who haven’t done smear tests, respectively 70% and 51%.
**Intention for Cervical Screening**

In terms of intentions to attend for cervical screening, nearly half of the women aged 20 – 65 state that they intend to go in the next three months (Fig. 4). (This analysis was conducted after filtering out those women, who have had a PAP smear in the past year, final N = 918). Nearly one third of the women however, do not intend to do so. It is interesting to note, that 65% of those that do not intend to go for screening, have never had a PAP smear.

**If given a chance, do you intend to go for a smear test in the next 3 months?**

![Fig. 4. Screening Intentions](image)

Cross tabulations, determining the significance of the Chi Square statistic illustrate that the *size of the settlement* does play a role in determining women’s intentions, with those in smaller settlements having more of a motivation to go for a smear (P = 0.0).

*Marital status* is important in determining women’s intentions, with those who are married and divorced having greater intentions than widowed and single women (P<0.05).

*Ethnicity, Religion and Religiousness* do not play a role in determining women’s intentions to go for a smear test in the future.

*Education* is also an important determinant, with women with few years of education stating the least intentions. In terms of *financial status*, (assessed by self-perceived financial situation), most of the women who do not intend to go for a smear test in the next 3 months (46,6%), have assessed their financial situation as poor or very poor (P= 0.0).
Unlike the situation with past behavior, age does not prove to be a significant determinant of intentions for screening behaviors. However, of those women that do intend to go for a smear test, the smallest percentage are those in the age group of 60-65 (7.4%) and the largest in the age group of 50-59 (26.4%).

**Systemic barriers**

The qualitative interviews as well as the structured interviews illustrate the serious systemic barriers, which women face in order to have access to cervical screening. We identified systemic barriers as those having to do with access to the healthcare system and with provider-patient relationships and constructed and index based on them (Cronbach Alpha = 0.79). Fig. 5 illustrates the most important systemic barriers to screening which women face or expect to face (for those who have not had smears). The three most significant problems which women mention are: ‘Doctors do not want to examine me unless I am sick’ (45.4%), ‘My doctor never suggested it’ (43.6%), ‘Gynecological visits are unpleasant’ (38.9%). We have also assessed the “price of the smear” as a separate barrier, which women might face, and that proves to be the case. Even though the PAP should be covered by the insurance fund, in practice often the only way for a woman to navigate through the system and obtain a smear is to pay out of pocket.

![Barriers to Screening](image)

*Fig. 5. Systemic barriers*
Other barriers that women reported in the qualitative and structured interviews were long waiting lines for the GP, absence of referral forms for specialists and preventive tests, and having to travel far for medical care. The extent to which women face systemic barriers is related to their socioeconomic conditions, as illustrated by ANOVA. For example, the small size of the settlement in which the women live is associated with greater difficulties in accessing cervical smears. The long waiting lines, absence of information about where to go, and the price of the test are barriers mainly for women of Roma ethnicity, as well as for those of the Muslim religion. The cultural expectations about women’s behavior in the Muslim community can contribute to their problematic access to gynecological care. Women who report to have a high level of religiosity also face more problems. Additionally, women with primary education are also faced with multiple barriers, compared to those with high school and college educational levels. And very importantly, women who have a monthly household income of 100 leva or less (or assess their financial situation as poor or very poor), face the most difficult barriers in finding access to cervical screening. The frustration of dealing with these difficulties can lead to avoidance of contact with the healthcare system, so that medical care is sought only as a last resort.

Information about Cervical Cancer and Cervical Smears

We have also assessed women’s access to information and knowledge about cervical cancer and PAP smears. This was measured by a 5-item scale (Cronbach Alpha = .79), which contained right and wrong answers. Women’s access to information is highly dependent on the socioeconomic variables, with the ANOVAs significant at the P = 0.00 level. Women in smaller settlements; of minority groups; of fewer years of education; and of limited financial capital and low financial satisfaction report most difficult access to information and knowledge about smears. Women of the middle aged groups and those that are married or divorced have more information about cervical cancer than those that are single.

Predictors of Bulgarian Women’s Past Screening Behaviors and Future Intentions

Of all the determinants of past screening behavior and future intentions that we have discussed, it is important to assess which contribute most strongly in predicting these behaviors. For this purpose, we have conducted a stepwise linear regression analysis, using past screening
behavior in the first case, and screening intentions in the second case, as dependent variables. (The regression model for screening intentions was tested only for those women, who had not conducted a PAP smear in the past year N= 918). The regression model tested the importance of the following predictors: Knowledge, Systemic Barriers, Age, Education, Size of Settlement, Ethnicity, Religion, Religiousness, and Financial Situation.

Women’s past screening behavior was most strongly predicted by their knowledge about cervical smears (Beta = 0.5), by their age (Beta = .17), by the systemic barriers they face (Beta = -0.18) and very weakly by their marital status (Beta = -0.07). As can be expected, women’s intentions to attend for cervical smears are harder to predict – they were predicted by similar factors, though not as strongly: by their knowledge about cervical smears (Beta = 0.19), by the systemic barriers they face (Beta = -0.096) and by their marital status (Beta = -0.03). As we can see, age is an important determinant of past behavior, possibly having to do with the fact that middle-aged and older women have had smears in the past as part of the population screening programs existing until the late 1980’s. Knowledge about cervical smears is an important predictor of past behavior, but it is also most probably a consequence of having had smears in the past. In addition to knowledge and the problems created by the systemic barriers, women’s intentions to attend for screening will probably be explained additionally by psychological and cognitive variables, which will be discussed in a separate paper.

Conclusions

Women who possess fewer socioeconomic resources (such as education and finances) and women who have less access to healthcare due to the smaller size of the settlement they live in, as well as women who are very religious could be defined as the most vulnerable groups in regards to cervical screening. At the same time, approximately half of the women who have high educational and financial capital, who live in big cities and who are in their middle age haven’t had a smear test.

A future project aimed at increasing women’s access to screening needs to focus on the main determinants of screening behaviors in Bulgaria, which are Knowledge and Systemic Barriers. The analysis illustrates the key importance of health education initiatives in efforts to prevent cervical cancer in Bulgaria, as well as the need for systemic reform and elimination of
systemic barriers faced by women (such as inadequate referrals for PAP smears, the devaluation of prevention by providers and the system, and difficulties in provider-patient communication).

Initiatives promoting cervical cancer prevention screening should be undertaken in multiple directions simultaneously. The efforts should be directed towards educational programs targeting the more vulnerable groups identified by ethnic, religious, financial, educational, and location factors. At the same time, a broader, paramount educational program should cover the entire population, thus assisting those women with more education, financial independence, living in urban areas, who have not had smear tests. In parallel, policy and legislative reform should be undertaken, in order to reduce the barriers which obstruct women’s pathways in the health care system.

REFERENCES


Sutton, S., & Rutherford, C. ((In press)). Sociodemographic and attitudinal correlates of cervical screening uptake in a national sample of women in Britain.