



Analysis of Factors Affecting Women of Childbearing Age to Screen Using Visual Inspection with Acetic Acid

Sondang Sidabutar^{a,b}, Santi Martini^c, Chatarina Umbul Wahyuni^c

^aFaculty of Public Health, Airlangga University, Surabaya, Indonesia

^bPublic Health Study Programme, Faculty of Health, Efarina University, Simalungun, Indonesia

^cDepartment of Epidemiology, Faculty of Public Health, Airlangga University, Surabaya, Indonesia

Objectives: The purpose of this study was to evaluate patient factors such as knowledge, attitude, motivation, perception, socio-economic status and travel time to health facilities and assess how these factors affected patients' decision to pursue cervical cancer screening with visual inspection with acetic acid (VIA).

Methods: A total of 80 women of childbearing age who visited Kenjeran and Balongsari Public Health Centers for health assessments were involved in this study. Patients who agreed to participate in the study underwent a verbal questionnaire to evaluate various factors.

Results: Bivariate analysis concluded that knowledge, attitude, motivation, perception, socio-economic status, and travel time to health facilities were significantly different between women who received VIA screening and women who did not receive VIA screening ($p < 0.05$). The factors of knowledge, attitudes, motivation, perception, socio-economic status, and the travel time to health facilities accounted for 2.920-fold, 2.043-fold, 3.704-fold, 2.965-fold, 3.198-fold and 2.386-fold possibility, respectively, of patients to pursue cervical cancer screening with VIA. Multivariate analysis showed that perception, socio-economic status, and travel time to health facilities were the most important factors influencing whether or not women pursued VIA screening.

Conclusion: Knowledge, attitude, motivation, perception, socio-economic status, and travel time to health facilities appears to affect women's decision to pursue cervical cancer screening with VIA, with the largest intake being the motivational factor.

Key Words: cervical cancer, screening, early detection, visual inspection with acetic acid

Corresponding author: Sondang Sidabutar
E-mail: sondang_sidabutar73@yahoo.com

INTRODUCTION

Cervical cancer is the third most frequently diagnosed cancer among women worldwide, and it is the fourth leading cause of death from all cancers. In developed countries, cervical cancer is the second leading cause of death from a variety of diseases among women, and in developing countries, it is the leading cause of death among women [1,2]. Cervical cancer accounts for 15% of all cancers worldwide, with southeast Asia contributing 20% to 30% of all cancers [3].

Unlike many other cancers, cervical cancer tends to affect women early and affects women of reproductive age [4]. Differences in mortality between sub-Saharan African and North American countries are due to lack of access to effective screening and limited access to early detection and treatment facilities [5]. Prior to 1996, China experienced an increasing trend of cervical cancer due to Pap smear screening. The incidence of cervical cancer continued to increase af-



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ter 1996, largely attributed to the high human papillomavirus, lifestyle changes, and changes in sexual behavior among young people [6–8].

Cytology-based cervical cancer screening in developing countries is available in limited scope in private medical facilities and in clinics focusing on maternal-child health, eliminating the high-risk age group. Visual inspection with acetic acid (VIA) is a screening exam for cervical cancer that is simple to perform, produces accurate results, is cost-effective, and is readily accepted by women. VIA involves application of 4% acetic acid to the cervix, and can be performed by trained nurses or midwives [9–12]. PAP and VIA tests are complementary [13]. Women who receive VIA for cervical cancer screening once or twice at age of 35 years will reduce their lifetime risk of cervical cancer by 25% and 36% [11]. Surveys conducted in Indonesia, Malaysia, Philippines, Thailand, and Vietnam demonstrated that the intake screening remained low [12–14]. Until recently, no study has evaluated the influence of certain patient factors, such as knowledge, attitude, motivation, perception, socio-economic status, and travel time to health facilities, on the decision to undergo cancer screening with VIA. The purpose of this study was to evaluate these patient factors, and assess how they affect patients' decision to pursue VIA screening.

MATERIALS AND METHODS

1. Subjects

This study was observational in design. Subjects were women of childbearing age who visited Kenjeran and Balongsari Public Health Centers for health assessments. Patients who agreed to participate in the study underwent a verbal questionnaire to evaluate various factors.

2. Questionnaire

We interviewed patients using a verbal questionnaire to evaluate patient knowledge, attitude, motivation, perception, economic level and travel time to health facilities. We then assessed the degree to which these factors influenced patient decision to undergo cervical cancer screening with VIA. Prior to initiation of our study, the questionnaire was tested for validity and reliability.

3. Ethics

This study was approved by the Ethics Review Board of the Medicine Faculty of Airlangga University Surabaya, East Java, Indonesia (72-KEPK).

4. Statistical analysis

The collected data were tabulated and calculated for frequency

distribution. It was then subjected to bivariate and multivariate analyses. The analyses were conducted using IBM SPSS Statistics ver. 23.0 for Windows (IBM Co., Armonk, NY, USA).

RESULTS

This study involved 80 women who visited Kenjeran and Balongsari Public Health Centers for health check. Results showed that knowledge, attitude, motivation, perception, socio-economic status, and travel time to health facilities were significantly different between women who received VIA screening and women who did not receive VIA screening ($p < 0.05$). The factors of knowledge, attitudes, motivation, perception, socio-economic status, and the travel time to health facilities accounted for 2.920-fold, 2.043-fold, 3.704-fold, 2.965-fold, 3.198-fold and 2.386-fold possibility, respectively, of patients to pursue cervical cancer screening using VIA.

There was a relationship between knowledge, attitude, motivation, perception, economic level, and travel time to health facilities and a patient's decision to undergo cervical cancer screening with VIA. Perception, socio-economic status, and travel time to health facilities were the most important factors influencing whether or not women pursued VIA screening.

The following factors affected patients' decision to pursue VIA screening: knowledge, attitude, motivation, perception, socio-economic status, and travel time to health facilities.

DISCUSSION

Cervical cancer constitutes the disease most often found in poor communities and reflects gender and regional problems. It is not only caused by a disharmony of social and economic development, but also that of human resources and infrastructure for primary care [15]. Results showed that the factors of knowledge, attitude, motivation, perception, economic level, and travel time to health facilities were significantly different between the group performing VIA screening and that not performing VIA screening ($p < 0.05$). This indicates that the decision to screen using VIA in public health centers are determined by the factors of knowledge, attitude, motivation, perception, economic level and travel time to the health facilities. A previous study demonstrated that spousal support and the overriding opinion of the group leader were strong motivating forces for cervical cancer screening [16]. Another study found that certain cultural taboos may inhibit a woman's decision to pursue cervical cancer screening [17]. Among the factors studied, patients who exhibited

high motivation were 3.704 times more likely to receive cervical cancer screening with VIA. Thus, maternal motivation is an ideal target for cervical cancer prevention counseling. Our study supports previous study findings that the decision to pursue cancer screening with VIA is influenced by the experience of the provider performing the exam, the acceptance of the procedure by the general population, and the effectiveness of post-cryotherapy [18].

Multivariate analysis showed that patients who possessed a negative perception, were of low socio-economic status, and experienced increased travel time to health facilities were less likely to pursue cervical cancer screening with VIA. This indicates that a change in patient perception, improved socio-economic status, and increased access to health facilities would likely affect acceptance of VIA screening. This finding is in contrast to that of previous studies in China in which factors such as having children, patient perception of visiting a provider for regular health assessments, and moderate to high levels of knowledge were related to

VIA screening [19]. In the Pacific Islands, patient trust in annual screening, screening-related costs, and varying levels of support for alternative screening were the decisive factors with regard to a patient's decision to pursue cancer screening [20]. It is possible that these factors could be controlled by a structured teaching program [21].

In conclusion, patient knowledge, attitude, motivation, perception, socio-economic status, and travel time to health facilities appears to affect women's decision to pursue cervical cancer screening with VIA, with the largest intake being the motivational factor.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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