



Journal of Nursing

Revista de Enfermagem

UFPE On Line

ISSN: 1981-8963

ORIGINAL ARTICLE

BEHAVIORAL THERAPY FOR THE URINARY INCONTINENCE OF ELDERLY WOMAN

TERAPIA COMPORTAMENTAL PARA INCONTINÊNCIA URINÁRIA DA MULHER IDOSA LA TERAPIA COMPORTAMENTAL PARA LA INCONTINENCIA URINARIA EN LA MUJER ANCIANA

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ABSTRACT

Objective: to evaluate the effectiveness of behavioral therapy applied by a nurse for micturition control and improvement in the quality of life of an elderly woman. **Method:** this was an exploratory study with a quantitative approach carried out between April of 2011 and June of 2012. Thirteen elderly women complaining of involuntary loss of urine without a cognitive deficit and urinary tract infection were assessed by instruments before and after the intervention. The research was approved by the Research Ethics Committee, registration No. 3021/2011, CAAE-016502280001. **Results:** after the behavioral therapy, 11 patients (92.30%) had the micturition rhythm established, 09 elderly (75%) presented absence of urinary loss, and thus, reduced the use of diapers and sanitary pads. **Conclusion:** the behavioral therapy administered by a nurse was effective for this group towards the re-establishment of micturition control and promotion of the quality of life. **Descriptors:** Geriatric Nursing; Urinary Incontinence; Behavioral Therapy.

RESUMO

Objetivo: avaliar a efetividade da terapia comportamental aplicada pelo enfermeiro para o controle miccional e melhora da qualidade de vida da mulher idosa. **Método:** estudo exploratório, com abordagem quantitativa, realizado entre abril de 2011 e junho de 2012. Foram 13 idosas com queixa de perda involuntária de urina, sem déficit cognitivo e infecção urinária, avaliadas por instrumentos, antes e depois de uma intervenção. A pesquisa foi aprovada pelo Comitê de ética em pesquisa, registro nº 3021/2011, CAAE-016502280001. **Resultados:** após a terapia comportamental, 11 pacientes (92,30%) estabeleceram um ritmo miccional, 9 idosas (75%) apresentaram ausência de perda urinária e, com isso, reduziram gastos com fraldas e absorventes higiênicos. **Conclusão:** terapia comportamental aplicada por enfermeiro foi efetiva para este grupo, em relação ao re-establishment do controle miccional e promoção da qualidade de vida. **Descritores:** Enfermagem Geriátrica; Incontinência Urinária; Terapia Comportamental.

RESUMEN

Objetivo: evaluar la eficacia de la terapia comportamental aplicado por las enfermeras para el control de la vejiga y la mejora de la calidad de vida de la mujer anciana. **Método:** un estudio exploratorio con abordaje cuantitativo, realizado entre abril de 2011 y junio de 2012. Había 13 ancianos quejándose de pérdida involuntaria de orina sin deterioro cognitivo y infección del tracto urinario, evaluado por los instrumentos antes y después de una intervención. El estudio fue aprobado por el Comité de Ética en Investigación, número de registro 3021/2011, CAAE-016502280001. **Resultados:** después de la terapia comportamental, 11 pacientes (92,30%) han establecido un ritmo urinario, 09 (75%) presentaron ausencia de pérdida de orina y la reducción del gasto en pañales y toallas sanitarias. **Conclusión:** la terapia comportamental aplicada por la enfermera fue eficaz en este grupo, para el re-establishment de control de la orina y la promoción de la calidad de vida. **Descriptores:** Enfermería Geriátrica; Incontinencia Urinaria; Terapia Conductual.

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INTRODUCTION

Urinary incontinence (UI) is considered a global public health problem that is epidemiologically relevant.¹ It is a pathology characterized by the involuntary loss of urine and can be classified into three main types: stress urinary incontinence (SUI) when involuntary loss of urine occurs during exertion or exercise; urgency incontinence (UI) characterized by complaints of involuntary urine loss immediately accompanied or preceded by urgency; and mixed urinary incontinence (MUI) when there are complaints of involuntary loss of urine associated with urgency and efforts.²

The risk factors for UI increase with advancing age, especially in women after 70 years of age,³ and thus, it is important that every health professional assisting an elderly woman, regardless of their specialty, asks the following question: "do you have involuntary loss of urine?". This is because, in general, patients do not mention the issue if not questioned, often by shame or for thinking that it is a common problem of advanced age.

Studies show that depending on the health conditions, type, and UI stage, the treatment may be surgical, medication, through physiotherapy or behavioral therapy, which provides healing, reduction of symptoms, or the learning of how to better deal with the problem.⁴ In Brazil, the treatment approach is, traditionally, surgical. However, this procedure involves high costs and can cause complications. Therefore, nowadays, an interest in treatment options for UI that are less invasive has risen, such as behavioral therapy. The Behavioral Therapy (BT) is a method of low risk and cost because it stimulates behavioral modifications.³

Thus, the approach to UI represents a challenge for health professionals in search of alternatives to its treatment⁵ based in a humanized and individualized attention to women, especially encouraging self-care. Self-care is the broadest concept referring to a person's skills and performance of activities for the promotion and maintenance of health.⁶ Thus, the teaching of self-care was used as a strategy to minimize the limitations established by UI and optimize the potential in self-care and prevention of urological problems.

To understand how the approach of UI in Brazil and the world has been conducted we performed an integrative review in the medical publication database *National Library of Medicine* of the United States of America

(PubMed) and the following databases from the Virtual Health Library (VHL) from the Bireme Network: Base and data in Nursing (BDENF), *Cochrane* BVS, Latin American Literature and Caribbean Health Sciences (Lilacs), and *Medical Literature Analysis and Retrieval System Online* (MEDLINE) in the period between March and October of 2012 using the following descriptors: behavioral therapy; nursing; urinary incontinence; and elderly woman.

A total of 25,627 articles were found related to the descriptor urinary incontinence. From these articles, 5,683 (22.1%) are studies related to clinical approach and 3,095 (12%) are related to incidence, prevalence, and health technology evaluation. A total of 990 articles (3.8%) were found in relation to behavioral interventions (behavioral therapy) in UI, predominantly in the international literature. This shows that there are few studies related to behavioral interventions and with low cost, both for the patient and health services.

We conducted a new search in July of 2014, in the same databases, and found 29,825 articles, being 14,285 (47.89%) about clinical approach, 8,297 (27.81%) about incidence, prevalence, and health technology evaluation, 1,003 (3.36%) about BT, and 6,240 (20.91%) about other UI related issues, i.e. the number of studies in the UI theme increased, however, studies about BT are still in the low numbers.

Thus, the present study has the following research question: is the BT effective in the treatment of UI and improves the quality of life of elderly women?

Therefore, this study aimed to evaluate the effectiveness of BT applied by the nurse for the treatment of UI and improvement in the quality of life of elderly women.

METHODOLOGY

This was a quantitative study for an evaluation in the same group of patients, before and after an intervention, being called a study of before and after type.⁷ Data were collected by the principal author who was trained to implement the behavioral therapy in the Uro-Geriatrics outpatient clinic of a University Hospital in the city of Rio de Janeiro, between April of 2011 and June of 2012. The training occurred during team meetings and lectures of permanent education, organized by professionals from the Center of Attention to the Elderly (NAI).

Elderly women, aged ≥ 60 years and enrolled in the outpatient clinic with complaints of involuntary urine loss were

included in the study. Elderly women showing cognitive disorder identified by the Mini Mental State examination, with result < 23 points, and elderly women with episodes of urinary loss due to infection and improvement after treatment with antibiotics were excluded from the study.

Twenty women were initially included in the study; however, the data from only 13 were used in the analysis due to follow-up losses throughout the data collection process: 03 patients finished the BT but did not turn the second micturition diary in and 04 concluded the BT only after the data collection period. Thus, the study population included all ambulatory elderly who met the inclusion criteria, as it is a quantitative < 30 patients. Therefore, there was no need to calculate the sample size because the total population was used.

Data were collected using evaluating instruments from the Uro-Geriatrics outpatient clinic, applied before and after the BT: micturition diary; nursing evaluation of the BT; and questionnaire on the quality of life of women with IU - *King's Health Questionnaire (KHQ)*.

The micturition diary was chosen as an instrument because it allows an objective evaluation of the micturition parameters. The micturition diary contains the following elements: the amount of liquid ingested and eliminated; episodes of involuntary loss of urine; frequency in which they occur; and in what circumstances urine loss occurs. The volume of liquid ingested and eliminated is measured through a measuring cup with values in milliliters. In the case of episodes of urinary loss, it is recorded if this loss is associated with exertion or situations of urgency. These records were carried out daily over the course of three days by each senior citizen in her domicile. The micturition diary and the measuring cup were provided by the URO-Geriatrics outpatient clinic. The annotations were always complemented by the time at which they occurred to guide the information on life habits provided by the nurse.

Through the nursing assessment, data were obtained on the elderly's life habits, water intake, micturition rhythm, bowel movements, weight control, diet, sex life, and adherence to perineal exercises.

The guidelines on life habits involve the establishment of a micturition rhythm; avoiding excessive intake of liquids at night; avoiding ingesting drinks (coffee, alcohol, and teas); weight reduction, if necessary; regularization of bowel movements(guidance

on physical activity and intake of water and foods rich in fibers).

The guidance on the establishment of a micturition rhythm consists of initially going to the bathroom every hour, followed by the progressive increase of this interval, i.e., the elderly should be instructed to urinate every 2 h, or every 3 h (only during wakefulness) and suppress the urge to urinate in the intervals. If continence during these periods is restored, intervals will be progressively increased between micturition.⁸ The purpose of bladder re-education is to increase its functional capacity whereas the training improves the cortical inhibition of the functioning of the lower urinary tract.⁸

Avoiding an excessive intake of liquids at night prevents frequent trips to the bathroom overnight, which disrupts the sleep and increases the risk of falling. Avoiding ingesting drinks like coffee, alcohol, and teas is justified by the fact that coffee makes bladder contraction more frequently, alcohol has a diuretic effect increasing the number of trips to the bathroom, and caffeine has a diuretic action increasing urinary volume. The ingestion of caffeine in high concentrations may cause instability in the detrusor muscle and, consequently, involuntary loss of urine. Caffeine can determine vesical hyperactivity due to the fact of having an exciting effect on the detrusor smooth muscle. In cystometry, an increase in urgency and frequency of urination after caffeine ingestion occurs.⁹

It is important that the elderly reduces the amount of caffeine and other bladder irritant substances and increases the intake of water; the urine produced will be less concentrated and non-irritating to the vesical wall.^{8,11}

Weight loss is suggested to the elderly, if necessary, as well as the regularization of bowel movements to improve the UI symptoms because the increased water and fiber intake prevents constipation, which is one of the factors responsible for worsening UI.⁸

Finally, Kegel exercises were perineal exercises used for training muscles, which consists of contracting and relaxing the urethra by contracting the muscles that lift the anus, holding these contractions for five seconds with resting at intervals of 10 seconds.

An important factor for urinary continence is the supporting network formed by fibers in the anus lifting muscle that are linked to the endopelvic fascia surrounding the vagina and distal portion of the urethra. During muscle contraction, the fibers will haul the endopelvic fascia towards the pubis and

compress them against the vaginal wall, keeping the urethral lumen occluded.¹¹

Strengthening the pelvic musculature is based on the precept that repeated voluntary movements provide increased muscle strength.¹⁰ Thus, perineal exercises are beneficial by entailing the strengthening of supporting elements and by improving urethral resistance. However, for perineal exercises to be carried out efficiently, it is necessary that the elderly understands the anatomy and physiology of the urinary tract, being this understanding the foundation of the BT.¹²

The KHQ questionnaire was included in the study because it is a collection instrument specific to verify the impact on the quality of life of individuals with UI, and thus, it is employed in other studies within this theme. Therefore, the use of KHQ allows the comparison of results between studies and contributes to more consistent conclusions.⁹ It allows global measurement and evaluates the impact of symptoms on various aspects of the individual's quality of life. The KHQ was constructed and validated in the English language by Kelleher (1997); it was validated by the year 2000 in seven languages besides being in the process of validation in other languages.¹⁰

The KHQ was properly translated and adapted into Brazilian Portuguese, features high reliability and validity, and should be included and used in any Brazilian study about UI and, when possible, in the clinical practice.

The KHQ is composed of 21 questions, divided into eight domains: general health perception (one item), UI impact (one item), limitations of daily activities (two items), physical limitations (three items), and sleeping/mood (two items).

In addition to these domains, there are two other independent scales: one evaluates the severity of IU (severity measures) and the other the presence and intensity of urinary symptoms (urinary symptoms scale). These scales are graduated in four options of answers ("not a bit, somewhat, moderately, a lot" or "never, sometimes, often, all the time"), with except in the domain: general health perception with five choices of answers ("very good, good, regular, bad, very bad"), and the domain: personal relationships ("do not apply, not at all, a little, moderately, and a lot").

The elderly was questioned as follows about their general perception of health: "How do you consider your health right now?". The KHQ is punctuated by each domain and not with an overall score. Scores range from 0

to 100, and the higher the score, the worse is the quality of life related to that domain.

Nursing consultations were distributed in three moments: 1st Moment - Before BT - on the first consultation the material for the micturition diary was provided, assessment of life habits, and filling of the KKHQ. 2nd Moment - Intervention - the second consultation occurred one week after the first consultation to assess the micturition diary, guidance on life habits, and perineal exercises. The third consultation was a month later with the delivery of material for another micturition diary and therapy evaluation. 3rd Moment - After the BT - two weeks after the third consultation, the 4th consultation was conducted for the evaluation and comparison of micturition diaries; each elderly woman was followed-up for three months.

The effectiveness of the BT for micturition control and improvement in the quality of life were evaluated from the comparison of micturition diaries data, KHQ, and nursing evaluation before and after BT. Data evaluation was conducted through nominal measurement, descriptive statistics, and analysis of variance as described in the following steps:

1st step: nominal measurement - the elderly responses were transformed into numbers to make the qualitative data into quantitative, for example, the responses: good, regular, and bad about perception of health in relation to urinary incontinence were coded into numbers.

2nd stage: descriptive statistics - the systematization of information was applied to a better understanding of the data to allow the correlation of variables presented in the data collection instruments. Each variable was described through the demonstration of data relative frequency (percentage), for example: how many times the regular response has emerged when the elderly woman was questioned about their perception of health regarding UI?

3rd stage: analysis of variance (ANOVA) - the analysis of variance of repeated measures ANOVA was used. This type of analysis is indicated when compared averages are averages at different time points, i.e., when there are two moments of data collection in the same group.¹³ This type of analysis provides information about the main effect on the occasion, i.e. if measures differ significantly in different time points.¹³ It allows an evaluation of variables before and after the BT, for example: if in the first KHQ the elderly answered that her health situation was regular, the ANOVA of repeated measures

assessed if this response has changed or not after the BT.

The study was approved by the Research Ethics Committee at the University Hospital, where the study was conducted, under registration No. 3021/2011-CAAE 0165022800011.

RESULTS

Sociodemographic characteristics, data on sex life and relationship with own body, urinary parameters, and KHQ responses, which are related to the effectiveness of BT in micturition control, quality of life and, consequently, reduction of expenses are presented.

Elderly widows predominated in the studied group, totaling six (46.15%). Three were married (23.07%), three were singles (23.07%), and one was a divorcee (7.69%). Three were aged 65-69 years (23.07%), four were between 70-74 years old (30.77%), three

were between 75-79 years old (23.07%), and three were ≥ 80 years old.

Regarding satisfaction with sex life, six elderly (46.15%) reported satisfaction and four (30.7%) reported dissatisfaction. However, when questioned about sexual activity, 12 women (92.30%) reported having no sexual activity and no desire. Seven elderly (53.84%) responded that they were not satisfied with their own body.

Data on the distribution of type of UI related to clinical complaints are represented in Table 1.

Table 1. Distribution of the classification of urinary incontinence types based on clinical complaints by elderly women, Rio de Janeiro, 2012.

Clinical complaint	n	N (%)
Urgency urinary incontinence	3	23.07
Stress urinary incontinence	2	15.38
Mixed Urinary Incontinence	8	61.53

The symptoms related to UI before and after TC are represented in Table 2.

Table 2. Distribution of symptoms related to urinary incontinence, Rio de Janeiro, 2012.

Clinical complaint	Before n (%)	After N (%)
Involuntary urinary loss	100	75
Need to use hygienic protector	46.15	23.07
Involuntary loss of urine during Kegel exercises	7.69	-
Insomnia due to urinary incontinence	75	53.84

The results on changes in life habits are depicted in Table 3.

Table 3. Distribution of changes in life habits, Rio de Janeiro, 2012.

Life habits	Before n (%)	After n (%)
Water intake in the morning	30.76	100
Go to the bathroom every 3 hours	61.53	92.30
Above the right weight for height	53.84	50
Constipation	50	46.15

The comparison between pre- and post-therapy showed an average of four urination episodes observed in the pre-therapy period, between the 1st and 3rd days. In the post-therapy period, between the 1st and 2nd days, an average of two episodes, and one episode on the 3rd day.

About episodes of involuntary urinary loss during the pre-therapy period, an average of two episodes was observed on the 1st day and

three episodes on the 2nd and 3rd days. In the post-therapy period, an average of one episode on the 1st and 2nd day, and absence of episodes on the 3rd day were observed.

At the end of the BT, 09 (75%) elders showed no urinary loss. Therefore, there was a reduction in health costs by reducing expenditure on sanitary pads and diapers, no need to be forwarded to surgical correction,

and reduction in medication costs and treatment maintenance.

As for the efficient contraction of perineal muscles, in the pre-therapy period, three elders (23.07%) did not present efficient contraction. However, when compared with the post-therapy period, 12 elders (92.30%) presented efficient contraction.

It was observed that in the domain general perception of health, prior to therapy, four elders (38.46%) responded as good, six as regular (46.15%), and three as bad (23.07%). After the therapy, three (23.07%) responded as very good, five (38.46%) as good, and five (38.46%) as regular.

In relation to the UI impact before therapy, four elders (30.77%) responded that it affected them a lot. After being subjected to the therapy this number reduced to one elder (7.69%). In the context of social life, three elders (23.07%) responded that UI affected them a lot, however, this perception was modified after the BT by the decline in responses from only three elders (23.07%).

The pre-therapy limitations related to IU in family life were reflected in the following answers: three elders (23.07%) reported that UI affected a little, one (7.69%) that it affects moderately, one (7.69%) that it affected a lot, seven (53.84%) that it did not affect, and three (23.07%) that it did not apply because they do not live with family members, or they do not know about the UI. After therapy, one elder (7.69 %) responded that it affected a little, six (46.15%) that it does not affect, and other six (46.15%) that it did not apply.

About the domain of emotions before the BT, two elders (15.38%) responded that UI generated anxiety and nervousness. Only one elder (7.69%) pointed out nervousness at post-therapy.

DISCUSSION

This study demonstrated that the elderly who participated in BT achieved improved urinary control and, consequently, in their quality of life, which denotes the contemplation of the purpose of the study.

During the follow-up, it was observed that the elderly who were accompanied by their families in the consultations showed increased adherence to the BT because the escorts strengthened the guidelines provided by the nurses, helped with the micturition diary notes, and the elderly themselves were more committed to following the protocol because they felt supported by their partners, family members, or caregivers.

Such study results were consistent with the fundamentals of the Theory of Self-care since the roles of nurse and patient are complementary, that is, they both work together to achieve the goal of self-care.⁶

The BT is a work integrated with the patient in which the nurse guides actions and the patient practices them. The system is feedbacked, as the patient adhered to the practices of self-care and the nurse reinforces the guidelines in order to achieve the main objective, a sense of well-being.

BT fits in the education and support system, predicted as one of the nursing actions. The results of this study show the importance of health education for the elderly through self-care and the help of a nurse to change the UI clinical picture, modifying other aspects of life.

When seven elders (53.84%) reported dissatisfaction with their own bodies, it was noted that low self-esteem is a common consequence generated by UI. By knowing the individual and social realities, nursing can come to seek a better understanding of the health and disease processes, and better support the practice of care for women in various stages of life.⁵

Regarding the involuntary urinary loss parameter, nine elders (75%) did not have urinary loss at the end of BT. Similar results had already been described in another study in which 50% of elders presented absence of urine leakage after BT³ confirming the relevance of this type of therapeutic approach.

These results relate the impact of BT in costs incurred by patients suffering from UI because with no urinary loss the need to buy pads and adult diapers is eliminated. UI panties are at an approximate retail value of R\$80.00 (eighty reais, which is approximately twenty seven American dollars) each. Geriatric pads cost an average of R\$40.00 (forty reais) per package with 30 units. Therefore, if an incontinent elderly woman uses around 05 pads per day, in a month she would use 150, which implies in a monthly expense of R\$120.00 (one hundred and twenty reais).

Moreover, even those who could not be free of urinary loss episodes, but showed decreased symptoms of urgent urination, experienced some dropping costs because they no longer need to take medications, for example, 5 mg of oxybutynin hydrochloride, which costs an average of R\$ 20.00 (twenty reais) per box with 30 pills.

The elderly referred to IU as a compromising factor to their quality of life,

corroborating the results reported in a recent publication in which 87% of women with IU reported some degree of limitation in performing household chores, whereas 77% reported limitations in relation to work and performance of tasks away from home.¹¹

Another result from the study was about the high consumption of protective materials like diapers, pads, and other devices by quantifying the percentage of women who used them. UI generates increased health expenditures¹⁴ in addition to hindering or preventing the performance of paid work outside the home by elderly women with the ability to perform daily living activities.¹⁵

Degraded sleeping pattern in elderly women can be associated with nocturia. Despite the pathophysiological explanations, its influence on sleep disorders has not yet been clarified.¹⁶ Other studies report that at least 63.3% of patients with UI feel tired by not having a good sleeping pattern.¹⁷

The results highlight the importance of implementing BT before submitting the elderly to other types of treatment. When considering that an elderly woman often presents co-morbidities, the surgical intervention should be seen as the last resort.

A research conducted in Spain with 302 elderly, between 2003 and 2010, showed that among women who underwent the surgical procedure there is a 50% chance of failure for those who have suffered previous dystocia births, 66% in those with type I DM, 41% of hypertensives, 66% with respiratory disorders, 37% when in use of an anxiolytic, 28% with arthrosis, 40% for the obese, 13% for those hysterectomized, and 30% for those with prior perineoplasty surgery.¹⁸

Another study conducted with Brazilian women shows that the prevalence of UI can reach 61% in hypertensive and diabetic women.¹⁹ This demonstrates that co-morbidities should always be evaluated when choosing a treatment approach because of the unnecessary cost and negative impact on the quality of life that complication from a surgical procedure can entail.

Therefore, BT emerges as a treatment option that does not present risks to elderly people. This result corroborates the findings found in the literature recommending the implementation of BT before referring a patient with UI to a surgical procedure. Moreover, even when there is a need for surgical intervention, BT can be performed after the procedure to optimize late postoperative rehabilitation.³

CONCLUSION

With this study, it was possible to demonstrate the effectiveness of BT applied by the nurse because its benefits go beyond the micturition control. The recovery of continence improves the quality of life, allowing the performance of basic and advanced life activities along with a reduction in expenses with diapers or sanitary pads. Such achievements result and potentiate the interpersonal bond between the caregiver and patient.

Furthermore, the results evidenced the importance of implementing BT before submitting the elderly to other types of treatment. The importance of self-care is emphasized as a step for the maintenance of functionality in regards to awareness and behavioral change.

The limitations of this study are related to the number of subjects, which made it impossible to be conducted as a controlled trial. However, there are prospects for new studies on this subject to expand the number of elderly submitted to BT. Finally, it was possible to demonstrate that the nursing care is always innovative when it promotes and sensitizes patients towards self-care, helping changing their health condition.

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Submission: 2014/02/08
Accepted: 2015/03/31
Publishing: 2015/08/01

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