

Prevalence of defining characteristics of the proposed nursing diagnosis of perioperative thirst

Prevalência das características definidoras da proposição diagnóstica de enfermagem de sede perioperatória

Prevalencia de características definitorias de la propuesta diagnóstica de enfermería de sed perioperatoria

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ABSTRACT

Objective: to evaluate the prevalence of defining characteristics of the proposed diagnosis perioperative thirst, as compared between the pre- and immediate postoperative period. **Method:** this quantitative study was conducted with 150 patients at a large university hospital in northern Paraná, from December 2019 to January 2020. **Results:** mean fasting time was 13 hours ($\pm 5:11$). 69.3% of the patients presented thirst preoperatively and 81.3%, in the postoperative period; mean intensity was 4.62 (± 3.6) and 5.67 (± 3.53). The most frequently reported defining characteristic in both periods was dry mouth (75.3%-86.7%), followed by dry lips (71.3% - 82.7%); desire to drink water (64% - 72.7%); constant swallowing of saliva (62.7% - 70%); dry throat (58%-72%); thick saliva (48.7%-53.4%); thick tongue (46% - 54.7%); bad taste in the mouth (41% - 46%); caregiver's report (0.7%-0%). **Conclusion:** prevalence and intensity of thirst were high in both periods evaluated; five of the nine defining characteristics differed significantly between the periods.

Descriptors: Perioperative Nursing; Perioperative Care; Thirst; Nursing Diagnosis.

RESUMO

Objetivo: avaliar a preval ncia das caracter sticas definidoras da proposi o diagn stica sede perioperat ria, comparando-as no per odo pr  e p s-operat rio imediato. **M todo:** estudo quantitativo realizado em um hospital universit rio de grande porte no norte do Paran , no per odo de dezembro de 2019   janeiro de 2020, com 150 pacientes. **Resultados:** A m dia do tempo de jejum foi de 13 horas ($\pm 5:11$). Apresentaram sede no pr -operat rio 69,3% dos pacientes e 81,3% no p s-operat rio; intensidade m dia de 4,62 ($\pm 3,6$) e 5,67 ($\pm 3,53$). A caracter stica definidora mais relatada nos dois per odos foi boca seca (75,3%-86,7%), seguida por l bios ressecados (71,3%-82,7%); vontade de beber  gua (64%-72,7%); constante degluti o de saliva (62,7%-70%); garganta seca (58%-72%); saliva grossa (48,7%-53,4%); l ngua grossa (46%-54,7%); gosto ruim na boca (41%-46%); relato do cuidador (0,7%-0%). **Conclus o:** houve alta preval ncia e intensidade da sede em ambos os per odos avaliados; cinco das nove caracter sticas definidoras apresentaram diferen a significativa entre os dois momentos avaliados.

Descritores: Enfermagem Perioperat ria; Assist ncia Perioperat ria; Sede; Diagn stico de Enfermagem.

RESUMEN

Objetivo: evaluar la prevalencia de las caracter sticas definitorias de la propuesta diagn stica sed perioperatoria, compar ndolas en el periodo pre y postoperatorio inmediato. **M todo:** estudio cuantitativo realizado en un hospital universitario de gran porte en el norte de Paran , de diciembre de 2019 a enero de 2020 junto a 150 pacientes. **Resultados:** el tiempo medio de ayunas fue de 13 horas ($\pm 5:11$). El 69,3% de los pacientes present  sed en el preoperatorio y el 81,3% en el postoperatorio; la intensidad media fue de 4,62 ($\pm 3,6$) y 5,67 ($\pm 3,53$). La caracter stica definitoria notificada con mayor frecuencia en ambos per odos fue boca seca (75,3%-86,7%), seguida de labios resecaos (71,3%-82,7%); deseo de tomar agua (64%-72,7%); degluc n constante de saliva (62,7%-70%); garganta seca (58%-72%); saliva espesa (48,7%-53,4%); lengua gruesa (46%-54,7%); sabor desagradable en la boca (41%-46%); informe del cuidador (0,7%-0%) **Conclusi n:** hubo alta prevalencia e intensidad de sed en ambos periodos evaluados; cinco de las nueve caracter sticas definitorias mostraron una diferencia significativa entre los dos momentos evaluados.

Descritores: Enfermer a Perioperatoria; Atenci n Perioperativa; Sed; Diagn stico de Enfermer a.

INTRODUCTION

Thirst is a subjective and complex symptom that results in intense discomfort and distress in the perioperative period. It is a common phenomenon with up to 75% and 59% prevalence in adults^{1,2} and children¹, respectively, even reaching 97.5% in bariatric patients³. Several factors influence it, such as preoperative fasting time, loss of blood volume, need for intubation and anxiety, among others^{4,5}.

This symptom is the second most frequent discomfort in the immediate postoperative period (IPOP)², and exerts a negative influence on the surgical experience, enhancing the stress faced by the patient⁶. Even so, thirst is not contemplated as a Nursing Diagnosis (ND) by NANDA International (NANDA-I) 2018-2020⁷.

It is through NDs that nurses can determine the presence of a condition and act in the most appropriate way, benefiting the individual, a group or a community. In order to identify an ND, its defining characteristics (DCs) are observed, represented by a set of signals and symptoms associated with the clinical condition⁷.

The NANDA-I taxonomy lacks the Thirst diagnosis; it only includes the “261 – Risk for dry mouth” and “195 – Risk for electrolyte imbalance” NDs⁷. However, thirst differs from these diagnoses, as it is a multifactorial and complex symptom of neuronal and hormonal regulation, in addition to integrating cultural, emotional and environmental aspects^{4,8}. The Perioperative thirst ND proposal is necessary to improve identification of this symptom and professional nurses' actions in the face of an ND so prevalent and generating intense discomfort, thus enabling the prescription of measures to relieve thirst.

Recent advances in the study of perioperative thirst culminated in the development of the Perioperative thirst ND proposal, as well as its concept analysis and content validation resulting in the conceptual and operational definitions of nine DCs: dry mouth, dry throat, thick saliva, thick tongue, dry lips, constant swallowing of saliva, desire to drink water, bad taste in the mouth and caregiver's report^{9,10}.

It is necessary to improve the diverse evidence that provide theoretical and practical support to the already existing NDs, as well as to the new proposals. To such end, accuracy identifies the precision of the results presented by a measuring instrument with its actual reference value. The more accurate the attributes comprising an ND, the better will nurses use it while developing clinical reasoning and the assistance provided to the patients⁹.

A number of studies indicate that patients are competent enough to identify characteristics signaling the presence of thirst in the perioperative period¹¹. The following stand out among them: dry mouth, dry throat, dry lips, thick saliva, difficulty swallowing, thick tongue, bad breath, constant swallowing of saliva, water seeking behavior, desire to drink water, bitter mouth, rough mouth, bad taste in the mouth and burning sensation in the throat^{1,12,13}. The question that drove conduction of this study is as follows: How frequent are the DCs and which are the changes that take place in the IPOP when compared to the preoperative period?

In this context, the objective of the current study was to assess the prevalence of the DCs corresponding to the Perioperative thirst diagnostic proposal, comparing them between the pre- and immediate post-operative periods.

METHOD

This is a quantitative and cross-sectional study conducted in a large-sized university hospital from the inland of Paraná. The sample was consecutively selected for convenience. Sample calculation followed recommendations for diagnostic accuracy studies, where five to 30 patients are indicated for each clinical indicator, consisting of a ratio of 16 individuals for each of the nine DCs, a total of 144, plus six patients, resulting in 150 subjects. They were approached as they arrived at the preoperative room and also in the anesthesia recovery room¹⁴. The inclusion criteria were as follows: patients over 12 years of age; not presenting communication difficulties; conscious and oriented in time/space; elective or urgent/emergency surgical procedures, outpatients and hospitalized from December 2019 to January 2020.

The collection script was organized based on diverse information included in the medical chart: 1) sociodemographic data; 2) surgical anesthetic aspects; 3) presence and intensity of thirst; and 4) presence or absence of the DCs in the pre- and post-operative periods.

The Perioperative Thirst Discomfort Scale (PTDS) evaluates seven discomforts attributed to thirst: dry mouth, dry lips, dry throat, thick tongue, thick saliva, bad taste in the mouth and desire to drink water. Its score varies from 0 to 14, where 0 represents absence of discomfort in the patient and 14, extreme discomfort¹⁵.

The researchers invited the patients that were in the preoperative room to take part in the study; when the subjects accepted, they signed the Free and Informed Consent Form. Presence or absence of the DCs was evaluated during the IPOP, in the anesthesia recovery room. Presence of thirst was considered based on the patient's positive answer to the evaluator's question.

Collection was in charge of members of a research group – Thirst Study and Research Group – comprised by the researcher, two nurses and to undergraduate Nursing students. The evaluators were trained in relation to the ND, on how the characteristics of perioperative thirst were manifested, and regarding the collection script and the strategy to approach the patients.

The data were double-typed, tabulated and analyzed with the aid of Microsoft Excel® (2016) and IBM's *Statistical Package for Social Sciences*®, version 23. The descriptive data analysis for the categorical variables was performed by means of absolute and relative frequencies, with 95% confidence intervals. Central tendency and dispersion measures were used for the quantitative variables. Adherence to normal distribution among the quantitative variables was

verified with the Shapiro-Wilk test. The McNemar exact test with a significance value of 0.05 was used to compare the occurrence proportions of the defining characteristics before and after the surgical procedure.

The research protocol was approved by the Research Ethics Committee of the institution involved.

RESULTS

The research participants were 150 patients. The sociodemographic data are presented in Table 1.

TABLE 1: Sociodemographic data of the patients evaluated (n=150). Londrina, PR, Brazil, 2020.

Variables	n	f(%)	95% CI
Gender			
Male	61	40.7	32.8–48.9
Female	89	59.3	51.0–67.1
Scheduling modality			
Elective	98	65.3	57.0–72.7
Urgency	52	34.7	27.2–42.9
Classification			
ASA 1	55	36.7	29.0–44.9
ASA 2	88	58.7	50.3–66.5
ASA 3	05	03.3	01.2–08.0
Absent	02	01.3	00.2–05.2
Intraoperative bleeding			
Small	123	82.0	74.7–87.6
Average	023	15.3	10.1–22.3
Significant	003	02.0	00.5–06.1
Absent	001	00.7	0.00–04.2

There was predominance of females (59.3%), mean age of 43.1 years old (\pm 18.5) and varying from 13 to 85; white skin color (56%); with complete or incomplete Elementary School as schooling level (47.3%); and mostly undergoing elective surgeries (65.3%).

The mean fasting time for liquids in the preoperative period is presented in Table 2.

TABLE 2: Preoperative fasting time, thirst intensity and PTDS in the preoperative period. Londrina, PR, Brazil, 2020.

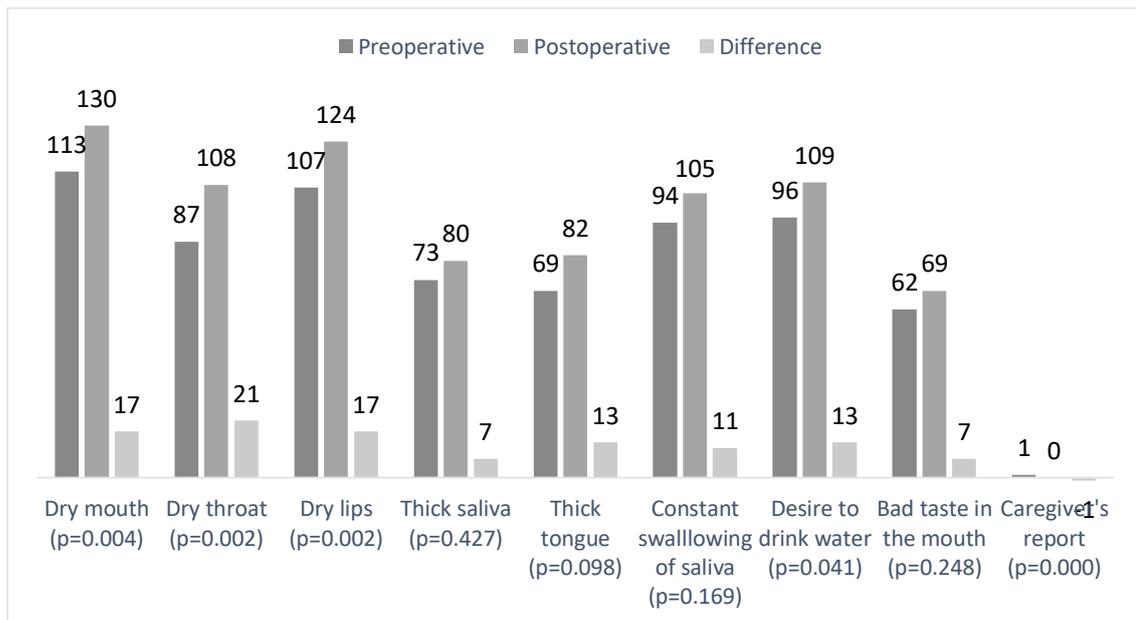
Variables	Mean	SD	Median	IQR	P*
Age (years old)	43.10	18.50	41.50	33.00	<0.000
Fasting time (hr:min)	13:10	05:11	12:50	05:52	<0.000
Thirst intensity	04.62	03.60	05.00	08.00	<0.000
Thirst discomfort (PTDS)	04.88	03.90	04.00	14.00	<0.000

*Teste de Shapiro-Wilk.

SD: Standard Deviation; IQR: Interquartile Range; hr: hour; min: minutes; PTDS: Perioperative Thirst Discomfort Scale

Thirst was found in 69.3% of the patients in the preoperative period and in 81.3% in the IPOP.

Figure 1 describes the distribution of the DCs in the pre- and IPOP periods.



*McNemar test

FIGURE 1: Incidence of the defining characteristics corresponding to the Perioperative thirst Nursing diagnosis proposal at the pre- and post-operative moments. Londrina, PR, Brazil, 2020.

The most representative clinics were as follows: Gynecological (26%), Orthopedics (20%), Urology (18.7%) and Ophthalmology (12.7%).

The DCs are presented in Table 3.

TABLE 3: Presence of the defining characteristics corresponding to the Perioperative thirst Nursing diagnosis proposal in the pre- and post-operative periods. Londrina, PR, Brazil, 2020.

Defining characteristics		Preoperative Thirst		Postoperative Thirst	
		Present(%)	Absent(%)	Present(%)	Absent(%)
Dry mouth	Present	96(64.0)	17(11.3)	115(76.7)	16(10.7)
	Absent	08(05.3)	29(19.3)	07(04.7)	12(08.0)
Desire to drink water	Present	86(57.3)	10(06.7)	110(73.3)	14(09.3)
	Absent	18(12.0)	36(24.0)	12(08.0)	14(09.3)
Dry lips	Present	85(56.7)	22(14.7)	104(69.3)	05(03.3)
	Absent	19(12.7)	24(16.0)	18(12.0)	23(15.3)
Constant swallowing of saliva	Present	79(52.7)	15(10.0)	98(65.3)	10(06.7)
	Absent	25(16.7)	31(20.7)	24(16.0)	18(12.0)
Dry throat	Present	73(48.7)	14(09.3)	90(60.0)	15(10.0)
	Absent	31(20.7)	32(21.3)	32(21.3)	13(08.7)
Thick saliva	Present	63(42.0)	10(06.7)	78(52.0)	03(02.0)
	Absent	41(27.3)	36(24.0)	44(29.3)	25(16.7)
Thick tongue	Present	60(40.0)	09(06.0)	72(48.0)	10(06.7)
	Absent	44(29.3)	37(24.7)	50(33.3)	18(12.0)
Bad taste in the mouth	Present	54(36.0)	08(05.3)	67(44.7)	02(01.3)
	Absent	50(33.3)	38(25.3)	55(36.7)	26(17.3)
Caregiver's report	Present	01(00.7)	-	-	-
	Absent	103(68.7)	46(30.7)	122(81.3)	28.0(18.7)

The DCs most frequently manifested in the preoperative period associated with the presence of thirst were dry mouth (64%) and desire to drink water (57.3%), while in the IPOP they were dry mouth (76.5%) and dry lips (73.3%).

DISCUSSION

The relevance of this study lies in assessing the presence of thirst and of its DCs during the perioperative period in the same patients, enabling analysis of the frequencies in the respective periods. This is an unprecedented approach in the study of perioperative thirst, allowing for the identification of changes in the DCs after the anesthetic-surgical act.

The mean fasting time in the preoperative period was 13 hours and 10 minutes (± 5.11), a period that is higher than the one recommended by ASA: two hours for clear liquids^{15,16}; although similar to other studies with a mean fasting time of 15 hours (± 6.30)¹. The long fasting period influences the discomfort experienced, as the absence of fluid intake generates an increase in serum osmolarity, activation of non-homeostatic receptors and, consequently, an increase in thirst^{17,18}.

The prevalence of thirst was high, rising from 69.3% in the preoperative period to 81.3% in the IPOP. The numbers highlight the relevance of the study and proved to be similar to the findings in the literature, which presented 78% prevalence in the IPOP¹⁸.

The mean for thirst intensity rose from 4.62 (± 3.6) to 5.67 (± 3.5) in the IPOP; similarly, the mean PTDS score was increased from 4.88 (± 3.9) to 6.45 (± 4.2). A number of studies indicate that the intensity mean value of PTDS in the IPOP was 5.0 (± 3.4)^{19,20}; a score that differs from the values found in this research. The change in the intensity values measured by PTDS reflects that a number of intraoperative factors worsen these discomforts in the IPOP. Looking intentionally at the discomfort generated by thirst should be a priority for Nursing care²¹.

In the preoperative period, the DCs that had the highest frequency values were as follows: dry mouth, dry lips, desire to drink water and constant swallowing of saliva; whereas in the IPOP they were dry mouth, dry lips, desire to drink water and dry throat.

Significant increases ($p < 0.005$) in dry mouth (64%-76.5%), dry throat (48.7%-65.3%), dry lips (56.7%-73.3%), desire to drink water (56.7%-73.3%) and caregiver's report (0.07%-0%) DCs were observed in the IPOP. Although the bad taste in the mouth and thick tongue DCs did not present any significant change and were less frequent in the patients' reports, 46% and 54.7% respectively, a similar study presented frequency values of 68.4% and 57.4%, respectively¹⁷.

Several factors can affect and aggravate thirst from one surgical period to the other and even during the anesthetic-surgical procedure, in which the patient stops producing the same amount of saliva. In general anesthesia cases where there is an intubation need, the patients remain with their mouth open for a given period of time, which influences dryness in the oral cavity due to evaporation of saliva. Low temperature in the operating room is another factor causing dryness in the oral cavity¹⁹⁻²³. Using anticholinergic agents and opioids reduces secretion of saliva^{18,22,23}. Such factors intensify the sensation of dry mouth, throat and lips and intensify the desire to drink water. Therefore, constant swallowing of saliva is a response to these stimuli, seeking to alleviate and mitigate these sensations¹⁹.

There are also other factors that justify and influence the presence of thirst, such as fasting time, anxiety, habit of drinking water, complexity of the surgical procedure and amount of intraoperative bleeding⁴. The dry throat DC was the one that presented the highest increase in the IPOP when compared to the preoperative period. The aforementioned factors can explain this difference²⁰.

The dry mouth DC presented a high frequency, as 75.3% of the patients reported it in the preoperative period and 64% of them associated it with the presence of thirst. In the IPOP, 86.7% of the patients reported this DC and 76.5% of them associated it with the presence of thirst. It was observed by 85.7% of the patients in the IPOP¹⁸. The explanation for the significant change in the proportion of this DC in both periods analyzed may be the same as previously mentioned, which enhances the theory about the factors that aggravate the occurrence of thirst and of the DCs^{18,20}.

In the preoperative period, 86 (57.3%) patients reported being thirsty, referring to the desire to drink water. There was a significant change between both periods, as 104 (69.3%) presented the DC related to thirst. The increased frequency can be attributed to fasting time, a factor that is responsible for the patient's osmotic dehydration and for the sensations of dry mouth and dry throat, which generate the desire to ingest fluids to quench thirst and relieve their discomfort.

The dry lips DC ranks second in terms of frequency and presence in patients who were thirsty in the IPOP (73.3%) and third in the preoperative period (56.7%); data which are similar to another study, in which this DC presented 78.5% incidence and was the fourth highest frequency¹⁸. The increase in incidence from one period to the other is due to reasons previously presented, such as dehydration, long fasting period, anesthetic-surgical procedure and low temperature in the operating room. All of them cause dryness both in the mouth and in the lips²².

The Perioperative thirst ND proposal is recent, and the scarcity of similar studies evaluating and comparing the DC in the surgical experience limited the comparison in the discussion of the research results. Such restriction drives new research studies to improve understanding of the findings of this study.

CONCLUSION

The results of this study allowed evaluating the prevalence of the DCs related to the Perioperative thirst diagnostic proposal and compare them between the pre- and post-operative periods. It was evidenced that the nine DCs (dry mouth, dry throat, desire to drink water, constant swallowing of saliva, dry lips, thick tongue, thick saliva, bad taste in the mouth and caregiver's report) presented high frequency values in both periods and were increased from the preoperative period to the IPOP, indicating that the conditions imposed on the patients during the intraoperative period interfere with the presence and perception of thirst.

In view of the high prevalence of the DCs and their increase from one surgical period to another, the severity of thirst becomes evident, as well as the need for health professionals to recognize and value it as a symptom of patient discomfort. The need for the Perioperative thirst ND proposal is also noted so that patient care is systematic and the nurses who work in this area observe it widely.

From the diverse evidence presented in this study it is expected that, in the future, the ND will be effectively created, in view of the rationale of its need and its importance for the patients. Future indexing of this diagnosis in the taxonomy will enhance the clinical practices, as well as Nursing teaching and research.

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