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Does Intervening in the Level of Knowledge About Cervical Cancer Increase Screening and Vaccination in Zambia?

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Abstract

Cancer of the cervix can be prevented by primary and secondary prevention methods. In order for these prevention methods to be practiced it is imperative that women are made aware of cervical cancer and the existing vaccination and cervical screening services available to them. A small intervention study to inquire on the effect of showing a short video about cervical cancer and its prevention proved to be an effective means of increasing awareness and knowledge among Zambian women residing in Lusaka. This brief report follows up on the 2017 intervention study in order to determine to what extent the increased knowledge has led to increased screening and vaccination practices among Zambian women and their daughters after a 3-year period. It is concluded that awareness of prevention services increases women's likeliness to seek screening services when given enough time. Unfortunately, we found no evidence of an increase of the number of daughters vaccinated in this study.

Keywords Cervical cancer · Intervention · Knowledge · Screening · Vaccination · Zambia

Introduction

Screening for cervical cancer has been conducted in Zambia for over 15 years [9]. The priority groups are women living with HIV (aged 15 to 59 years old) and HIV-negative women (aged 25 to 59 years old) at 3-year intervals regardless of HIV status (World Health Organisation [10]). Visual Inspection with Acetic Acid and digital Cervicography is the main mode of screening which is provided free of charge at government clinics [9]. Human papillomavirus (HPV) vaccination was started in 2013 and is administered using a school-based strategy targeting girls in grade 4 (aged 9 to 13 years old) and out-of-school girls aged 10 years old [6, 11].

Despite having these services, a number of barriers to the uptake of screening and vaccination have been identified by previous studies, which include but are not limited to religious and cultural beliefs [3, 4, 7], social influences [1, 5, 7], lack of noticeable symptoms, and administrative/policy restrictions (Nyambe et al., 2018). Apart from these, the article by [6] showed a significant correlation between knowledge about cervical cancer prevention and practicing screening or taking vaccination. [8] conducted a small intervention study to inquire on the effect of raising awareness and knowledge levels by showing a short video about cervical cancer and its prevention to a small sample of Zambian women and men. The study consisted of a pre-test and a post-test of knowledge that divided the total study group into a control group and an intervention group who were shown the video about cervical cancer. The 6-minute video that was aired at selected churches in Lusaka was developed by compiling sections of YouTube health promotion video clips and extracts from leaflets on cervical cancer in Zambia [8]. During debriefing, all participants received information about cervical cancer, its risk factors, symptoms, and prevention measures. The results showed a significant and meaningful increase in awareness and knowledge about cancer of the cervix. However, the impact on the practice of prevention was not effectively assessed due to the short follow-up period of 3 weeks between baseline and follow-up.

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This brief report follows up on this study and aims to determine to what extent increased knowledge has led to increased screening and vaccination practices of the female participants. It addresses the straightforward question, to what extent women participating in the original study [8] have significantly increased screening and vaccination of themselves and their daughters after a 3-year period.

Method

The intervention started at baseline in August 2017 with a first follow-up 3 weeks later in September 2107 and a final follow-up in August 2020. In the original study [8], sampling took place in two steps. Firstly, considering that the majority of Zambians are Christians, six churches were selected around Lusaka based on size, access, and denomination. Then, the male and female respondents who had to be aged 18 years and above volunteered to participate at the selected church.

Participants were randomly placed in either an intervention or control group. When filling in the baseline questionnaire, phone numbers were provided by all participants to assist with follow-up. For this study, to the extent possible, only women participating in the original study were traced and asked the questions (1) if they had screened and (2) if they had vaccinated their daughters. These variables had been measured also immediately after the original experiment [8]. Fisher's Exact Test was applied to detect differences in screening practice and vaccination between 2017 and 2020. Men were not contacted to avoid recall bias and participant fatigue if asked whether their partners practiced screening and if daughters were vaccinated for cervical cancer. It should be noted that not all participants had partners and daughters since the original study focused on awareness and knowledge of cervical cancer which is beneficial regardless of familial status.

Results

In total, 54 women participated at baseline assessment in 2017 of which 29 women could be relocated of whom 27 were willing or able to take another round of questioning on both screening and vaccination practices in 2020. Table 1 shows women's screening practice and vaccination of daughters at the two points in time (post-experiment, 3-year follow-up). Significant change (test-retest $n=29$; Fisher's Exact Test $p<0.001$) was found for practicing screening at the different points in time but not for vaccination. During the interviews, some of the women reported being afraid of the screening procedure, fear of contracting COVID-19, and lack of interest in screening as reasons for not having practiced cervical screening over the 3-year period. When it came to not practicing vaccination, some women reported not having daughters, or having daughters that were too young or too old to access the vaccine.

Discussion

Watching a short film on cervical cancer and its prevention enhanced women's awareness of screening and vaccination services [8]. In 2017 a total of 21.2% of women were screened at government health facilities in Lusaka [9], which falls within the CI range from 17 to 46% for the 32% of women that were screened in the sample as indicated in Table 1. The results are at the high end of the number of women screened in 2017. This may suggest that a disproportional number of women already had interest in preventing cervical cancer in the original study and the 55% in the year 2020 could be a somewhat optimistic outcome of the intervention. Nevertheless, the empirical evidence supports the hypothesis that intervening in the level of knowledge about cervical cancer increases screening rates of Zambian women over a period of 3 years.

Table 1 Prevention practice uptake between baseline assessment and 3-week follow-up in 2017 and 3-year follow-up in 2020

| | | 3-week follow-up screening 2017 ($n=38$) | | 3-year follow-up screening 2020 ($n=29$) | |
|--|-----|--|----|--|----|
| | | Yes | No | Yes | No |
| Baseline screening 2017 | Yes | 12 | 0 | 11 | 1 |
| | No | 0 | 26 | 5 | 12 |
| <i>P</i> ("yes") (95% CI) | | 0.32 (0.17–0.46) | | 0.55 (0.37–0.73) | |
| 3-week follow-up vaccination 2017 ($n=50$) | | 3-year follow-up vaccination 2020 ($n=27$) | | | |
| Baseline vaccination 2017 | Yes | 9 | 0 | 8 | 0 |
| | No | 0 | 41 | 0 | 19 |
| <i>P</i> ("yes") (95% CI) | | 0.18 (0.07–0.29) | | 0.29 (0.12–0.47) | |

However, when access to services is restricted and negative attitudes are not addressed the chances of practicing prevention are reduced. To further increase uptake, it may be beneficial to consider women's attitudes towards screening which may be affected by social influences and low health-seeking behaviors as identified in the study by [7]. Recognizing that Zambian women have expressed interest in self-sampled screening [6], perhaps introducing self-screening methods may provide comfort and reduce fear in women who are afraid of close contact because of COVID-19 as was expressed in this study.

In contrast to screening practices, vaccine uptake was not affected over the 3-year period as reported in Table 1. It must be noted that it is not evident to know how many girls have been vaccinated in Lusaka because of lack of readily available statistics in the public domain. Furthermore, the vaccine is only readily available to young girls especially those in schools excluding those who may be older and boys. Thus, women who have sons and or daughters outside the target age group are restricted from vaccinating their children. These restrictions are an effort to reduce vaccination costs as it is possible to achieve a herd immunity by focusing on only vaccinating girls (Nyambe et al., 2018). Vaccine hesitancy due to fear of future sterility, religious, and cultural beliefs in spite of having awareness and knowledge on cervical cancer was identified as a barrier to uptake among Zambians [7]. It is therefore imperative that misconceptions, negative beliefs, and attitudes towards vaccines in the school environment are addressed so that most girls in the target group are vaccinated [2], which will in turn prevent cervical cancer among future generations.

Conclusion

The aim of the present study was to learn to what extent women have significantly increased screening and vaccination of themselves and their daughters after a 3-year period. Once aware of prevention services, women are more likely to seek screening services when given enough time. Unfortunately, we found no evidence of an increase of the number of daughters vaccinated in this study.

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Author Contribution All authors contributed to the study conception and design. Material preparation and data collection were performed

by Anayawa Nyambe. Data analysis and the first draft were prepared by Jarl Kampen and Anayawa Nyambe. All authors commented on previous versions of the manuscript and all authors read and approved the final manuscript.

Code Availability Data was entered into MS Excel and analyzed in the Statistical Package for the Social Sciences (SPSS) software for Windows.

Declarations

Ethics Approval Ethical clearance was obtained from Eres Converge in Lusaka Zambia, reference number 2017-June-016.

Consent to Participate This research obtained consent from all respondents and their identities and information they provided are confidential.

Consent for Publication Not applicable.

Conflict of Interest The authors declare no competing interests.

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