

# ANALYSIS OF YOUTUBE VIDEOS ADDRESSING THE INDWELLING URINARY CATHETERIZATION PROCEDURE IN WOMEN

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**ABSTRACT:** This is a descriptive research with a quantitative approach, carried out on the website YouTube to characterize YouTube videos addressing the indwelling urinary catheterization procedure in women. A search of the videos was carried out in September 2014 using the descriptor “urinary catheterization”. Twenty-nine videos were analyzed, only three of which were in accordance with the standards established in the literature; among the main errors found, the absence of registration in the medical records, hand washing and use of the same glove for antisepsis and catheter insertion are highlighted. Even though YouTube is currently a widespread tool, there is a lack of videos reproducing the procedure according to literature recommendation, which can negatively influence the population that uses it to correct their knowledge.

**DESCRIPTORS:** Urinary catheterization; Nursing; Webcasts; Educational technology.

## ANÁLISE DE VÍDEOS DO YOUTUBE QUE ABORDAM A TÉCNICA DE CATETERISMO URINÁRIO DE DEMORA FEMININO

**RESUMO:** Trata-se de uma pesquisa descritiva, de abordagem quantitativa, realizada no sítio de compartilhamento *YouTube*, cujo objetivo foi caracterizar os vídeos do *YouTube* que abordam a técnica de cateterismo urinário de demora feminino. A busca dos vídeos foi realizada em setembro de 2014 utilizando-se o descritor controlado “cateterismo urinário”. Foram analisados 29 vídeos, dos quais apenas três estavam de acordo com os padrões estabelecidos pela literatura; dentre os principais erros encontrados, destacam-se a ausência de registro no prontuário, da lavagem das mãos e a utilização da mesma luva para a antisepsia e inserção do cateter. Apesar de o sítio de compartilhamentos de vídeo *YouTube* ser uma ferramenta amplamente difundida atualmente, há uma carência de vídeos que reproduzam a técnica de acordo com o que é preconizado na literatura, o que pode influenciar negativamente a população que o utiliza para fixar o conhecimento.

**DESCRIPTORIOS:** Cateterismo urinário; Enfermagem; Webcasts; Tecnologia educacional.

## ANÁLISIS DE VIDEOS DE YOUTUBE CON LA TEMÁTICA TÉCNICA DE CATETERISMO URINARIO DE DEMORA FEMENINO

**RESUMEN:** Investigación descriptiva, de abordaje cuantitativo, realizada en el sitio de compartir *YouTube*, cuyo objetivo fue caracterizar los videos de *YouTube* que abordan la técnica de cateterismo urinario de demora femenino. La búsqueda de los videos fue realizada en septiembre de 2014 utilizándose el descriptor “cateterismo urinario”. Fueron analizados 29 videos, de los cuales solamente tres estaban en los patrones establecidos por la literatura; entre los principales errores encontrados están la ausencia de registro en el prontuario, no lavaje de las manos y la utilización del mismo guante para la antisepsia e inserción del catéter. A pesar del sitio de video *YouTube* ser una herramienta muy difundida actualmente, no hay videos que muestren la técnica de acuerdo con lo que se preconiza en la literatura, lo que puede influenciar de modo negativo la población que lo utiliza para fijar el conocimiento.

**DESCRIPTORIOS:** Cateterismo urinario; Enfermería; Webcasts; Tecnología educacional.

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## INTRODUCTION

The learning process of undergraduate courses in health undergoes several transformations in order to establish effective strategies for the improvement of students' knowledge construction mechanisms<sup>(1-2)</sup>.

In this context, new teaching technologies are alternatives coherent with the changes in the learning process because they qualify the training of health professionals and consolidate the interface between theory and practice<sup>(1)</sup>.

Accordingly, the Information and Communication Technologies (ICTs) are considered as technological learning tools for training in nursing, allowing to assist, gather and ensure improved information distribution to students<sup>(2)</sup>.

In the meantime, videos are highlighted as educational technologies, since they enable direct practical activities by simulating the healthcare and patient care environments. These aspects can help students to solve their main needs and doubts, before their insertion into real practice<sup>(2)</sup>. Due to these characteristics, technical high school students and undergraduate students commonly use videos.

Among reference sources of educational videos, the Internet stands out, particularly the virtual platforms like YouTube and Google. However, the videos indexed on these platforms do not guarantee effectiveness and quality of information, demanding appropriate screening, based on teaching protocols.

Thereby, it is necessary to analyze the quality of the videos published because there is the possibility to learn something wrong and, consequently, implement the procedure incorrectly<sup>(3)</sup>.

In this study, the indwelling urinary catheterization procedure in women is highlighted, which involves the insertion of a latex or plastic probe inside the urinary bladder, reaching this through the urethra. The catheter remains for a longer time in the patient, being removed when (s)he is able to urinate voluntarily<sup>(4)</sup>.

An incorrect catheterization procedure can cause harms to the patient, which includes urinary infection, bleeding, bladder stones, neurogenic bladder and tissue trauma<sup>(4)</sup>. In this regard, the

importance of constant updating of professionals is noteworthy, as well as effective academic training.

Thus, following the observation that the videos posted on YouTube are widely used by students and nursing professionals as a research source<sup>(3)</sup> and, as such videos do not have a quality assurance system to ensure their upload, it becomes relevant to investigate: what are the features of the videos disclosed on YouTube regarding the indwelling urinary catheterization procedure in women?

Therefore, the aim was to characterize the videos on YouTube addressing the indwelling urinary catheterization procedure in women.

## METHOD

This is a descriptive research with a quantitative approach. The data were collected from the website YouTube, which has the virtual address: [www.youtube.com](http://www.youtube.com). Although there are other video sharing websites, YouTube has been chosen because it is the most common and popular website among users at this time.

Data collection was performed on September 7th, 2014. Initially, the controlled descriptor "urinary catheterization" was used in the YouTube search field, extracted from Health Sciences Descriptors (DeCS). Subsequently, the filters regarding the type of result and date of uploading provided by the website were applied, selecting only videos whose upload was dated in the past year - 2014.

To be included, the videos should comply with the following criteria: videos intending to demonstrate the indwelling urinary catheterization procedure in women; in verbal language - Portuguese, Spanish or English - or nonverbal.

The exclusion criteria were: videos not addressing the research issue and/or not referring to the theme; duplicate videos; and videos about relief urinary catheterization and indwelling urinary catheterization in men.

After selection, according to the inclusion criteria, the links to the videos were saved in a spreadsheet on the same day, so as not to jeopardize the selected sample, considering that, at each access, new videos are posted. Thus, the content of each video was watched very

carefully, with the aim of analyzing the scope of the indwelling catheterization procedure.

The visits to the website occurred without defined location, since there is no access restriction to the videos. Accordingly, it was possible to watch them several times and extract the necessary information for a better analysis, which was performed in a standardized fashion.

The collecting indicators, with their respective ways of analysis were: 1) running time: indicated in the video timeline, in minutes and seconds; 2) responsible for uploading: private individual, blogs, companies; 3) date of uploading; 4) total views; 5) category: according to YouTube classification; 6) type of procedure: male, female or both; and 7) technical execution: correct or

incorrect. Such indicators were developed based on studies using a similar method which also aimed to analyze YouTube videos<sup>(3)</sup>.

To determine whether the procedure execution was correct or incorrect, the appropriateness of the procedure steps was analyzed (Chart 1), which were defined based on a literature review, performed in June 2014, in the Scientific Electronic Library Online (SciELO), Latin American Literature in Health Sciences (LILACS), PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus and Cochrane databases.

The data analysis was performed using simple descriptive statistics (absolute and relative frequencies). As the research is not directly related to human beings, there was no need from institutional review board approval.

Chart 1 – Steps of the delayed urinary catheterization procedure in women. Natal-RN-Brasil, 2014

Step
a) Prescription of the indwelling urinary catheterization with checking of the correct indication <sup>(5-6)</sup> .
b) Procedure planning with organization of the material needed for the insertion of aseptic catheter: two pairs of sterile gloves; sterile gauze; iodine antiseptic or soap with chlorhexidine; bags for waste; urethral catheter according to the patient and the indication for catheterization; syringe with 7 or 8 ml of distilled water; soluble anesthetic lubricant; 3 or 4 ml syringe (optional); container for urine; closed equipment for drainage; sterile field (optional); fixing of adhesive strips (optional) <sup>(7-8)</sup> .
c) Procedure performance <sup>(7-9)</sup> 1. Gather the necessary material for insertion of the aseptic catheter; 2. Wash your hands; 3 Antisepsis: in a place where privacy is guaranteed, place the patient in the supine position, with legs apart and knees bent; wear the gloves, with the index finger and the non-dominant hand thumb carefully separate the lips and expose the canal, rinse with antiseptic soap, in this order: outer lips, inner lips, clitoris, meatus, and head to the perineum, with movements from top to bottom without returning; dry in the same direction and repeat it twice; 4. Change gloves; 5. Place the sterile field; 6. Take the probe and lubricate the end, wrap it in your dominant hand to avoid contaminating it. With the thumb and forefinger of your other hand separate the inner lips, locate the urethral meatus, and if it cannot be found, as in some obese or multiparous women, palpate it; when you are sure of its location insert the catheter gently but firmly; when the urine starts to flow advance probe 10 cm; 7. Check the location of the catheter in the bladder – by the presence of urine - and inflate the balloon with 5 or 7 ml of distilled or sterile water, perform the draw through the probe gently, anchoring in the bladder neck and then remove the sterile field carefully, avoiding to contaminate the distal portion of the probe; 8. Attach the probe in the closed drainage system; 9. Attach the probe in the lower abdomen to prevent urethra injuries caused by the traction exerted; 10. Clean and dry the patient, cover and leave it comfortable.
d) Register the procedure in the medical record of the patient <sup>(6)</sup> .
e) Continuously monitor and evaluate the urethral catheter, maintaining communication and cooperation with the patient <sup>(7-9)</sup> .

## RESULTS

The search for videos on the YouTube website totaled 8,280 videos, which, after the filter application, resulted in 499 (6.0%) pre-selected files; these, in turn, were individually analyzed, based on the inclusion and exclusion criteria and data collection indicators, totaling a sample of 29

videos, corresponding to 0.35% of the amount initially found.

The characterization of the videos that compose the study sample is shown in Table 1 and it is possible to observe the indicators: running time, author, upload date, category and procedure execution.

A predominance of videos with intermediate

running time was found, between 4 and 20 minutes (23; 79.4%); altogether, 29 videos totaled 4h47min59s of video watched, an average of 10min19s per video.

Most of them were uploaded by private individuals (24; 82.8%), considering that it is an open video sharing website, which anyone can access.

Regarding the category of videos, established by the publisher and shown on the video page on YouTube, there was a predominance of the people and blogs category (18; 62%), which is not consistent with that observed in the video content, since most had an educational nature.

By assessing the indwelling urinary catheterization procedure in women demonstrated in the video, and based on the sequence described in the literature (Figure 1), a prevalence of incorrect procedures (26; 89.7%) was observed. The main incoherencies are highlighted in Figure 1.

The following main errors were found in the analyzed videos: the absence of procedure registration in the medical records (25; 86.2%), non-demonstration of hand washing (23; 79.4%) and use of the same glove for antisepsis and probe insertion (18; 62%).

Table 1 - Characterization of the videos component of the study sample. Natal-RN-Brasil, 2014

Analysis indicator	n	%
<b>Running time</b>		
Short (less than 4')	3	10,3
Intermediate (between 4' and 20')	23	79,4
Long (over 20')	3	10,3
<b>Author</b>		
Private individual	24	82,8
Agency	0	0
Company	5	17,2
<b>Date of upload</b>		
2013	17	58,6
2014	12	41,4
<b>Category</b>		
People and blogs	18	62
Education	5	17,2
Science and technology	2	6,8
News and politics	1	3,5
Entertainment	1	3,5
Film and animation	1	3,5
Comedy	1	3,5
<b>Procedure execution</b>		
Correct	3	10,3
Incorrect	26	89,7

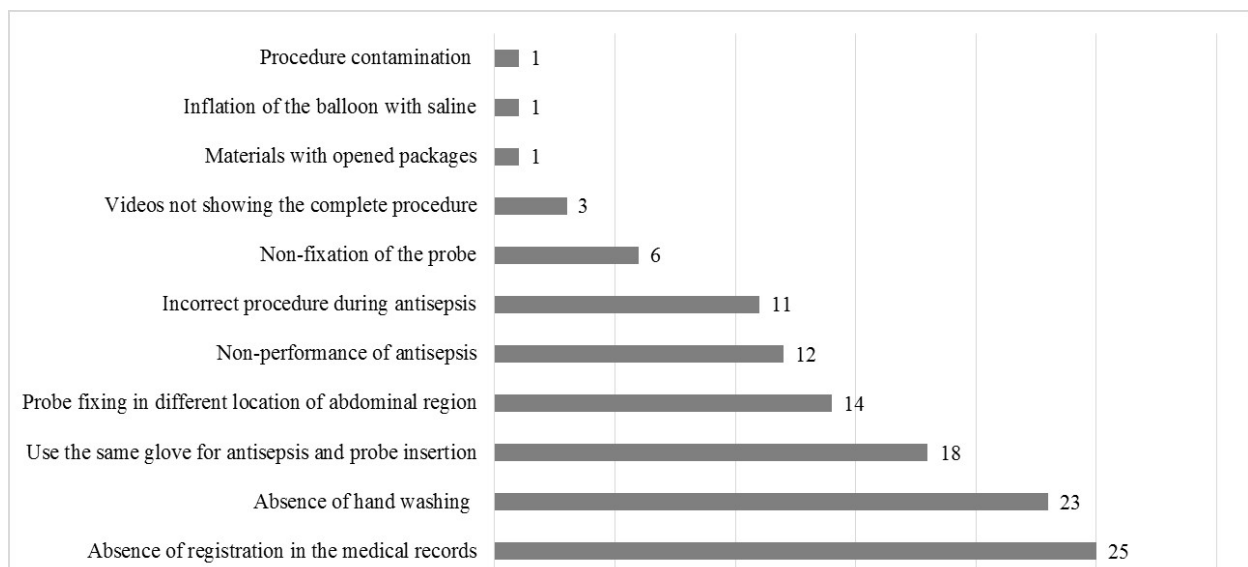


Figure 1 - Main errors observed in the videos analyzed regarding indwelling urinary catheterization in women, in absolute figures. Natal-RN-Brasil, 2014

## DISCUSSION

With the advent of the Internet, the dissemination of information has become increasingly fast and, consequently, many resources have been added to people's daily lives<sup>(10)</sup>.

The YouTube website has thus gained prominence in the contemporary world and is an important tool to disseminate information by publishing and sharing videos using audiovisual resources<sup>(10)</sup>.

Among many functions, the possibility of upload and use of videos for educational purposes is emphasized, an aspect that highlights the need to analyze the quality of the published content. Therefore, the reliability of the data transmitted deserves attention, especially when it comes to health.

Of the 29 analyzed videos addressing the indwelling urinary catheterization procedure in women, 26 were not in accordance with the recommendations in the literature, highlighting the publication of videos without commitment to the information transmitted.

Similarly, a study<sup>(3)</sup> that analyzed the videos on the cardiopulmonary resuscitation (CPR) found that most were outdated, according to the old CPR guidelines. It is noted, thereby, that the divulgation of content contradicts the principles established in the literature. Additionally, people who use this resource with educational objectives should discern the content they are watching; otherwise, they will receive a negative influence and propagate this erroneous information in their daily lives.

It is worth mentioning that this is not a unanimity: another study<sup>(11)</sup>, assessing the YouTube videos on breastfeeding, found that these referred to relevant factors of this practice, exerting a positive influence on viewers.

Accordingly, it is emphasized that videos divulging appropriate information can be translated into important material to support the teaching of nursing techniques in line with the proven benefits of using ICT as a teaching tool, in particular hypermedia - union of various media such as text, video, hypertext, pictures, animation<sup>(12-14)</sup>.

Among the errors found in the analyzed

videos, the absence of nursing records should be mentioned. It is known that information is crucial in the healthcare process. By registering the care process it is possible to ensure the implementation and continuity of healthcare, as well as to enable the health staff to provide the service based on knowledge and on ethical and legal aspects<sup>(15)</sup>.

The information in health, therefore, constitutes the basis for the communication of health professionals, a basic element for patient safety assurance and qualification of the care provided.

It is estimated that 50% of information regarding care comes from nursing<sup>(16)</sup>. In view of this significant number, nursing records are expected to permit ongoing communication among the multidisciplinary team members, with transmission of information to facilitate planning, clinical and management decision-making and continuity of care.

Nursing records, consequently, are considered as one of the means to demonstrate the work performed by the nursing staff and as care quality indicator<sup>(17)</sup>, whose divulgation is essential as a component step of all nursing procedures, including the indwelling urinary catheterization in women.

Another point noted was the absence of demonstration of hand washing in 23 videos, an aspect that demonstrably increases the risk of causing urinary tract infection (UTI) during the procedure performance, as well as the possibility of cross-contamination<sup>(5)</sup>.

It is noteworthy that hand hygiene is a simple and rapid means of preventing the spread of infection related to healthcare and should be performed by all professionals and family, as well as in other situations, before and after patient contact<sup>(18)</sup>.

Still concerning the observed errors, the use of the same glove to perform the antisepsis and probe insertion is highlighted, also causing an additional risk of UTI.

The following steps of the procedures described were recurrent in the videos: checking the position of the catheter and balloon inflation; lubrication and insertion of the catheter; connection of the closed drainage system with the probe; placing the sterile field; and procedure planning.

It is emphasized that, by checking the correct insertion of the catheter through the

urine reflux and subsequent balloon inflation, a correct positioning of the probe in the bladder is guaranteed, which is important for preventing harm to the patient<sup>(5,19)</sup>.

Furthermore, it stands out further that the balloon should be filled with distilled water, since saline solutions and other electrolytes carry the risk of crystallization, making the deflation difficult at the time of catheter removal<sup>(19)</sup>. One assessed video incorrectly showed balloon filling with saline.

With regard to lubricity and smooth insertion of the catheter, it is noted that such care entails a lower risk of urethral trauma for the patient, facilitating its insertion and alleviating the pain caused by neurogenic bladder<sup>(19)</sup>.

Similarly, when connecting the closed drainage system to the probe, preventing its disconnection, the risk of contamination is reduced. Such systems should include mechanisms aiming to minimize infection, such as: anti-reflux valve, drip camera and container for urine collection<sup>(20)</sup>.

Finally, the importance of the procedure planning stage is highlighted, which is crucial for ensuring an aseptic procedure, avoiding interruption of steps due to the lack of or inappropriate material<sup>(20-21)</sup>, and concerns with guaranteeing integral care, focusing on the correct indication of indwelling urinary catheter use, an aspect the multidisciplinary health team should consider.

## CONCLUSION

Based on the results of this study, it was observed a significant amount of videos addressing the indwelling urinary catheterization procedure in women was observed, which are incompatible with the standard procedure described in the literature, with potential to negatively influence the professional or nursing student who watch them, thus compromising the care provided to patients.

The YouTube website constitutes a technology that can support the process of teaching and learning. Nevertheless, people who access it for educational purposes need background theoretical knowledge to recognize the errors present in the published content, especially when it comes to health, so as not to propagate misinformation.

Due to this deficiency and considering the high access to this information site, the need to publish videos related to the theme in question is identified, which are in accordance with the literature recommendations, in order to provide the professionals and nursing academics with reliable sources regarding the procedure demonstrated.

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