

# Analysis of *YouTube* videos about urinary catheterization technique of male delay

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## Analysis of *YouTube* videos about urinary catheterization technique of male delay

**Objective.** To analyze the execution of urinary catheterization technique of male delay in *YouTube* videos. **Methods.** This is an exploratory research with a quantitative approach, performed using the *YouTube* sharing site. The search of the videos was conducted in September 2014, using the controlled descriptor “urinary catheterization”. **Results.** 32 videos were analyzed, none were in accordance with the standards established in the literature; among the main errors highlight the absence of hand washing (78.1%),

the absence of the medical recording (71.8%), the absence of cleaning and drying of the patient at the end of the procedure (71.8%), the incorrect technique during antisepsis (62.5%) and the absence of gloves changes (59.3%). **Conclusion.** Although the *YouTube* sharing video site is currently a widespread tool, there is an absence of videos that reproduce the technique according to what is recommended in the literature.

**Key words:** antisepsis; gloves, protective; hand disinfection; male; nursing; urinary catheterization; therapeutics; instructional films and videos.

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## **Análisis de los vídeos en *YouTube* sobre la técnica de cateterismo vesical por retención de orina en el hombre**

**Objetivo.** Analizar la ejecución de la técnica de cateterismo vesical por retención de orina en el hombre en los vídeos en *YouTube*. **Métodos.** Estudio exploratorio de abordaje cuantitativo realizado en el sitio web *YouTube*. Se realizó una búsqueda de los vídeos en septiembre de 2014 utilizando el descriptor controlado “cateterismo urinario”. **Resultados.** Fueron analizados 32 vídeos, de los cuales ninguno estaba de acuerdo con los patrones establecidos por la literatura. Entre los principales errores encontrados se destacan: la ausencia de lavado de las manos (78.1%), falta de registro en la historia clínica (71.8%), ausencia de limpieza y secado del paciente al terminar del procedimiento (71.8%), técnica incorrecta durante la antisepsia (62.5%) y falta de cambio de guantes (59.3%). **Conclusión.** Aunque sitio web *YouTube* es una herramienta ampliamente difundida actualmente, hay carencia de vídeos que reproduzcan la técnica de acuerdo con los patrones establecidos en la literatura.

**Palabras clave:** antisepsia; guantes protectores; desinfección de las manos; enfermería; masculino; cateterismo urinario; terapéutica; películas y videos educativos.

## **Introduction**

New teaching technologies have been increasingly used in the learning process of undergraduate health courses, strengthening the process of change and improvement of knowledge. Thus, the advent of Information and Communication Technologies (ICTs) can be seen as an element that aims to assist meet and guarantee the improvement of the transfer of information for students. These media are used in a number of specific features, such as interactivity, innovation, digitization, automation, connection and diversity, giving the teacher a range of tools that can assist in the teaching process for students.<sup>1</sup> ICT's, meanwhile, can be seen as a facilitator and also enable new languages in the educational space. Thus, enable the student to diversify and expand

## **Análise de vídeos do *YouTube* sobre a técnica de cateterismo urinário de demora masculino**

**Objetivo.** Analisar a execução da técnica de cateterismo urinário de demora masculino nos vídeos do *YouTube*. **Métodos.** Trata-se de uma pesquisa exploratória, de abordagem quantitativa, realizada no sítio de compartilhamento *YouTube*. A busca dos vídeos foi realizada em setembro de 2014, utilizando-se o descriptor controlado “cateterismo urinário”. **Resultados.** Foram analisados 32 vídeos, dos quais nenhum estava de acordo com os padrões estabelecidos pela literatura; dentre os principais erros encontrados, destacam-se a ausência de lavagem das mãos (78.1%), a falta de registro no prontuário (71.8%), a ausência de limpeza e secagem do paciente no término do procedimento (71.8%), a técnica incorreta durante antisepsia (62.5%) e a falta de troca de luvas (59.3%). **Conclusão.** 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.

**Palavras chave:** antisepsia; luvas protetoras; desinfeção das mãos; enfermagem; masculino; cateterismo urinário; terapéutica; filmes e vídeos educativos.

knowledge about specific topics of their education and motivating the development of investigative spirit in the search for evidence-based for decision making of the problems of clinical practice.

Innovative Pedagogical approaches to health education point out, therefore, for the adoption of innovative methodologies, where the curriculum is the configurator element of the selection of content to be developed in the course, revealing the systematic teaching-learning process.<sup>2</sup> In the nursing teaching, these technologies aim to improve the quality and education of these professionals. Thus, the advent of ICT's can be seen as a connecting element that aims to assist, meet and guarantee the improvement of the transfer of information for students.<sup>3</sup> And also can be seen as a facilitator for the transfer of

information and connections with new languages in the educational space, aspects that must be interconnected, because otherwise, it will not guarantee a dialectical stance of the process of building a committed praxis as a new educational context.

It is apprehended that the nursing learning requires specific peculiarities of the profession because the students often come across complex situations involving the care of other's lives, which requires a maturing of the student as well as a good technique to guarantee the safe and free of errors assistance.<sup>4</sup> Meanwhile, a tool that stands out is the use of video as a teaching-learning technology of nursing students in both vocational technical level and graduation level. After all, the videos serve as support and assist the teacher in guiding practical activities that are typical of the profession, simulating the environment, the professional, the care situation and the patient. Thus, the student can precede their main needs and doubts that may exist before being inserted at the moment of real practical activity.<sup>5</sup> In this sense, the internet is stressed as the main source of videos, through virtual platforms like *YouTube* - main video sharing site of these days.<sup>6</sup> However, in contrast to the ease access to the publicizing videos, there is an absence of quality control, because there is no post restriction regarding the adequacy of the procedure conveyed by the media disclosed on that channel.

Thus, it is known that many of these videos requires a selection, based on a teaching protocol that ensures the effectiveness and purpose of the simulation that will be passed to students, since, when addressing aspects of health care, the information may result in actions and/or erroneous thoughts. It is noteworthy in this context, the use of videos for teaching nursing procedures and, among these, the technique of urinary catheterization of male delay, a process widely used in clinical nursing practice and, when executed incorrectly, is the factor of most important risk for urinary tract infection (UTI).<sup>7</sup> Thereby, it aim to answer the following guiding questions: What are the characteristics of the videos

shared on *YouTube* about urinary catheterization technique of male delay? Are they in agreement with the recommended by the nursing literature? The objective is; therefore, to review the execution of urinary catheterization technique of male delay in *YouTube* videos.

## Methods

It is an exploratory research with a quantitative approach, performed on the *YouTube* video-sharing site, whose virtual address is: [www.youtube.com](http://www.youtube.com). The study followed research protocol composed of the elements: the research topic; guiding questions; objective; search strategy; selection of studies; critical evaluation of the studies; and presentation of results. The research was performed in the *YouTube* search field in September 2014, through controlled descriptor "urinary catheterization" – extracted from Health Sciences Descriptors (DeCS). Filters "result type" and "upload date" were used, offered by the site, choosing only the videos posted in the last year, i.e., from September 2013 to September 2014. Initially, the descriptor was entered in site search field and then the filters offered by *YouTube* were applied. The links of the resulting videos of this initial search were saved for further analysis not to compromise the sample selection since the site is characterized by the continuous addition of new content.

After this step, the research was performed at visits to selected links, which happened without defined location, since there is no restriction of access to the videos if visited in different locations, as with some search portals. Thus, it was possible to carry out several requiered visits, at different times, for observation and analysis of pre-selected videos. The videos were thus examined individually, establishing the following inclusion criteria: videos that were intended to demonstrate the urinary catheterization technique of male delay, in humans; in verbal language - Portuguese, Spanish or English - or nonverbal. The videos that did not answer the research question were excluded and/or did not relate to the theme,

about urinary catheterization of women delay or relief, as well as duplicate videos.

After the initial selection of videos as inclusion and exclusion criteria, the selected sample was analyzed according to the following study indicators, which were synthesized in a *Microsoft Excel* 2010 spreadsheet: duration, responsible for the post (individual, agency or company), posting date, total views, category (according to *YouTube* classification) and technical execution. For analysis of the latter indicator, the standardization was followed by the technique of execution in accordance with the result of literature review "Technical urinary catheterization of male and female delay: literary recommendations", held in June 2014, in the Scientific Electronic Library Online (SciELO) databases, Latin American and Caribbean System on Health Sciences (LILACS), PubMed, *Cumulative Index to Nursing and Allied Health Literature* (CINAHL), Scopus and Cochrane, which aimed to analyze the recommendations found in the literature regarding the execution of urinary catheterization of male delay.

The description of the stages of urinary catheterization technique of male delay, elucidated from the cited literature review, is as follows:

- 1) Prescription of urinary catheterization of delay with verification of correct indication.<sup>8,9</sup>
- 2) Procedure Planning with organization of the material required for the insertion of aseptic catheter: two pairs of sterile gloves; sterile gauze; iodine antiseptic or soap with chlorhexidine; waste bags; urethral catheter according to the patient and the indication for catheterization; syringe with 7 or 8 cc of distilled water; anesthetic soluble lubricant; cc syringe 3 or 4 (optional); container for urine; closed equipment for drainage; sterile area (optional); fastening adhesive strips (optional).<sup>10,11</sup>
- 3) Technical realization:<sup>10-12</sup> i) Gather the necessary materials for the insertion of

aseptic catheter; ii) Wash hands; iii) Perform antisepsis: in a place where privacy is guaranteed, place the patient in supine with legs apart, put on gloves and do the following: hold the penis with the non-dominant hand, remove the foreskin to expose the glans, start washing the urinary meatus, follow the glans, balanopreputial groove, continue in a circular movement around the penis axis without returning to the roots, dry in the same direction, wash and dry twice and cover the penis with sterile gauze to avoid contamination when changing gloves; iv) Gloves changes; v) Put the sterile area (optional); vi) Take the probe and lubricate the tip; vii) Stay on the right side of the patient; if dexterous take the penis with the left hand, lubricate the meatus and introduce 3 or 4 cc of anesthetic water-soluble lubricant into the urethra to anesthetize and relax the bladder neck and thereby facilitate the passage of the probe and avoid trauma to the urethra. Wait a few minutes and start the catheter insertion; viii) Hold the penis of the side walls with the thumb and forefinger of the non-dominant hand, with a slight traction and 90° position to the abdomen, taking care not to compress the spongy body containing the urethra to facilitate the probe progress. Take the catheter near its tip, and with the dominant hand start to insert it smoothly, with steady and continuous pressure, observing the reactions of the patient. The probe should be inserted into the distal part and obtain urine; vii) Verify the location of the catheter in the bladder – by the presence of urine - and inflate the balloon with 5 or 7 cc of distilled or sterile water, perform the traction for the probe softly anchor in the bladder neck and remove the sterile area with care not contaminating the distal portion of the probe; x) Hold the probe in the closed drainage system; xi) Remove the excess of antiseptic and put the foreskin to its original position to prevent phimosis that can occur when left retracted; xii) Hold the probe in the lower abdomen to prevent urethra injuries exerted by traction; xiii) Clean and dry the patient, cover and let comfortable.

- 4) Register the procedure in the patient's medical record.<sup>9</sup>
- 5) Monitor and evaluate the urethral catheter continuously, maintaining communication and cooperation with the patient.<sup>10-12</sup>

The data were tabulated, grouped and analyzed by simple descriptive statistics. It did not require the approval of the ethics committee, since the research is not directly involved with human beings, using public domain material.

## Results

The search for videos on the *YouTube* site totalized a quantitative of 8,280 videos, which, from the filter application resulted in 499 (6.0%) pre-

selected files; these, in turn, were individually analyzed, based on the criteria of inclusion and exclusion and data collection indicators, totaling a sample of 32 videos, corresponding to 0.39% of the initial value found. The characterizations of videos that comprise the study sample are shown in Table 1.

It was found a predominance of videos with intermediate duration, 4-20 minutes (88.7%); posted by individuals (78.1%), considering it is an open-video sharing site, where anyone can access. As for category of videos, determined by the own publisher and shown on the *YouTube* video page, there was a predominance of the category people and blogs (59.4%), which not suits with that seen in the videos content, since most had an educational nature.

**Table 1.** Characterization of the 32 videos of the study sample

Analysis indicator	n	%
Duration		
Short (less than 4')	8	25.0
Intermediate (between 4' and 20')	22	68.7
Long (over 20')	2	6.3
Author		
Individuals	25	78.1
Agency	0	0.0
Company	7	21.9
Posting date		
2013	9	28.1
2014	23	71.9
Category		
People & Blogs	19	59.4
Education	5	15.6
Science and technology	2	6.3
Entertainment	2	6.3
Sport	1	3.1
Movies & animation	1	3.1
News & Politics	1	3.1
Comedy	1	3.1
Execution of the technique		
Correct	0	0.0
Incorrect	32	100.0

Through evaluation of the urinary catheterization technique of female delay shown in the video, based on the sequence described in the literature, evidenced the totality of incorrect procedures.

The main inconsistencies are highlighted in Table 2. It was found that the principal errors about the bladder catheterization of male delay was the absence of hand washing (78.1%), absence

of registration in the medical record (78.1%), absence of cleanliness and drying of the patient at the end of the procedure (71.8%), improper technique during antisepsis (62.5%) and absence of gloves changes (59.3%), covering more than

half of the analyzed videos. When analyzed separately, the stages components of the correct and complete urinary catheterization procedure of male delay, it noted the results highlighted in Table 3.

**Table 2.** Main errors about bladder catheterization of male delay observed in 32 analyzed videos

Errors	N	%
Absence of record medical registration	25	78.1
Absence of hand washing	25	78.1
Absence of cleaning and drying	23	71.8
Incorrect technique during antisepsis	20	62.5
Absence of gloves changes	19	59.3
No removal of antiseptic excess	16	50,0
Not fixing the prob	15	48.8
Incorrect anesthesia procedure	15	48.8
Incomplete videos	12	37.5
Incorrect prob fixing	11	34.4
Contamination of the procedure	10	31.3
Not performed antisepsis	4	12.5
Incorrect balloon inflation	3	9.4
Incorrect probe insertion	3	9.4
Material on the patient's bed	2	6.3

**Table 3.** Number of videos showing each component stage of the correct urinary catheterization procedure of male delay

Stage	N	%
Prescription of urinary catheterization of delay with verification of correct indication	2	6.2
Procedure planning with organization of required material for the insertion of aseptic catheter	2	6.2
Complete technical realization	0	0.0
Registration of the procedure in patient's medical record	3	9.3
Ongoing monitoring and evaluation of urethral catheter, maintaining communication and cooperation with the patient	5	15.6

## Discussion

Faced with the potentialities and unquestionable importance that the videos available on the Internet assume in contemporary times, it is

imperative to pay attention to the quality of the material being conveyed, since when addressing issues related to health care, the information may result in actions and/or erroneous thoughts,

compromising even patient safety as a reflex of inadequate learning. It is clear that *YouTube* videos can be a tool to contribute in fact in the process of teaching-learning in nursing, since its use follows careful planning, with objectives to enjoy them with all its potentiality.<sup>13</sup> Aware of this assertion, some studios have sought to analyze *YouTube* videos related to sanitary aspects.<sup>14-17</sup>

When addressing the teaching of nursing procedures and, in particular, the technique of male delay catheterization, it becomes, even more important to analyze the *YouTube* videos about the theme, since it apprehends that it is a mechanism, increasingly used by students as a strategy to review content, mainly of a practical nature. Teaching technologies are globally recognized as beneficial to the innovative and differentiated process that currently requires learning environments, contributing to critical thinking, complex decisions, practical skills, teamwork, motivation, interaction, problem-solving and generating hypotheses, because it is guided by the active participation of students, encouraging their autonomy and criticality.<sup>18</sup>

In the nursing context, it highlights challenges of the learning environments even more complex, requiring the inclusion of ICT's in education: it evolves to an environment of practices that establish high levels of skills of nurses; it requires the education of critical and reflective nurses, with cognitive development as an inherent matter of Evidence-Based Practice; and the educator is inserted in a context of dialogic change, which highlights students with diverse learning styles and needs, which should be known by educators to use effective teaching models.<sup>4</sup> Meanwhile, stands out the construction essentiality, validation, and propagation of educational videos guided by scientific principles that translate into a real mechanism and quality to support nursing education. The fact that 100% of the analyzed videos transmit an improper technique is, therefore, somewhat worrying.

It is known that bladder catheter is an important resource for health care; however, its use is often

excessive and after inserted, often stays for much longer than necessary. It is the most important risk factor for urinary tract infection (UTI). A single catheterization is associated with a risk of 1 to 2% of developing UTI, and the cumulative risk is 5% per day.<sup>19</sup> UTI associated with bladder catheter can represent up to 40% of hospital infections and increases about three days length of hospital stay and can complicate with bacteremia and death.<sup>20,21</sup> It is estimated that about 20% to 50% of hospitalized patients are undergoing bladder catheterization, and some studies suggest that up to 38% of doctors may be unaware that their patient is probed, which helps the bladder catheter be kept beyond the needed time.<sup>21</sup> It is emphasized the importance of prescription procedure, verifying the correct indication, which was demonstrated in only two videos. Studies emphasized, alarmingly, the existence of many procedures that are performed with incorrect indications, or neglect the registration statement in the medical record.<sup>9</sup>

A research has shown that in 23.3% of patients who used the urinary catheterization of delay, the procedure was not prescribed in the medical record, reaching 46% among clinical patients.<sup>9</sup> It is emphasized that this indicator is a very important marker of failure in the process work, which takes place in a manner not yet systematized in terms of documentation, leading to a potential risk of ignorance to the team that will continue to care, since it is often a different professional providing the first emergency care, a sector where are performed 38% of bladder catheterizations.<sup>9</sup>

About ensuring the continuity of care and monitoring of the use of urinary catheters, it emphasizes the registration procedure in medical records, which was demonstrated in only three videos. Good practice principles emphasize the importance to document all procedures related to urinary catheterization in the medical record, including the insertion order and its justification. Of the nursing team, it is expected to document who performed the procedure, technical difficulties, the used material, performing date, provided daily care, as well as the daily questioning of the need for urinary catheter maintenance.<sup>22</sup>

Researchers suggest that the systematic participation of trained nurses to perform the technique properly and verify the indications of bladder catheter of delay, to inquire the doctor daily about the need for its permanence is essential to reduce UTI.<sup>22</sup> So, it is concluded that is of paramount importance the production and placement of videos guided in the standardization of urinary catheterization technique of male delay, integrating all the mentioned steps, since non-uniformity can lead to an increase in the number of undesirable events, such as the UTI. It is emphasized that analyzed teaching of nursing procedure should not be as a technical way, focusing only on the performance of catheter insertion, in a broad way, understanding that nursing care covers the completeness and effectiveness of nursing actions, from the analysis of the procedure indication, dialogue with the patient, recording, and continuous monitoring - a guided process in the systematization of nursing care.

Regarding to the use of videos as educational technologies is emphasized that are necessary tools to prepare students for the complex and dynamic work environment. Using these tools provides a safe learning environment for students with a variety of opportunities that enables the practical approach of the concepts and skills acquired in the nursing course. Also, this learning environment facilitates the exploration of clinical trials consequences without the fear of patients to suffer consequences.<sup>1</sup> Thus, nurse educators have a professional and ethical role in developing a propitious environment for learning that encourages students to think and ratiocinate, which requires a strategic plan. Educators should show consideration to the time spent by students, efforts, and contributions, as well as respect, accessibility, flexibility, and provide help to build a teaching-learning relationship that promotes confidence and encourage student participation, i.e., a learning environment where students are genuinely valued and encouraged to build critical thinking skills.<sup>3</sup> Meanwhile, the nursing educator must be in line with technological mergers in response to current demands, aspects that

should, in a fundamental way, to join the follow-up of a pedagogical approach to guide the integration of technology in educational environments, as well as the detailed analysis of the materials to be used.

32 videos were analyzed, none was in accordance with the standards established in the literature; among the main errors found, it highlights the absence of hand washing, the absence of registration in the medical record, the absence of cleaning and drying the patient at the end of the procedure, incorrect technique during antisepsis and the absence of gloves changes. It concludes that, although the sharing site of *YouTube* videos is a currently widespread tool, there is a lack of videos that reproduce the technique according to what is recommended in the literature.

Among the study limitations, highlights the *YouTube* search difficult, since there is no stratification of the videos as the categories, and the choice of category is given by the responsible for posting and therefore, most of the time, not consistent with the content conveyed by the video. Given that *YouTube* is the more widespread site among Internet users and many people use it as a research source, it emphasizes the importance of analyzing the quality and reliability of the posted information. Also, it is understood that the selection and adequate production of videos can create opportunities appropriately its use in areas of training and educational classes.

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