Original Article

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☑ Knowledge translation and advances in health and nursing practices

Implementation of the thirst management model in the burn unit guided by knowledge translation

Implantação do modelo de manejo da sede na unidade de queimados norteada pelo knowledge translation

Implementación del modelo de gestión de la sed en la unidad de quemados guiada por laknowledge translation

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ABSTRACT

Objective: To implement the preoperative Thirst Management Model, measuring its adoption, coverage, acceptability, feasibility and fidelity by nursing in a burn unit.

Method: Quasi-experimental, pre- and post-test intervention study. Sample of 59 patients at pre-implementation and 40 post-implementation and 36 nursing professionals participating in the implementation in a burn unit from August (2019) to March (2020). Statistical analysis used Mann-Whitney and Chi-square.

Results: Adoption of management ranged from 0.0% to 72.5% post-implementation. The capacity coverage was 87.5% of nurses and 87.9% of nursing technicians. There was acceptability and feasibility of thirst management by professionals. In the plan-do-study-act cycles, three pillars of the Model reached the goals, showing fidelity.

Conclusion: The implantation of the Preoperative Thirst Management Model had acceptability and feasibility by the nursing team, showing fidelity in achieving the proposed goals, in addition to the adoption of evidence in clinical practice after high coverage professional training.

Keywords: Thirst. Perioperative nursing. Burn units. Evidence-based nursing. Translational research, biomedical.

RESUMO

Objetivo: Implantar o Modelo de Manejo da Sede no pré-operatório mensurando a sua adoção, cobertura, aceitabilidade, viabilidade e fidelidade pela enfermagem em uma unidade de queimados.

Método: Estudo de intervenção quase-experimental, pré e pós-teste. Amostra de 59 pacientes na pré-implantação e 40 pós-implantação e 36 profissionais de enfermagem participantes da implantação em um centro de queimados de agosto (2019) à março (2020). Análise estatística utilizou Mann-Whitney e Chi-quadrado.

Resultados: Adoção do manejo variou de 0,0% para 72,5% pós-implantação. Cobertura da capacitação de 87,5% das enfermeiras e 87,9% dos técnicos de enfermagem. Houve aceitabilidade e viabilidade do manejo da sede pelos profissionais. Nos ciclos planejar-fazer-estudar-agir três dos quatro pilares do Modelo alcançaram as metas, evidenciando fidelidade.

Conclusão: A implantação do Modelo de Manejo da Sede no pré-operatório teve aceitabilidade e viabilidade pela equipe de enfermagem, apresentando fidelidade pelo alcance das metas propostas, além da adoção da evidência na prática clínica após alta cobertura das capacitações dos profissionais.

Palavras-chave: Sede. Enfermagem perioperatória. Unidades de queimados. Enfermagem baseada em evidências. Pesquisa translacional biomédica.

RESUMEN

Objetivo: Implementar el Modelo de Gestión de la Sed Preoperatoria, midiendo su adopción, cobertura, aceptabilidad, factibilidad y fidelidad por parte de enfermería en una unidad de quemados.

Método: Estudio de intervención cuasi-experimental, pre- y post-test. Muestra de 59 pacientes en la pre-implementación y 40 en la post-implementación y 36 profesionales de enfermería participantes en la implementación en un centro de quemados desde agosto (2019) hasta marzo (2020). El análisis estadístico utilizó Mann-Whitney y Chi-cuadrado.

Resultados: La adopción de la gestión osciló entre el 0,0% y el 72,5% después de la aplicación. La cobertura de la formación fue del 87,5% de los enfermeros y del 87,9% de los técnicos. Hubo aceptación y viabilidad de lagestión por parte de los profesionales. En los ciclos planear-hacer-estudiar-actuar tres de cuatro pilares del Modelo alcanzaron las metas, evidenciando fidelidad.

Conclusión: La implantación del Modelo de Gestión de la Sed Preoperatoria fue aceptable y viable por el equipo de enfermería, demostrando fidelidad a la consecución de los objetivos propuestos, además de la adopción de evidencias en la práctica clínica tras alta cobertura de formación profesional.

Palabras clave: Sed. Enfermería perioperatoria. Unidades de quemados. Enfermería basada en la evidencia. Investigación biomédica traslacional.

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INTRODUCTION

Burned patients are usually submitted to multiple anesthetic procedures to undergo balneotherapy and surgery due to the complexity of their care. In the pre-anesthetic period, several factors converge so that the burned patient feel intensely thirsty, becoming a source of restlessness and suffering. Fear and anxiety while experiencing painful due to the procedure, use of opioids for daily pain control, the burn pathophysiology that causes hydroelectrolyte imbalance and fluid loss due to injuries, in addition to the long periods of fasting imposed on these patients, make thirst a constant experience[1–2].

Although thirst is a prevalent, intense and highly relevant discomfort identified in the clinical practice of this population, there is no research on this theme in the burned patient. A systematic review on reduction of preoperative fasting in burned patients[2]shows the gap on the theme.

Thus, a group of perioperative nurses developed the Thirst Management Model (TMM), based on recent studies in the physiology of sensation, with evidence for both identification and treatment of thirst. It is a model based on four pillars: identification of thirst; measurement of the intensity of thirst; assessment of safety for management and offering of a thirst relief strategy. The initial focus of TMM action was patients in the anesthetic recovery room, later extending to fasting patients in the preoperative period[3]. Motivated by presentations at scientific events, lives and articles published by the Group of Study and Research on Thirst (*Grupo de Estudos e Pesquisa da Sede* – GPS), there was a demand from several public and private health institutions, requesting our help to implement the TMM in the pre- and post- immediate operative period (POI). Therefore, we conducted in-person and online workshops (during the pandemic), with a theoretical and practical approach to the concepts involved in TMM, using multifaceted strategies such as an e-book, an audiovisual resource platform and interactive exercises. The feedback from the participating institutions was very positive, considering the repercussions by the team and patients.

However, the simple dissemination of research results does not imply their incorporation into practice with patients[4]. Scientific evidence takes an average of 17 years to be put into practice in the health care area[5]. Therefore, for successful implementations to occur, it is necessary to use innovative interventions such as Knowledge Translation (KT), in order to translate and exchange knowledge between professionals and new evidence, bringing them into practice and transforming reality. This requires complex changes in behavior, culture, values, and the need to consider the multiple factors that may facilitate or hinder an implementation[6].

The KT theoretical framework involves professionals as agents of change in their work process and is based on four fundamental points: Synthesis of the best available evidence on the topic to be implemented; Dissemination of synthesized knowledge, adaptation and intermediation of the message toappropriate audience; Exchange of knowledge between researchers and decision-making professionals and Ethically solid application of knowledge to improve health[4].

In addition, KT considers six essential elements: use of scientific evidence; knowledge of the scenario/context; use of multifaceted interventions; identification of barriers and facilitators for implementing the use of evidence; evaluation/audits; and sustainability of implementation[4].

Based on this premise, the scenario of suffering caused by water restriction and multiple procedures faced by the burned patient, in addition to the lack of protocols for treating thirst in this population, motivated the implementation of TMM in this context.

The evaluation of a successful implementation is complex and multifactorial and should consider indicators that contemplate the dynamics of a knowledge transfer. The research question to be answered was: Does the implementation of the preoperative Thirst Management Model present adoption, coverage, acceptability, feasibility, and fidelity by nursing in a burn unit?

Thus, the objective of the study was to implement the preoperative Thirst Management Model, measuring its adoption, coverage, acceptability, feasibility, and fidelity by nursing in a burn unit.

METHOD

Type of study

A quasi-experimental intervention study[7], of pre- and post-test type, with a time-series design and analytical approach.

For the systematization and operationalization of TMM implantation in surgical patients in the preoperative period in the burn treatment center (BTC), the KT intervention called Evidence-Based Practice for Improving Quality (EPIQ) was used, which is multifaceted and interactive, with the objective of implementing changes and promoting quality improvement in health practice[8–9].

Based on data from reality, evidence and the collaboration of a small group of local professionals, called the Research and Practice Council (RPC) was used, which acts as an internal facilitator and implements the multifaceted strategies. The EPIQ intervention divides the implementation process into two major stages – Preparation; Implementation and change.

In addition, it considers three fundamental points: use of published literature; use of practice data of the unit in which the strategy will be implemented, assisting professionals in decision making and support the need for change within the service; sharing of experiences regarding the change in practice and the outcomes obtained, in order to sustain the implemented change[8–9].

Scenario

The study was conducted in a BTC of a teaching hospital in the city of Londrina, PR, a reference in southern Brazil. The unit consists of six intensive care beds, 15 wards, two operating rooms and a room for balneotherapy for exclusive use of adult and pediatric burn patients.

Population, Participants and Selection Criteria

In order to assist in the TMM implementation process, an RPC of BTC professionals was formed. The selection of the components of this group was intentional and the inclusion criteria were determined on their professional experiences about the theme thirst or care for burned patients and representative insertion in the unit, to act as facilitating members and decision makers during and after the implementation process. Those selected were formally invited to compose the RPC. A multiprofessional group defined the team: nurse manager of the BTC and an assistant nurse, two nursing technicians, surgeon-in-chief of the unit, an anesthesiologist and two professors of nursing with doctoral degree on thirst. This group of professionals was not part of the sample for this study.

Two distinct populations were part of this study, with different characteristics and purposes: BTC nursing team and surgical burned patients in the preoperative period. The samples from these populations were non-probabilistic, determined by the time of data collection (pre-implantation two months and post-implantation 3 weeks).

The first group that composed the sample were burned patients, who were in the preoperative period, with the possibility of receiving TMM, of both genders, adults, and pediatrics (minimum age of 3 years). The patients participating in the pre- and post-implantation periods were not the same. Inclusion criteria were burned patients being in the preoperative period, guided in time and space and not having received preanesthetic medication. The non-inclusion criteria were patients being intubated, tracheostomized, in the post-extubation period and/or hospitalized in another unit.

The second group consisted of the BTC nursing team, consisting of eight nurses and 33 nursing technicians, distributed in the morning, afternoon and night shifts. The sample of this population included 36 professionals, seven nurses and 29 BTC nursing technicians, of both genders. The inclusion criterion was to work in the direct care of burned surgical patients. The non-inclusion criteria were workers being on vacation or leave at the time of conducting the research or refusing to participate in trainings. After sample definition, there was no loss.

Study variables

The primary outcome of the implantation was the adoption of the preoperative TMM by the professionals. Adoption involves the intention to use something that is available, an initial decision or action to employ a new intervention[10]. The evaluation of this variable was defined by the variation in the use of TMM between the pre- and post-implantation moments.

The use of preoperative TMM was defined as: if the patient was thirsty (spontaneously or when asked) the professional should apply the four pillars of the TMM, following the order of the pillars, appropriate for the age. If the patient was not thirsty, the professional should register the absence of the symptom.

Secondary outcomes were: coverage, feasibility, acceptability and fidelity. Coverage was defined by the proportion of nursing professionals who received training about TMM[10]. The focus on this professional category is due to the fact that they are responsible for applying TMM to the patient[3].

The feasibility outcome was also evaluated and defined as the extent to which an intervention can be performed in an environment[10], addressing the usefulness and adequacy of the embedded evidence. The outcome acceptability, by the team, that the evidence is useful in clinical practice[10]. These outcomes were measured based on the completion of a structured script about the usefulness, possibility of use and evaluation of thirst management relief strategies for their clinical practice. Completion of this script by the professional was not mandatory and happened at the end of the training meetings.

The last secondary outcome measured was fidelity, defined as the degree to which an intervention was implemented as designed in the original plan, and delivered as intended[10]. In the present study, it was measured by accomplishing the goals established by the external facilitator (main researcher) together with the RPC, before starting the period of setting each pillar of the TMM, using the PDSA improvement model (plan; do; study; act). In the PDSA the "plan" stage, a change aimed at improvement is identified. In the "do" stage the change is tested, the "study"

stage aims to examine the success of change. The last stage "act" focuses on identifying adaptations and the next steps to form a new cycle[11].

For each of the four TMM pillars, a PDSA cycle was performed, lasting three weeks each. Before starting each cycle, a meeting with the RPC was held to establish the change plan, multifaceted KT strategies to be used to engage the team with effective learning and the goal to be achieved. The objective was to involve the whole team in achieving the reinforcement of the TMM content and thus adopting it.

The audited indicator was the same for the four cycles and for the pre- and post-implantation data collection – use of TMM by the nursing team, in the preoperative period of burned patients. The goals were previously established by the external facilitator together with the RPC and verified through audits based on the perioperative form, which included the TMM data.

The audits to evaluate the achievement of the proposed goals were performed by the external facilitator, for three days, in the last week of each PDSA cycle and encompassed all patients on that day.

Instruments used to collect information

For the pre- and post-implantation collections, a structured script was used, submitted to validation by four judges, experts in perioperative nursing and members of the Study and ResearchGroup on Thirst (GPS) registered in the National Council for Scientific and Technological Development (CNPQ).

The data collected were demographic (gender and age); clinical (place of hospitalization, days of hospitalization, number of procedures performed, percentage of body burned surface); and related to thirst management in the preoperative period (presence and intensity of thirst; number of patients eligible to receive TMM; number of patients eligible for TMM application).

Before the beginning of pre-implantation data collection, a pilot test was performed with five patients, using the same structured script for its adequacy. No modifications were necessary, and the resulting data was discarded.

A second structured script was developed, validated by the GPS researchers, and used to collect data regarding the characteristics of trained nursing professionals: profession; gender; age; level of education; type of bond; existence of a second professional bond; length of service in the unit.

The third structured script developed and validated by the GPS researchers was about the usefulness, possibility of use and evaluation of thirst management relief strategies for clinical practice. It focused on the following questions: How do you assess the usefulness of thirst management for your clinical practice; Do you consider it possible to use the presented preoperative TMM in your clinical practice; Do you consider it possible to use some relief strategy presented for thirst management; Which thirst relief strategies presented do you consider you can use in your clinical practice.

Period and Data Collection

In July, before starting the steps recommended by the EPIQ, the main researcher who was also the external facilitator of the implementation, prioritized the construction of a relationship of trust and respect with the professionals, experiencing the daily life of the burn unit and participating in the processes of care. The data collection period took place from August 2019 to March 2020 and the activities took place over 30 weeks, including a three-week break before the start of post-implantation collection, as illustrated in Figure 1.

The implantation process took place in two major stages and, within them steps, were taken, following the recommendations of the EPIQ intervention: Preparation; Implantation and change[8–9]. In Preparation, pre-implantation data collection took place; training, sensitization and RPC training; evidence

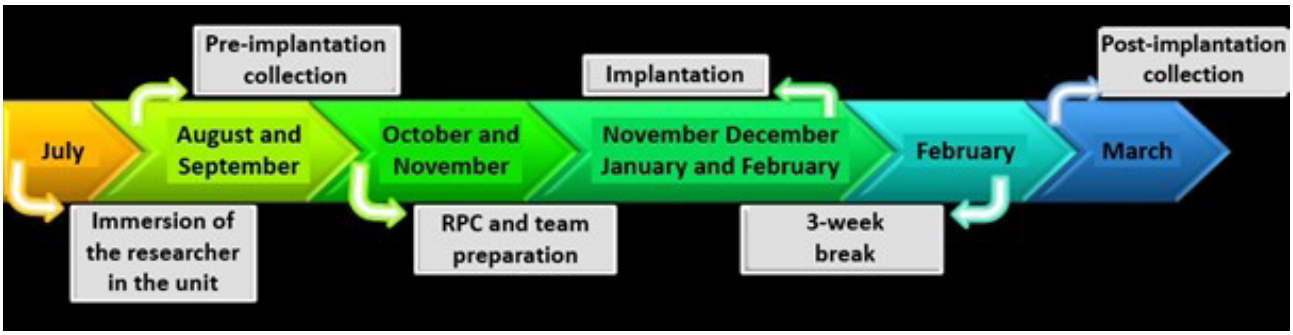

Figure 1 – Data collection process and implementation of the Thirst Management Model in the burn unit. Londrina, Paraná, Brazil, 2020

Source: Authors.

review; decision to change practice; identification of barriers and facilitators; sensitization and team training[8–9]. In the Implantation and change, the steps were to reinforce the content working on each one of the four pillars of the TMM; verification and implantation of the practice change plan using the PDSA model; and post-implantation data collection[8–9].

Pre-implantation data collection was conducted for two months (August and September 2019), in order to gather baseline data and enable the recognition of the real scenario of thirst in burned patients. At that moment, clinical and demographic data were collected from the patient's medical record. To collect data regarding thirst management, the external facilitator had to approach patients directly asking about their thirst, as there was no systematized record before implementation.

The same data were collected in the pre- and post-implantation period by the external facilitator. Data collection took place on three days a week, chosen considering the availability of external facilitator and in all shifts. The difference was that the data about thirst in the post-implantation collection were also located in the patient's medical record, since, during implantation, the TMM was inserted in the perioperative form records.

The professionals who assisted in decision-making (RPC) defined which and how the changes would be implemented in practice, being: application of TMM for fasting patients in the preoperative period, up to three hours before the procedure; and restructuring of the perioperative record instrument for insertion of the TMM. In the first pillar, identification of thirst, the professional should ask the patient about the presence of thirst; in the intensity measurement pillar, it should be used the Verbal Numeric Scale (VNS)[12] for adults and the Face Scale (FS) for children. In the management safety pillar, the professional should use the Safety Protocol for Thirst Management (SPTM) in adults[13]and the Safety Protocol for Pediatric Thirst Management (SPPTM)[14]. In the thirst relief strategy pillar, the ice popsicle[15]and lip moisturizer without menthol were chosen[16].

During the Implementation and change stage, the professionals absorbed the content that composes the TMM. To systematize this stage, the PDSA tool was used[11]. Chart 1 shows the four PDSA cycles.

At the end of the four cycles, the external facilitator left the unit for three weeks, to assess the scenario after a period without interventions, allowing the implemented processes to occur by decision of the unit's professionals. At the end of the break, in March 2020, the post-implantation collection began, lasting three weeks with an early interruption due to the COVID-19 pandemic.

Data analysis

Data were stored and analyzed using the IBM – SPSS®software (version 20.0).The categorical variables were analyzed using absolute and relative frequencies. Continuous variables were tested for normality test using the Shapiro-Wilk test and showed non-normal distribution. Thus, they were characterized by the median and values of the first and third quartiles.

For comparison of data collection variables of pre- and post-implantation (pre- and post-intervention), Mann-Whitney Test (continuous variables) was performed, due to the non-normality of the data, and Chi-square Test (categorical variables). For all comparisons, it was adopted a 5% significance level, with 95% confidence interval.

Ethical aspects

In compliance with Resolution no. 466/12, of the National Health Council, the research was approved by the Research Ethics Committee Involving Human Beings, of the *Universidade Estadual de Londrina*, with opinion 3,476,724 and Certificate of Presentation for Ethical Appreciation 1363851,1,0000,5231. All professionals, patients and those responsible for underage patients involved in the implantation process signed the Free and informed consent form at BTC. When patients were minors, they signed the consent form, in the presence of their legal guardians. The main researcher signed the terms of secrecy and confidentiality to have access to the medical records of the patients in the sample.

The recommendations of the Checklist for Quasi-Experimental Studies, The Joanna Briggs Institute (JBI) were followed.

RESULTS

The first sample of the study consisted of burned patients in the preoperative period. The flowchart of the participating patients is shown in Figure 2.

It was noticed that there was no statistically significant difference between the groups of patients approached in the pre- and post-implantation data collection, regarding demographic and clinical variables, which are shown in Table 1.

To identify the difference between categorical variables, in relation to the primary outcome which was the adoption of the use of TMM by the professional in the pre- and post-implantation moment, the Chi-square test was used, and for the continuous variables the Mann-Whitney test.

PDSA Cycle	Objective	Plan
Cycle1 Setting Pillar Identification	Professionals ask patients about the presence of thirst.	**Reminders:** Poster at the beginning of the Identification cycle; Posters for team on identification of thirst; Logo developed for the "PWT" project; Magnet with motivational phrase for BTC'smultiprofessional team.
	Observe peripheral signs of thirst.	**Educational meetings:** Training on the use of the perioperative form; Meeting with the hospital board. **Custom interventions:** "Glasses of intentionality" – the team asks the patient if they are thirsty; Sing songs with members of the "Sensibilizarte" group from the institution and GPS;
Cycle2 Setting Pillar Measurement	Training of professionals to use the intensity scales: VNS and FS.	**Reminders:** Poster at the beginning of the Measurement cycle; VNS and FS sticky on the clipboards; Wrapping of the popsicle storage freezer with the PWT logo. **Patient education:** Leaflet in admission about TMM; Informative posters for patients encouraging them to talk about thirst. **Custom interventions:** "measurement stop" – researchers asked team and patients about thirst intensity. **Practice facilitation:** Request lip moisturizer to the hospital pharmacy.
Cycle3 Setting Pillar Safety	Practical training for nursing technicians to use the SPTM and nurses the SPPTM.	**Reminders:** Poster for the beginning of the Safety cycle; SPTM and SPPTM sticky on the clipboards; SOP for adult and pediatric TMM; Playful SOP sticky on the walls of the BTC; Poster on the bed: "Attention: fasting patient. Manage the thirst!". **Educational meeting:** Practical and individual training of the nursing team on safety protocols. **Custom interventions:** "Bottles with eggs" – explain about risk assessment of TMM; Ice pops to the patient and professional participating in the training.
Cycle 4 Setting Pillar Relief strategy	Training of professionals to make ice popsicles.	**Reminders:**Poster of the start Cycle Relief Strategy; Posters about the thirst for patients and professionals. **Educational meetings:** Training of two nursing technicians to produce ice popsicles, while the nutrition area does not absorb the function; Continuation of practical and individual training of the nursing team on safety protocols. **Audit and feedback:** Audit of the professionals who applied the incomplete TMM; Previous assessments before the final audit of the cycle, to provide frequent feedback to professionals. **Custom interventions:** Motivational lecture with certificate of participation; "Popsicle stop" – those who respond that are thirsty receive popsicles (professionals, patients and companions); "Old versus new strategies"; Gift to best professionals in the application of TMM **Media for support:** Videos of adult and pediatric TMM.

Chart 1 – PDSA cycles (plan, do, study, act) performed by the external facilitator to nursing professionals (n=36) for setting the content of the Preoperative Thirst Management Model. Londrina, Paraná, Brazil, 2020

Source: Authors.
Legend: VNS – Verbal Numeric Scale; FS – Faces Scale; SPTM – Safety Protocol for Thirst Management; SPPTM – Safety Protocol for Pediatric Thirst Management; PWT – Patient Without Thirst; BTC – Burn Treatment Center; GPS – Group of Study and Research on Thirst; TMM – Thirst Management Model; SOP – Standard Operating Protocol.

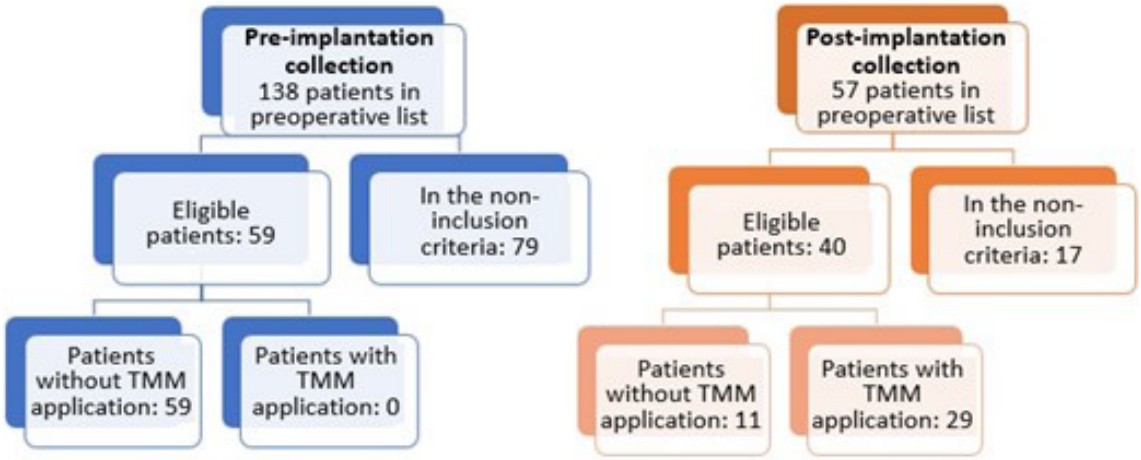

Figure 2 – Flowchart of participation of burned patients in preoperative period in the pre- and post-implantation periods. Londrina, Paraná, Brazil, 2020

Source: Authors.

Table 1 – Demographic and clinical variables of the patients participating in data collection in pre- (n=59) and post--implantation (n=40). Londrina, Paraná, Brazil, 2020

Variables	Pre-implantation	Post-implantation	†p-value
Gender			†0.496
Female	*36 (61.0)	*23 (57.5)	
Age (in years)			†0.366
≤12	*3 (5.1)	*0 (0.0)	
13-60	*44 (74.6)	*32 (80.0)	
≥61	*12 (20.3)	*8 (20.0)	
Place of hospitalization			†0.299
ICU	*18 (30.5)	*12 (30.0)	
Nursing ward	*41 (69.5)	*28 (70.0)	
			§p-value
Proportion of body burned surface	‡13,0 (7.8; 25.0)	‡10,0 (8.0; 16.0)	§0.121
Number of procedures performed	‡8,0 (4.0; 13.0)	‡9,0 (5.0; 15.0)	§0.623
Days of hospitalization	‡8,0 (5.0; 15.0)	‡13,0 (7.0; 20.5)	§0.108

Source: Authors.
Data expressed in *n(%); †Chi-square test; ‡Median (25-75 percentile); §Mann-Whitney test.

The Chi-Square test presents the variation (pre- and post-implantation) of the adoption of TMM use by the nursing team, in preoperative period of burned patients. At pre-implantation time, none (0.0%) of the 59 patients eligible to receive TMM received it. In the post-implantation period, from the 40 patients eligible to receive TMM, 29 (72.5%) received it, that is, there was register in the medical records of the identification, measurement, safety assessment and treatment of thirst. These data pointed out to the adoption of evidence in clinical practice ($p<0.001$).

The second sample group consisted of members of the BTC nursing team. From the eight nurses and 33 nursing technicians, seven and 29 of them, respectively, were trained to apply TMM to burned patients in the preoperative period. Thus, the training coverage rate reached 87.5% of nurses and 87.9% of nursing technicians. From the total number of professionals trained in the implementation process, 80.5% were nursing technicians, 80.6% were female, 44.4% were graduated from higher education, 66.7% of the professionals had a job contract and 72 .2% of them did not have a second job. The median age of trained professionals was 45 years, with a median service time of 72 months.

From the total number of trained professionals, 25 (69.4%) answered the script with questions related to the acceptability and feasibility of the TMM implementation in the BTC (Table 2).

The results point out that 93% of professionals consider the evidence possible to be implemented in the BTC (feasibility). In addition, 100% of them rated TMM as very or extremely useful in their practice and possible application of any thirst relief strategy.

The fidelity indicator goals were established in periodic meetings by the RPC to be evaluated by the PDSA cycles. In the Identification pillar, the goal set was 50% and after an audit, it reached 66%. In the second cycle, about the Measurement pillar, the set goal was 60%, with a final reach of 60%. In the third cycle, about the Safety pillar, the set goal was 60%, however, the reach was 40%. In the last cycle, about the Thirst Relief Strategy pillar, the goal was to reach 65% of TMM application by the professional, reaching 65.5% of adherence. There was, therefore, fidelity in three of the four PDSA cycles for achieving the proposed goals.

DISCUSSION

This study presented an innovative approach, contributing to the advancement of scientific nursing knowledge by using a theoretical framework never reported in a burn unit or in surgical patients, which allowed to systematize the process, fulfilling stages and steps to be followed for implementation.

During an implementation, it is necessary to verify whether the transferred knowledge is easily accessible, well understood by the target audience, usable and whether it produced the desired change. However, the answers to these questions are still complex and there is no consensus among researchers on the best way to evaluate the benefits of the use of knowledge[17].

Traditional efforts of evaluation that focus on efficacy or effectiveness represent a simplification of the environment and interventions used in the process. That is, the impact of complex interventions cannot be satisfactorily measured by simple evaluative models[18].

Research on evidence implementation, being multifactorial, can use multiple methods and different sources of information to provide a better understanding, involving the implementation issue. This happens because the activities and effects of the implementation process are not linear or static[10].

The different interested parties in the translation and exchange of knowledge must define, before starting the implementation process, how the success of the interventions will be measured, conduct the measurement and periodically monitor the results[18]. These notes highlight the importance of the role of the RPC as a multiprofessional council, decision maker and internal facilitator of the process, in addition to the use of the PDSA improvement tool that assisted in the periodic monitoring of results[11].

From the TMM implementation in the preoperative period, it was noticed that the burned patient feels thirst of great magnitude. This knowledge allows to support nursing professionals so that they can treat this symptom autonomously, intentionally, concretely, based on clinical evidence and safely[3].

This research still highlights a universe unexplored so far – the burned patient's thirst -, characterizing the insertion of TMM in this scenario as a break from the paradigms previously imposed on it. Among these, the belief that feeling thirsty was a price to be paid to safely go through the multiple perioperative periods – characteristic of this population – which intensifies their suffering.

The results of the study point out that, in the pre-implantation period, the thirst symptom was not intentionally seen by the burn unit professionals, corroborating with studies developed about thirst in surgical patients[19]. This reality seems to match the lack of knowledge on the subject in the literature, as there are no studies that describe the treatment of thirst in burned patients[2].

From this point of view, bridging the gap between scientific evidence and clinical practice in a scenario that did not

Table 2 – Acceptability and feasibility of the preoperative Thirst Management Model in the burn unit from the perspective of nursing professionals (n=25). Londrina, Paraná, Brazil, 2020

How do you evaluate the usefulness of thirst management for your clinical practice	
Extremely useful	64%
Very useful	36%
Little useful	0%
Do you consider it possible to use the preoperative thirst management model presented in your clinical practice	
Yes	93%
No	7%
Do you consider it possible to use any relief strategy presented for thirst management	
Yes	100%
No	0%
Which thirst relief strategies presented do you consider using in your clinical practice*	
Ice popsicle	44%
Minty popsicle	16%
Lip moisturizer	32%
Mint chewing gum	12%
More than one strategy	36%
Allstrategies	52%
No strategy	0%

Source: Authors.
*professional could choose more than one relief strategy option.

see the need for this movement proved to be a challenge for researchers. It was essential to use an innovative theoretical framework, which defended interventions designed and planned for the context, in order to achieve the goals established during the implementation process[8,20].

The use of the EPIQ intervention guided the composition of the RPC, involving professionals and encouraging them to appropriate their problems, facilitating acceptance and maximizing the impact of implementing evidence in practice[8]. This group acted as an internal facilitator in all stages of the process, even helping in the sustainability of practices when the external facilitator was removed from the scenario[8,21]. The importance of this group of facilitators is evident with the post-implantation results, which point to the adoption of preoperative TMM.

The presence of facilitation during the implementation process was a fundamental point for the successful adoption of the TMM in the BTC[6,20]. The external facilitator must be

able to allow context-specific recipients (BTC professionals) to adopt and properly apply the innovation (TMM). Their role is to build a plan of change together with the team (RPC) that addresses both the individual and the learning needs of the team. In addition, the facilitator needs to work flexibly to adapt to the environment, people involved and specific issues[6,20].

For the construction of the implementation plan in a systematic way during the implementation stage of the EPIQ intervention, the PDSA[11] model was used, which is recommended by an expert in the field to facilitate the translation and exchange of knowledge[20]. This tool assisted with important issues, establishing clear goals, showing the potential for improvement, auditing and providing regular feedback, enabling test changes on a small scale, thus maintaining the motivation and commitment of the team[6], collaborating for the fidelity of the process.

At the beginning of each cycle, the external facilitator together with the RPC planned the strategies tailored to the scenario, which would be used to reach the previously established goal, thus making the team jointly responsible for engaging in the strategies. To choose the multifaceted strategies, the findings of a systematic review on evidence implementation strategies in low- and middle-income countries were considered, the main ones being: educational meetings, training of health professionals, educational dissemination, facilitation of practice, training of local leaders, audits and feedback, custom interventions, patient education, strategies to improve the organizational culture, use of media for support and reminders to patients[22]. Another meta-analysis points out that this planning can increase the chances of a successful implementation[23].

However, a Cochrane systematic review brings reflections, indicating that custom interventions can change professional practice, although they are not always effective and, when they are, the effect is small to moderate. It states that there is not enough evidence on the most effective approaches to be adapted, including how determinants must be identified, how decisions must be made, and which determinants are most important to address, as well as how interventions must be selected to account for the determinants. Moreover, there is no evidence on the cost-effectiveness of custom interventions compared to other interventions to change professional practice. Therefore, future research should aim to develop and evaluate more systematic approaches to adaptation[17].

The data pointed out that three of the four PDSA cycles achieved the established goals. The third cycle, about the security pillar, obtained a lower percentage than the previously proposed. This drop may be related to some RPC members who acted as internal facilitators being on vacation, reducing the coordination, incentive, and support in conducting the TMM. This result states the importance of an involved and engaged leadership in promoting and sustaining the implementation process[24].

Another point to be considered is that pillar three is on the use of two safety protocols[3], which requires more time and greater skills. The complexity of the evidence can be a barrier to sustaining change in practice, especially in low- and middle-income countries, in addition to the lack of familiarity with the implementation process and the lack of a culture that encourages the adoption of evidence in practice[25].

Another factor was the daily presence of the external facilitator in the unit, with the role of facilitating the knowledge translation and exchange and availability to perform countless theoretical and practical trainings in all shifts, resulting in excellent coverage of professionals. On the other hand, the implementation of evidence in public health in Brazil is advancing slowly, because there is still not enough scientists and professionals with the appropriate capacity to translate evidence and act as permanent facilitators[26].

A favorable point for the adoption of the evidence by the team was the external facilitator being one of the authors of the TMM, contributing to increase the credibility of their role[27]. In addition, it is discussed the importance of raising awareness about the thirst problem for the team, based on baseline data (pre-implantation collection) of the unit, even before training them to use it[6].

The visible quantitative change in the pre- and post-implantation evaluations attest the quality of the theoretical framework chosen for the implementation of the evidence in practice[28].

As limitations of this study, we can point to non-probabilistic sampling, early interruption of post-implantation collection due to the pandemic, and the research not covered in depth the sustainability of the implantation. Scholars point out that evidence adopted and implemented in practice often does not sustain itself after a period longer than one year[29]. This can happen especially in low- and middle-income countries due to barriers in the adoption and dissemination of evidence-based practices. The complexity of the intervention adopted, the professionals' lack of familiarity with the implementation process, limited human resources, lack of support at the implantation location and the high turnover of professionals in the institutions are characterized as barriers to sustainability[25]. All these characteristics were found in the BTC scenario, during the implementation process[30].

Sustainability can be defined as the degree to which an innovation continues to be used after the end of initial efforts to ensure that the adoption of evidence has occurred[25]. The scope of this study does not cover all the required depth,

aiming at an approximation of sustainability. However, some initiatives were created aimed at a glimpse of sustainability of the the Patient Without Thirst (PWT) implementation project in the BTC. Among them the development of three theoretical-practical videos on adult and pediatric TMM, in order to train newly hired professionals; transform the TMM into a BTC quality indicator, requiring regular audits and feedback for and by professionals; development of a leaflet to be given to the patient/companion upon admission, with information about the TMM; and creation of a group between the external facilitator and internal facilitator nurses of the project, to be the bridge of continuity.

It is recommended that future studies be conducted in this same unit with the objective of evaluating the behavior of the changes adopted in long term and improving strategies to help support the project in maintaining the changes in practice obtained. This is a constant work of successive approximations.

CONCLUSION

The implementation of the Thirst Management Model in the preoperative period had acceptability and feasibility by the nursing team at the burn unit, with adoption of evidence in clinical practice when comparing pre- and post-implantation collection. In addition, it showed fidelity in three of the four PDSA cycles for achieving the proposed goals and there was high coverage of the training of BTC professionals.

The KT theoretical framework and the EPIQ intervention chosen to systematize the TMM implementation process proved to be suitable and innovative for a successful implementation.

It is expected that the results presented and discussed can help in future implementations of the TMM in different scenarios, with the aim of supporting nursing professionals in the treatment of this symptom in a humanized, intentional, safe, autonomous way and based on scientific and clinical evidence.

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