

COMPREHENSIVE EVALUATION OF CERVICAL CANCER RISK QUESTIONNAIRES: ANALYZING DEMOGRAPHIC, BEHAVIORAL, ENVIRONMENTAL DIMENSIONS

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ABSTRAK

Latar Belakang: Kanker serviks merupakan salah satu jenis kanker yang dapat dicegah dan diobati jika terdeteksi sejak dini. Namun, masih banyak wanita yang mengalami kanker ini dengan konsekuensi serius. Keterlambatan skrining menjadi salah satu faktor risiko utama yang memengaruhi tingkat kejadian kanker serviks. **Masalah:** Penggunaan kuesioner untuk mengukur faktor risiko kanker serviks sering kali tidak mencakup evaluasi mendalam terhadap validitas, reliabilitas, dan kecocokan instrumen, sehingga diperlukan evaluasi menyeluruh terhadap kuesioner yang telah digunakan. **Tujuan:** Penelitian ini bertujuan untuk mengevaluasi kuesioner terkait faktor risiko kanker serviks dengan menilai validitas, reliabilitas, dan kecocokannya. **Metode:** Penelitian ini merupakan kajian sistematis berdasarkan pedoman *Preferred Reporting Items for Systematic Review and Meta-Analyses* (PRISMA). Data dikumpulkan dari studi yang diterbitkan antara tahun 2014 hingga 2024. Dari sembilan artikel yang diidentifikasi, dilakukan review terhadap karakteristik kuesioner, termasuk jumlah item, jenis item, dan metode validitas yang digunakan. **Hasil:** Sebanyak 56% studi memiliki kuesioner dengan kurang dari 50 item, dan seluruh kuesioner menggunakan format item tertutup. Dalam 44% studi, jumlah item tidak dicantumkan. Penggunaan kuesioner yang diadaptasi dari penelitian sebelumnya mencakup 44% dari seluruh studi yang dianalisis. Untuk validitas, sebanyak 44% studi menggunakan *Cronbach's alpha* sebagai ukuran. **Kesimpulan:** Kuesioner yang digunakan dalam studi terkait risiko kanker serviks menunjukkan variasi dalam karakteristik dan metode validitas yang digunakan. Penting untuk meningkatkan kualitas kuesioner melalui penyebutan jumlah item dan memastikan validitas serta reliabilitasnya secara menyeluruh.

Kata Kunci: *cronbach's alpha*, kuesioner, kanker serviks, reliability, validity,

ABSTRACT

Background: Cervical cancer is highly preventable and treatable if detected early; however, many women still face serious consequences due to this cancer. Late screening is one of the primary risk factors contributing to the incidence of cervical cancer. **Problem:** Many studies that use questionnaires to assess cervical cancer risk factors often lack a thorough evaluation of the instruments' validity, reliability, and appropriateness, underscoring the need for comprehensive assessment. **Objective:** This study aims to evaluate questionnaires related to cervical cancer risk factors by assessing their validity, reliability, and suitability. **Method:** A systematic review was conducted based on the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines, analyzing studies published from 2014 to 2024. Nine papers were reviewed, focusing on questionnaire characteristics, including the number of items, item types, and validity assessment methods. **Results:** The analysis showed that 56% of the studies used questionnaires with fewer than 50 items, and all studies used closed-item formats. In 44% of the studies, the number of items was not disclosed. The highest percentage of studies (44%) involved using questionnaires adapted from previous research. Regarding validity, 44% of the studies employed Cronbach's alpha as a measure. **Conclusion:** Questionnaires used in studies on cervical cancer risk factors exhibit variation in characteristics and validity assessment methods. To improve questionnaire quality, it is crucial to ensure clear disclosure of item counts and robust validity and reliability assessments.

Keywords: cronbach's alpha, cervical cancer, questionnaire, reliability, validity,

INTRODUCTION

In the world, cervical cancer ranks third in terms of cancer-related deaths among women and is the second most prevalent type of cancer to be diagnosed (Qureshi et al., 2019). This cancer usually affects women over the age of 30, starts in the cervix of the woman, and grows slowly. Once the cancer cells begin to proliferate, the aberrant cells may gradually spread throughout the body and have potentially harmful impacts on health (Nwabichie et al., 2018). Cervical cancer is seen as generally preventable and treatable if identified early because of its slow-growing nature, yet many women nonetheless encounter cervical cancer, which can have catastrophic repercussions. Thus, delayed screening becomes one of the risk factors for cervical cancer (Mago et al., 2022).

Numerous factors, including sociodemographic ones like education, income, race or ethnicity, and access to healthcare services, as well as everyday routines like exercise and nutrition, have an impact on this delay. Other sociodemographic characteristics that may impact someone's decision to undergo screening include employment, culture, psychology, and support from one's spouse. Age, parity, and the use of vaginal cleaners are other risk factors that might result in cervical cancer (Mago et al., 2022). The high incidence of cervical cancer in low- and middle-income nations is mostly caused by a lack of formal screening programs or a low screening test adoption rate (Qureshi et al., 2019). According to data from Global Cancer Statistics, there were 569,847 cases of cervical cancer worldwide in 2018; the disease also claimed 311,365 lives. Indonesia is the nation with the eighth-highest number of cervical cancer cases in Southeast Asia, according to Globocan data. With a yearly death rate of 18,279, Indonesia now has 32,469 instances

of cervical cancer or 17.2% of all cases (Mago et al., 2022).

Women's cervical cancer instances can be effectively prevented by screening and early detection. In the last 40 years, screening programs have lowered the incidence of cervical cancer by 65% in high-income nations (Qureshi et al., 2019). However, in developing nations, where socio-cultural hurdles are so numerous, cervical cancer screening has not been implemented equally. Because there are so many cervical cancer-related deaths each year and because screening for the disease has not been implemented equally, cervical cancer prevention through screening is a public health concern. Numerous researchers have looked into variables that affect the use of cervical cancer screening services among certain minority groups, including marital status, age, insurance status, access to healthcare facilities, perceived barriers, and regular healthcare providers. (McCarthy et al., 2021).

Questionnaires are being used more often to gauge and learn about patients' opinions on both medical and non-medical care. Instruments and scales are other names for questionnaires. Their ability to gather data on unobservable traits like attitudes, beliefs, intentions, or behaviors is a key asset. To extract latent information from individuals, many measures about a particular domain of interest are necessary. Nonetheless, each question or item's significance must be verified and assessed both separately and comprehensively. Surveys evaluate traits whose values might vary greatly depending on the situation, individual, and period. Error variance and systematic variation are important tools for determining qualities that cannot be seen. As a result, it is crucial to carefully assess tools that measure human characteristics. There is currently no research on the evaluation of risk factor assessment

questionnaires for cervical cancer screening, according to the literature. Thus, the purpose of this study was to analyze the questionnaire by evaluating the appropriateness, validity, and reliability of previously used questionnaires about risk factors for cervical cancer.(Alzaben et al., 2024).

MATERIALS AND METHODS

Methods

The methodology for this systematic review was guided by the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) statement. A comprehensive search was conducted across multiple databases, including PubMed, Scopus, and Google Scholar, for studies published between 2014 and 2024 that focused on risk factor assessment questionnaires for cervical cancer screening. Inclusion criteria were established to select peer-reviewed articles reporting on the validity and reliability of these questionnaires, while studies not published in English or those that did not utilize questionnaires were excluded. Following selection, the quality of the included studies was assessed using a standardized appraisal tool, and relevant data, such as demographic information and validity metrics, were extracted for narrative synthesis. This approach aimed to provide a thorough understanding of the effectiveness and applicability of the questionnaires used in this context, acknowledging potential limitations such as publication bias and methodological variability across studies.

MATERIALS

Data Collection Criteria

The inclusion criteria in this review article were (i) studies related to the effects that included the use of questionnaires to assess cervical cancer risk factors; (ii)

studies related to cervical cancer; (iii) articles in English; (iv) full-text and open-access articles published in 2014-2024. The exclusion criteria in this review article were (i) studies related to other than those that included the use of questionnaires to assess cervical cancer risk factors; (ii) studies related to other than cervical cancer; (iii) articles in a foreign language other than English; (iv) articles not in full-text and open-access articles published before 2014.

Article selection and search strategies

The databases used in this study were PubMed, Researchgate, and Google Scholar with a period of 10 years, namely from 2014 - 2024. The data used in the systematic review were primary data collecting published articles from the PubMed, Researchgate, and Google Scholar databases with the keywords "cervical cancer risk factor questionnaire" or "cervical cancer survey instrument" or "cervical cancer risk assessment tool". Furthermore, the articles were filtered and selected based on their titles and abstracts.

Data analysis

After filtering the results from numerous databases of titles and abstracts and obtaining the complete text, the author conducts a feasibility test by reading the entire article using the inclusion and exclusion criteria.

RESULTS

Strategies for choosing articles and conducting searches

The results of 216 articles were filtered based on duplication after choosing a focused and methodical article search approach utilizing the Google Scholar, PubMed, and Researchgate databases, as shown in Figure 1. Following that, 63 articles were obtained from the 216 articles whose titles and abstracts satisfied the

inclusion criteria. These 63 papers were screened to determine which full-text articles could be taken and evaluated for eligibility. At this point, 54 papers were found that did not fit the eligibility requirements since they omitted

information about the questionnaire's design, validation procedure, and reliability. Nine research articles that were pertinent to the topic of discussion were found in the end.

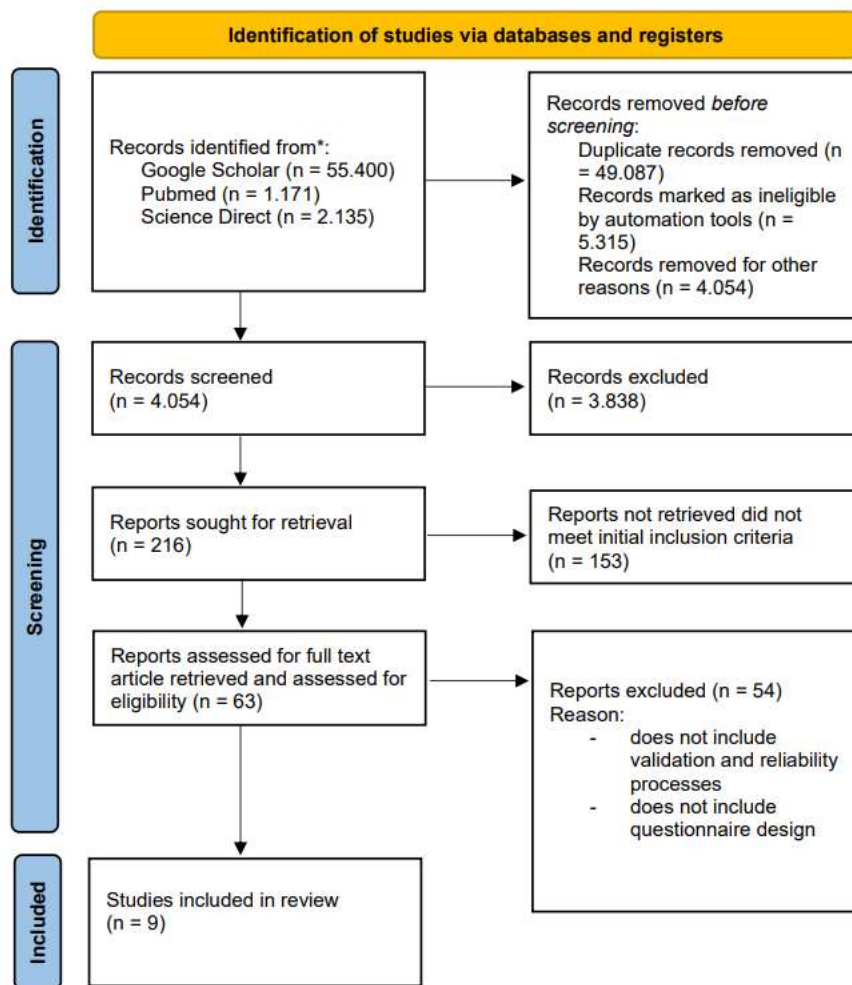


Figure 1. PRISMA diagram for selection of studies included in a systematic review

Records were identified from several databases for the initial screening phase. After the removal of duplicate records (n = 49,087), the search yielded the following results from each source: 58,400 records from Google Scholar, 1,171 records from PubMed, and 2,135 records from Science Direct. Automation tools flagged 5,315 records as ineligible, and 4,054 records were removed for other reasons.

This left a total of 4,054 records, which were screened further. After this screening, 3,838 records were excluded as

they did not meet the initial inclusion criteria, leaving 216 reports to be assessed for retrieval. Of these, 153 reports were successfully retrieved, while others could not be retrieved as they failed to meet initial inclusion criteria.

A detailed assessment of the full-text articles resulted in the exclusion of 54 reports, with reasons including a lack of validation and reliability processes, as well as the absence of questionnaire design. Ultimately, nine studies were included in the final review.

Table 1. Literature Characteristics Results

	Nwabichie et al., 2018 (Nwabichie et al., 2018)	Fitzpatrick et al., 2020 (Fitzpatrick et al., 2020)	Rodrigues et al., 2024 (Rodrigues et al., 2024)	Nimani et al., 2024 (Nimani et al., 2024)	Dozie et al., 2023 (Dozie et al., 2023)	George T, 2021 (George T, 2021)	Jiaying et al., 2019 (Jiaying et al., 2019)	Mwalwanda et al., 2024 (Mwalwanda et al., 2024)	Chandana et al., 2020 (Chandana et al., 2020)
Publication Year	2018	2020	2024	2024	2023	2021	2019	2024	2020
Country	Lembah Klang, Malaysia	Hurungwe, Zimbabwe	Karnataka, India	Ethiopia	Southeast Nigeria	Kerala, India	Kuala Lumpur, Malaysia	Northern Malawi	Karnataka, India
Research Design	cross-sectional study	cross-sectional study	Descriptive survey design	cross-sectional study	cross-sectional descriptive	cross-sectional study	cross-sectional descriptive	cross-sectional descriptive	cross-sectional study
Participant	Women of African descent in the Klang Valley, Malaysia, attending specific church services	In the Hurungwe district of Mashonaland West, rural northwest Zimbabwe, women were randomly selected for identification in Wards 13 and 15.	female employees at the Karnataka tertiary care hospital in the Udupi district	mothers who go to maternity and child health service units (FP, immunization, ANC, PNC, and outpatient department for children under five)	women in their productive years who responded in Owerri Municipal LGA.	Women in Marayoor Pachayath, Idukki district, Kerala, India, who were willing to take part in the study and were in the age range of thirty to sixty years old and could understand Malayalam were chosen as subjects.	Over eighteen-year-old native Malaysian ladies living in the Kuala Lumpur area	Every woman employed by Karonga District Hospital	Randomly chosen women from B.M. Shrinagar, Bannimantap, Kumbarkoppulu, Medaar Block, and Metgalli, aged 18 to 60.
Number of Participants	320	679	340	916	432	430	384	70	232

Age range of participants	18 – 69 years old	30 – 65 years old	21 – 58 years old	30 – 49 years old	15 – 49 years old	30 – 60 years old	18 – 60 years old	19 – 59 years old	18 – 60 years old
Education	1. College: 275 2. Non-college: 45	1. Not mentioned: 163 2. O' Level: 177 3. A' Level: 336 4. Grade 7: 336	1. Elementary: 136 2. Intermediate: 193 3. Bachelor's: 11	1. Formal education: 705 2. Informal education: 211	1. Elementary: 127 2. Secondary: 100 3. College: 135 4. Non-formal education: 70	-	1. Secondary school: 48 2. Pre-university: 155 3. Bachelor's degree: 176 4. Master's degree: 13	1. Malawi School Education Certificate: 29 2. Certification: 9 3. Diploma: 23 4. Bachelor's Degree: 9	1. Illiterate: 34 2. Primary school: 59 3. Secondary school: 71 4. Pre-university: 32 5. Bachelor's degree: 32 6. Postgraduate: 13
Marital status	1. Married: 226 2. Unmarried: 94	Married: 679	Married: 340	1. Married: 896 2. Unmarried: 20	1. Married: 100 2. Unmarried: 80 3. Divorce: 195 4. Widow: 57	Married: 430	1. Married: 179 2. Unmarried: 213	1. Married: 32 2. Unmarried: 26 3. Divorce: 5 4. Widow: 7	1. Unmarried: 5 2. Married: 198 3. Widow: 8

Considering the outcomes shown in Table 1. Nine separate towns or countries—namely, Malaysia, West Zimbabwe, Karnataka, Ethiopia, Southeast Nigeria, India, and North Malawi—are known to have contributed to the pieces of literature that were investigated. A cross-sectional study, a descriptive survey design, and a descriptive cross-sectional were the research designs employed. According to the findings from the nine pieces of literature, the participants were mostly married women between the ages of 15 and 65 who were of productive age and whose educational attainment ranged from low to high.

Questionnaire-Based Screening

The data summary of the questionnaire is displayed in Table 2. The number of questionnaire items is divided into three parts to

facilitate analysis. The questionnaires used in the majority of research studies (56%) consist of five articles with an average of roughly fifty questions that are divided into several questionnaire sections. The number of unidentified research items (44%) consists of 4 articles. This is because the author of the article failed to explain the questionnaire's compartment and failed to include a link that readers may use to obtain information about the number of questions on the questionnaire. Regarding the kind of question, it was found that the majority of the research (100%) used the type of closed-ended method. Additionally, it was discovered that 2 studies (22%) created their questionnaires, 4 studies (44%) used prior studies' questionnaires, and 3 studies (33%) translated previous studies' questionnaires into the local languages.

Table 2. Basic Information about the Questionnaire

	N	%
Number of question		
>100	0	0%
50–100	0	0%
<50	5	56%
N/A	4	44%
Types of Questionnaires		
Close	9	100%
Open	0	0%
Questionnaire Source		
Developed by researchers themselves		
Adopted from previous research	2	22%
	4	44%
The questionnaire from previous research was translated	3	33%

Evidence of Validity and Reliability of the Questionnaire

Table 3 shows the questionnaire's validity results. All listed investigations established the research questionnaire's intended measurements.

Tabel 3. Results of Validity and Reliability Evaluation of Questionnaire

Proof of Validity	N	%
Domain		
Attitude + behavior + knowledge	1	11%
Attitude + behavior	4	44%
Attitude + knowledge	1	11%
Behavior + knowledge	3	33%
Evaluation		
Likert scale	4	44%
Number of frequencies	5	56%
Leveling		
<i>Cronbach's alpha</i>	4	44%
<i>Rasch item reliability</i>	2	22%
N/A	3	33%

According to the findings, 44% of the research used questionnaires designed to evaluate behavior and attitude simultaneously, while 33% of the studies used questionnaires designed to collect

information on behavior and knowledge simultaneously. Of the studies that employed evaluation inference, 44% used a Likert scale, and 56% used evaluation with frequency counts in their surveys. In 44% of the research, Cronbach's alpha was used to support the validity of generalization inferences, while in 22% of the studies, Rasch item reliability was used as evidence of validity. Reliability data for the questionnaires were not provided by the remaining 33% of the studies. Nwabichie et al. (2018), for instance, employed a questionnaire using a five-point Likert scale. All of the items had Cronbach's alpha values of 0.678, which suggests that the test rating scale has acceptable internal consistency (Nwabichie et al., 2018). Furthermore, out of the four studies that provided Cronbach's alpha, three of them provided precise values, ranging from 0.6 to 0.96 (Jiaying et al., 2019; Nimani et al., 2024; Nwabichie et al., 2018). The remaining studies indicated that the alpha value was within a specified range but did not provide the exact alpha value for example from 0,8 to 0,93 this is still regarded as supporting data for the generalization conclusion. Out of all the investigations, only two (1.69%) employed Rasch measurement, while three (2.54%) performed correlational analysis on questionnaire questions. This conclusion is supported by the fact that at least one type of factor analysis was used in the other research. In addition, an initial reliability analysis was carried out to investigate the subscales' internal consistency. To identify problematic items—items with little to no link with other items—inter-item correlation analysis was also carried out.

DISCUSSION

The main tool used to gather quantitative primary data is the questionnaire. With the use of questionnaires, quantitative data may be

gathered in an organized way that ensures internal consistency and coherence for analysis (Ranganathan & Caduff, 2023; Roopa, 2012). The majority of the recognized studies had fewer than 50 items in the questionnaire, and several studies did not disclose the number of items at all, according to the results gathered about this topic. Some studies indicated that the complete questionnaire could be obtained in the appendix or supplementary files, but the authors did not supply this information. These studies did not specify the total number of questionnaire items. This might be a problematic approach since it can be hard for other researchers to assess the validity of the research instrument and reduce the likelihood of future replication studies due to the absence of precise information about the instrument.

Research questions are employed to concentrate just on one question—rather than on a range of potential topics. Determining the required information is crucial in creating a suitable questionnaire since the information required influences the questions that will be created. Selecting the best survey type for the task is necessary after determining the data required for the research (Taherdoost, 2022). The findings indicated that closed questions are the most often used questionnaire item. There are about four different kinds of survey questionnaires, and the type used depends on the survey's objectives. Contingency/Cascade Format questions, Matrix questions, Closed questions, and Open questions are the four categories (Ranganathan & Caduff, 2023; Taherdoost, 2022). Questions with cascade formats or contingency questions are those that are only answered if the respondent provides a specific answer to the preceding question (Ranganathan & Caduff, 2023). This avoids asking people questions that do not apply to them (Krishnappa et al., 2011). Matrix

questions are those that have several questions with the same response categories. The list of questions is on the side, and the response categories are at the top of a matrix formed by the questions arranged one below the other. Both page space and respondent time are effectively used in this way. Only a predetermined set of answers is available to respondents (Ranganathan & Caduff, 2023; Roopa, 2012). The next type of questions are open-ended questions, which are choices or categories that allow respondents to react in their own words without being constrained by a list of predetermined options. Completely unstructured forms, word associations, finishing phrases, finishing stories, and finishing visuals are some examples of open-ended question types. A closed scale is the final and most widely utilized form. Closed-ended question types include multiple choice, Yes/No questions, and scaled questions, including the Likert scale and semantic difference scale. A psychometric scale called the Likert scale is frequently employed in studies where social attitudes are gauged using questionnaires (Ranganathan & Caduff, 2023; Roopa, 2012).

There are a lot of benefits to these questions, particularly when it comes to lowering stress levels during the questionnaire completion process (Desai, 2019). Additionally, because closed surveys don't require a lot of communication skills from respondents, they may respond to closed questions fast, allowing researchers to ask more questions on broader subjects. In addition, closed questions about attitudes and behavior are simpler to respond to because the approach involves selecting one choice from a range of alternatives as opposed to making haphazard decisions. Researchers are able to boost respondents' interest in their involvement in filling out the questionnaire by making it easy for

respondents to answer. An further benefit is that closed questions are simple to pre-code, making it simpler to insert responses into a response database. With spreadsheet software, fundamental analysis such as frequency distributions may be performed easily (Hyman & Sierra, 2016). This is consistent with the findings of several earlier studies, the majority of which recognize the benefits of closed questions, such as the ease of data entry and coding for closed questions, the suitability of closed question responses for quantitative analysis, and the ability of closed question response options to aid respondents in more accurately recalling pertinent information (Hadler, 2023).

Of the studies that were conducted, 89% had sample sizes ranging from 100 to 500, and only 11% had less than 100 participants. When conducting research with questionnaires, sample size is crucial. Previous studies offer multiple approaches for calculating sample size. These requirements can be broken down into a number of categories, including population-sample tables, item-sample ratios, and general sample size calculation guidelines. Analysis-based sample size estimation should not be considered the exclusive or ideal option. To choose the optimal sample size for a research study, researchers must read and comprehend the important factors and power. As a result, factors related to the study's environment, including the nature of the research problem, research questions, research methodology, and population characteristics, can be taken into account when calculating sample size. Furthermore, it's critical to realize that a sample's power is determined by the accuracy with which it was chosen, not by its size or quantity. As a result, a carefully chosen small sample (150 or more) has greater meaning than a large sample (300 or more) with less precise selection (Memon et al., 2020).

For parametric procedures, some experts recommend a minimum of thirty participants; others argue that the research design should dictate the sample size (Andrade, 2020; Serdar et al., 2021). Exploratory factor analysis can be used in questionnaire-based research with Likert scales to find underlying components that explain variation in participant replies; thus, some general prerequisites and acceptable statistical assumptions need to be met. A high sample size is advised for the findings of exploratory factor analysis to be repeated or generalized (Watkins, 2018). While smaller sample numbers may lead to reduced reliability, they are deemed appropriate for the psychometric validation technique of the Rasch assessment (Dabaghi et al., 2020). In a polytomous Likert scale questionnaire validated using Rasch measurement, a minimum sample size of 100 is advised to obtain good stability in item difficulty levels (Linacre, 2024).

It was discovered that although 56% of the research used frequency estimates, 44% of the studies in the data set employed the Likert scale. The Likert scale was employed as the data collection tool in the study, which used a questionnaire translated from English into the local language. It is well known that the Likert scale is a popular quantification technique in surveys that use a second language (L2). Questionnaires are typically employed in L2 research to examine psychological factors including learner beliefs, methods, and motives that are difficult to observe firsthand. Explanatory inference is utilized when a connection is found between the observed scores and the underlying construct. The Likert scale is commonly employed in data gathering techniques due to its ability to assess a single variable using multiple items. Additionally, once the original questionnaire has been tested, questions that

do not perform effectively might be altered or removed by using statistical techniques like factor analysis to assess the item's construct representation (Zhang & Aryadoust, 2022).

It is necessary to consider the instrument or measuring tool's validity and reliability. The degree to which a measurement yields consistent findings is known as reliability. Some of the reliabilities that must be examined during the pre-testing of the questionnaire are internal consistency, test-retest, and inter-interviewer reliability. When a questionnaire is used for an interview, inter-interviewer reliability is used to evaluate how well various interviewers interpret the same phenomenon consistently. Reliability between tests measures how consistently responses are provided throughout time. Kappa statistics are used to analyze test-retest and inter-observer reliability. If the reliability is 80% or more, it is considered satisfactory. The measuring tool's reliability is evaluated by calculating the degree to which the items accurately represent the same construct. The Cronbach's-alpha statistical test is used to state this. If the value is 80% or higher, it is considered acceptable.

Certain studies that use tools and questionnaires have had their validity checked by earlier research. It is assumed that instruments that have been validated will not need to be validated again after they are adopted. On the other hand, the use and interpretation of scores or data need to be verified (Hawkins et al., 2019). As such, when employing questionnaire adoption, some work needs to be put into revalidating the interpretation and use of questionnaire results, assessing the instrument's validity to determine the extent to which the questionnaire captures the information it is meant to capture. Content validity, face validity, criterion validity, and construct

validity are the four categories of questionnaire validity. The degree to which an instrument fully captures a given social idea is known as content validity. The main technique for figuring out if a test or instrument has content validity is expert opinion. This kind of validity does not make use of statistical testing. One can move on to face validity if content validity is deemed appropriate. When both instruments are given at the same time, it is referred to as contemporaneous; alternatively, it can be predictive, in which case the new instrument is given after a certain amount of time, and the predictor instrument is given initially. The degree to which a new questionnaire fits (conforms) to preexisting theories or hypotheses about the concept/construct being measured is known as construct validity (Ranganathan & Caduff, 2023; Roopa, 2012).

The review of the nine articles mentioned above revealed that several studies evaluated content validity through expert assessment. For example, Nwabichie et al. (2018) conducted the study with health promotion experts, and Rodrigues et al. (2024) provided instruments to seven experts in the fields of nursing, medical oncology, obstetrics and gynecology, and community medicine. Consequently, when employing questionnaire adoption, some work needs to be done to revalidate the interpretation and use of questionnaire results. Reducing the incidence and consequent death from invasive cervical cancer is the ultimate aim of cervical cancer screening. The conclusion that screening does provide protective effects and is linked to a decrease in important outcomes is supported by the evidence that is currently available. When compared to no screening, an RCT conducted in India revealed that even a single lifetime screening test dramatically decreased mortality and the

incidence of advanced cervical cancer (Peirson et al., 2013).

The Journal Article Reporting Standards (JARS) criteria guide the development of demographic questions. Key demographics to report include age category, gender identity assigned at birth, ethnicity and race, and social status. One of the sociodemographic questions in the Nimani et al., 2024 study employed a closed question with a range of preselected ages. Researchers who have employed closed-response questions typically categorize age into a small number of groups, leading to a wide variation in development. Age-related questions are among the more delicate ones, therefore it's usually not a good idea to use an open-ended question style and require respondents to enter an exact age (Toor, 2020). It is important to note that one of the authors' recommendations is to substitute phrases like "elderly," "older people," "older persons," "elderly dependents," "seniors," and "senior citizens" with age-inclusive language. Terms they advise using include: "older adults," "older persons," and "aging population." (Hughes et al., 2022). In the study by Nimani et al., 2024, a closed-ended question asked "What is your ethnicity?" also included questions about race. with the answer selections "Tigray", "Amhara", "Other".

One sociodemographic factor that was taken into consideration in the results of the review of the features of the nine articles, as shown in Table 1, was the respondents' educational attainment. Questions about schooling were also written in the form of closed questions in the Nimani et al., 2024 study. The answer choices included "not writing and reading," "only writing and reading," "primary," "secondary," "vocational," and "college." Surveys are frequently used to evaluate education, but researchers don't always ask the same questions. Researchers that are

interested in learning more about their sample may find it helpful to ask further questions concerning schooling. The ones listed below are the most often recommended and utilized categories for classifying marital status in the relationship dimension question: married, widowed/widower, divorced, separated, and never married (Hughes et al., 2022). These choices of responses and categories were also used to classify relationship dimension questions in the Nimani et al., 2024 study.

CONCLUSION

In this study, nine papers were reviewed, and the results showed that, in terms of questionnaire characteristics, 56% of the identified studies had fewer than 50 items, and 89% of the studies employed closed items. A problematic practice in several research is the omission of the item count. The greatest percentage of research, 44%, used the earlier questionnaire. Up to 44% of respondents utilized Cronbach's alpha to assess the validity of the questionnaire.

BIBLIOGRAPHY

- Alzaben, A.S.; Almansour, M.; Alzahrani, H.S.; Alrumaihi, N.A.; Alhamed, N.M.; Albuhayjan, N.A.; Aljammaz, S.A. Development of Valid and Reliable Questionnaire to Evaluate Knowledge, Attitude, and Practices (KAP) of Lifestyle Medicine Domains. *Healthcare* 2024, 12, 1652. <https://doi.org/10.3390/healthcare12161652>
- Andrade, C. (2020). *Learning Curve Sample Size and its Importance in Research*. 2019–2020. <https://doi.org/10.4103/IJPSYM.IJPSYM>
- Chandana, H., Madhu, B., & Murthy, M. R. N. (2020). *Awareness about cervical cancer among women residing in urban slums of Mysuru city of*

- Karnataka , India : *A cross-sectional study*. 8(September 2019), 835–839.
- Dabaghi, S., Esmailzadeh, F., & Rohani, C. (2020). *Application of Rasch Analysis for Development and Psychometric Properties of Adolescents ' Quality of Life Instruments: A Systematic Review Application of Rasch Analysis for Development and Psychometric Properties of Adolescents ' Quality of Life Instrum.* <https://doi.org/10.2147/AHMT.S265413>
- Desai, S. C. (2019). *Comparing the use of open and closed questions for Web-based measures of the continued-influence effect*. 1426–1440.
- Dozie, U. W., Ezeala, O. V., David, C. I., Dozie, K. C. N., Chukwuocha, U. M., Iwuala, C. C., Osuoji, N. J., Okoro, C. C., Chukwu, O. R., Eneh, S. C., & Dozie, I. N. S. (2023). Factors associated with health seeking delay in the screening of cervical cancer among women in Imo state, south Eastern Nigeria. *Cancer Treatment and Research Communications*, 37(September). <https://doi.org/10.1016/j.ctarc.2023.100765>
- Fitzpatrick, M., Pathipati, M. P., McCarty, K., Rosenthal, A., Katzenstein, D., Chirenje, Z. M., & Pinsky, B. (2020). Knowledge, attitudes, and practices of cervical Cancer screening among HIV-positive and HIV-negative women participating in human papillomavirus screening in rural Zimbabwe. *BMC Women's Health*, 20(1), 1–10. <https://doi.org/10.1186/s12905-020-01017-2>
- George T, J. (2021). Factors influencing utilization of cervical cancer screening services among women – A cross sectional survey. *Clinical Epidemiology and Global Health*, 11(April), 100752. <https://doi.org/10.1016/j.cegh.2021.100752>
- Hadler, P. (2023). *The Effects of Open-Ended Probes on Closed Survey Questions in Web Surveys*. 4–5. <https://doi.org/10.1177/00491241231176846>
- Hawkins, M., Elsworth, G. R., & Osborne, R. H. (2019). *Questionnaire validation practice : a protocol for a systematic descriptive literature review of health literacy assessments*. 1–6. <https://doi.org/10.1136/bmjopen-2019-030753>
- Hughes, J. L., Camden, A. A., Yangchen, T., Smith, G. P. A., Domenech Rodríguez, M. M., Rouse, S. V., McDonald, C. P., & Lopez, S. (2022). INVITED EDITORIAL: Guidance for Researchers When Using Inclusive Demographic Questions for Surveys: Improved and Updated Questions. *Psi Chi Journal of Psychological Research*, 27(4), 232–255. <https://doi.org/10.24839/2325-7342.jn27.4.232>
- Hyman, M. R., & Sierra, J. J. (2016). *Open-versus close-ended survey questions*. September 2015.
- Jiaying, L., Mohammad, A., Keshavarzi, F., & Bheemavarapu, H. (2019). Assessment of knowledge , attitude and barriers towards cervical cancer vaccination among Malaysian women. *Le Pharmacien Hospitalier et Clinicien*, 54(3), 279–287. <https://doi.org/10.1016/j.phclin.2018.12.001>
- Krishnappa, P., Piddennavar, R., & Mohan, M. (2011). *Art and Science of Questionnaire Development Art and Science of Questionnaire Development*. January 2017, 3–8.
- Linacre, J. M. (2024). *Sample Size and Item Calibration [or Person Measure] Stability*. July.
- McCarthy, A., & Reddy, P. (2021). Uptake and Barriers to Cervical Cancer Screening Among HIV-Positive Women: A Systematic Review. *BMC Women's Health*, 21(1), 12.

- doi:10.1186/s12905-021-01490-0.
Retrieved from BMC Women's Health
- Mago, H. C., Kok, T., & Santosa, W. N. (2022). *Profil Faktor Risiko Dan Siodemografis Kanker Serviks : Sebuah Kajian Sistematis*. 3(June).
- Memon, M. A., Ting, H., & Cheah, J. (2020). *Sample Size for Survey Research : Review and Recommendations Journal of Applied Structural Equation Modeling SAMPLE SIZE FOR SURVEY RESEARCH : REVIEW AND*. 4(June). [https://doi.org/10.47263/JASEM.4\(2\)01](https://doi.org/10.47263/JASEM.4(2)01)
- Mwalwanda, A., Chavura, E., Chisale, M. R. O., & Chingatchifwe, B. (2024). *Cervical cancer screening among female health workers : Evidence from a secondary health facility in Northern Malawi*. 37(December 2023).
- Nimani, T. D., Bayisa, F. S., Jimma, S. D., & Assefa, A. T. (2024). Knowledge and attitude toward cervical cancer screening among women aged 30–49 years attending selected health facilities in Ethiopia: Using structural equation model. *Heliyon*, 10(10). <https://doi.org/10.1016/j.heliyon.2024.e31596>
- Nwabichie, C. C., Manaf, R. A., & Ismail, S. B. (2018). Factors affecting uptake of cervical cancer screening among African Women in Klang Valley, Malaysia. *Asian Pacific Journal of Cancer Prevention*, 19(3), 825–831. <https://doi.org/10.22034/APJCP.2018.19.3.825>
- Peirson, L., Fitzpatrick-lewis, D., Ciliska, D., & Warren, R. (2013). *Screening for cervical cancer : a systematic review and meta-analysis*.
- Qureshi, S. A., Gele, A., Kour, P., Møen, K. A., Kumar, B., & Diaz, E. (2019). A community-based intervention to increase participation in cervical cancer screening among immigrants in Norway. *BMC Medical Research Methodology*, 19(1), 1–8. <https://doi.org/10.1186/s12874-019-0795-8>
- Ranganathan, P., & Caduff, C. (2023). *Designing and validating a research questionnaire - Part 1*. 1–4. <https://doi.org/10.4103/picr.picr>
- Rodrigues, S. B., Sheilini, M., & Nayak, R. (2024). Awareness, risk for cervical cancer and readiness for Papanicolaou (Pap) testing among female housekeeping staff in a tertiary care hospital Karnataka-A quantitative approach. *Clinical Epidemiology and Global Health*, 25(January), 101503. <https://doi.org/10.1016/j.cegh.2023.101503>
- Roopa, S. (2012). *Questionnaire Designing for a Survey I*. 46(December), 273–277.
- Serdar, C. C., Cihan, M., & Serdar, M. A. (2021). *Sample size, power and effect size revisited: simplified and practical approaches in pre-clinical, clinical and laboratory studies*. 31(1), 1–27.
- Taherdoost, H. (2022). *Designing a Questionnaire for a Research Paper : A Comprehensive Guide to Design and Develop an Effective Questionnaire Designing a Questionnaire for a Research Paper : A Comprehensive Guide to Design and Develop an Effective Questionnaire*. April. <https://doi.org/10.51983/ajms-2022.11.1.3087>
- Toor. (2020). *Demographic survey questions that yield valuable insights*. <https://www.qualtrics.com/blog/demographic-survey-questions/>
- Watkins, M. W. (2018). *Exploratory Factor Analysis : A Guide to Best Practice*. <https://doi.org/10.1177/0095798418771807>
- Zhang, Y., & Aryadoust, V. (2022). *education sciences Second Language Research*.