Twitter Users' Perception of World Breastfeeding Week

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ABSTRACT

Objective: To quantitatively analyze the speeches of Brazilian users of the social network Twitter during the World Breastfeeding Week 2020, whose theme for that year was based on the strengthening of breastfeeding for the sustainable development of the planet.

Methods: An observational, quantitative and continuous study of time series was carried out during the period from August 01 to 07, 2020. Data collection was performed using Python, which captured the tweets via the scroll bar. Ward's method was applied to obtain hierarchical clusters using R software.

Results: There were three major classes of words, which were called: (1) Breastfeeding benefits; (2) World Breastfeeding Day; (3) Baby's health.

Conclusion: users of the social network listed gave terms and speeches aligned with the proposal of the thematic week, since their publications contemplated the benefits of breastfeeding for the child and for the planet, also going through the pandemic context.

KEYWORDS: Breastfeeding; Infant nutrition; Child health

INTRODUCTION

In the 1970s, some research demonstrated the relationship between the increase in child malnutrition and the reduction in the practice of breastfeeding caused by the commercial promotion of infant formulas aimed at replacing breast milk. Since then, national and global health authorities have developed a set of policies aimed at promoting breastfeeding [1]. Since the end of 1979, at the 37th World Health Assembly, the World Health Organization (WHO) in agreement with the United Nations Children's Foundation (UNICEF), realized the need for greater regulation of the marketing of substitute infant formulas of breast milk and initiated in-depth consultations with experts and stakeholders on the subject. In May 1981, the International Code of Marketing of Breast-milk Substitutes was approved with the primary objective of contributing to the provision of safe and adequate nutrition to infants, supporting the protection and promotion of breastfeeding and ensuring the

appropriate use of substitutes [2]. In 1990, UNICEF published the Innocenti Declaration, which defined not only an international agenda of actions, but also goals to be achieved in order to promote breastfeeding [3]. In 1991, WHO and UNICEF adopted a new initiative, the Baby-Friendly Hospital Initiative (BFHI), a worldwide action that, in addition to implementing the Innocenti Declaration, established the "Ten Steps to Successful Breastfeeding", with the intention of promoting, protecting and supporting the practice of breastfeeding, in order to reduce early weaning and its consequences on infant morbidity and mortality [4].

In Brazil, the BFHI began in March 1992 with the action of the Programa Nacional de Incentivo ao Aleitamento Materno (PNIAM) and the Child Health Defense Group, directly supported by UNICEF and the Pan American Health Organization (PAHO) [5]. In 1992, the World Alliance for Breastfeeding Action (WABA), a

non-governmental organization, started the World Breastfeeding Week (WBW), celebrated from 01 to 07 August, covering in the first edition around 70 countries and currently more than 150 (including Brazil), being considered as a vehicle for promoting breastfeeding [6]. In 2020, WBW has as its theme "Support breastfeeding for a healthy planet", in order to demonstrate that, both in normal times and in emergencies, breastfeeding is an important investment to save children's lives and improve health, as well as in emergencies and for the social and economic development of individuals and nations [7]. In view of the above, the objective of this article is to quantitatively analyze the speeches constructed by Twitter users in Brazil, during the Breastfeeding Week 2020.

METHODOLOGY

This is an observational, quantitative, continuous time series study whose population consisted of all tweets, written in Portuguese, published in the national territory, which cited the expression "aleitamento materno", which means breastfeeding, published during the Breastfeeding Week Maternal, which covers the days of August 01 to 07. Therefore, tweets published from 00:01h on August 1st, 2020 until 23:59h on August 7th of the same year were selected [8]. Data collection was performed using the Anaconda3 command prompt to download the Optimized-Modified-GetOldTweets3-OMGOT and pyquery libraries. They capture tweets through the scroll bar. Subsequently, the Python 3.8 language was used to create a specific code that selected the day, time and text of the tweet, excluding the user's name, retweets, videos and images, to avoid compromising the analysis. The data were extracted to a spreadsheet in the Microsoft Excel® program, where a single corpus was built to be submitted to analysis using the R 3.6.1 software.

Originally, the corpus was composed of 1024 tweets, composed of 29933 words. The information collected was computationally processed using the R software (version 3.6.1). In order to arrive at the analyzed corpus, several procedures were applied to the text, namely:

(1)   all accents and cedilla (very common in Portuguese language) were removed;

(2)   all lowercase letters were standardized;

(3)   all spelling punctuation were excluded;

(4)   all numbers were removed;

(5)   all url-type addresses were removed; and

(6)   the connectors and articles were removed.

After this treatment, the new corpus to be analyzed now has 3877 words. Using the corpus resulting from treatments (1) to (6), the words were counted and ordered in descending order. From this information, a cloud of referring words was constructed considering the 100 most frequent words. Subsequently, Ward's method was applied to obtain hierarchical clusters, again considering the 100 most frequent words.

RESULTS AND DISCUSSION

Analyzing the twenty most mentioned phrases in the tweets published during Breastfeeding Week 2020 (Figure 1), it appears that the most frequent phrase was "leitamento materno por um planeta saudavel", that means "breastfeeding for a healthy planet", mentioned 32 times, which is complemented with the second most mentioned phrase: "apoie o aleitamento materno por um planeta", that means "support breastfeeding for a planet", mentioned 26 times. The expression refers to the slogan of the campaign in favor of breastfeeding for the year 2020. Highlighting the link between breastfeeding and the environment, this slogan is based on the 2030 Agenda for Sustainable Development, an action plan that establishes 17 goals to be worked on by the member countries of the United Nations, in favor of the sustainable development of the planet [9]. The second most mentioned phrase is the expression "aleitamento materno evita infeccoes e alergias" (16 mentions), that means "breastfeeding prevents infections and allergies". This sentence is corroborated by the guidelines of the Ministry of Health of Brazil, regarding the fact that, through breastfeeding, babies receive antibodies from the mother that help them to protect against diseases, such as diarrhea and infections, especially respiratory ones. It should also be noted that the risk of asthma, diabetes, allergies and obesity is lower in breastfed children, in addition to the fact that breastfeeding is characterized as an excellent exercise for the development of the child's face, speech development and good breathing [10] (Table 1).
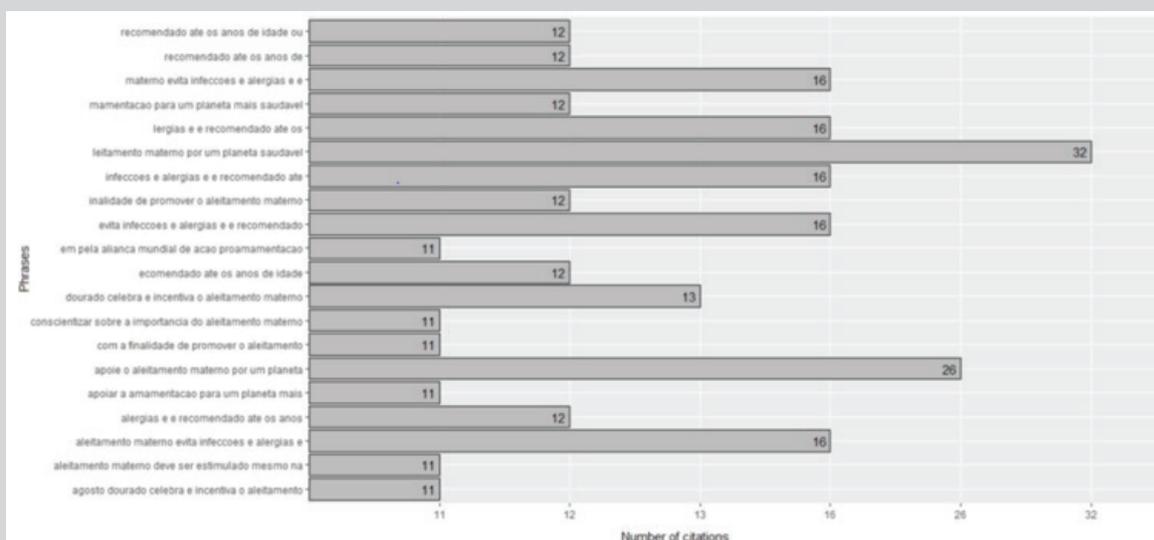

Figure 1: 20 most cited phrases in analyzed tweets, World Breastfeeding Week, 2020.

Table 1: 20 most cited phrases in analyzed tweets, World Breastfeeding Week, 2020.

Phrase	Count
Recommended up to the age of or	12
Recommended up to the age	12
Maternal prevents infections and allergies and	16
Breastfeeding for a healthier planet	12
Allergies and is recommended up to	16
Breastfeeding for a healthy planet	32
Infections and allergies and are recommended until	16
Purpose of promoting breastfeeding	12
Prevents infections and allergies and is recommended	16
For the pre-feed world alliance	11
Recommended up to age	12
Golden brain and encourages breastfeeding	13
Raising awareness of the importance of breastfeeding	11
In order to promote breastfeeding	11
Support breastfeeding for a planet	26
Supporting breastfeeding for a brighter planet	11
Allergies and is recommended up to the years	12
Breastfeeding prevents infections and allergies and	16
Breastfeeding should be encouraged even in	11
Golden August celebrates and encourages breastfeeding	11

Another important expression for the characterization of tweets, which is among the most mentioned, concerns the "em pela alianca mundial de acao proamamentacao", that means "for the global alliance for breastfeeding action", that comes from the publication of journalistic news published from the 1st of August, which bring in their text that this was the day established by the World Alliance for Breastfeeding Action (WABA), in 1992, as being the World Breastfeeding Day, created with the aim of promoting breastfeeding, as well as the creation of milk banks, which could improve the quality of life for children in the more than 120 countries where the date is celebrated [11].

Such phrases are ratified through the Word Cloud, which expresses the words that appear most frequently. Of course the search term "aleitamento materno", that means breastfeeding, appears as the most cited expression and is directly associated with expressions such as "agosto dourado" ("golden august"), "amamentação" ("breast-feeding"), "conscientizar" ("aware"), "planeta saudável" ("healthy planet"), "benefícios" ("benefits"), besides others (Figure 2).

Figure 2: Cloud of most cited words in analyzed tweets, World Breastfeeding Week, 2020.

In Figure 3, the dendrogram can be observed, which aims to divide the most mentioned words into classes. Note that we have the occurrence of three major classes of words, which were named: (1)

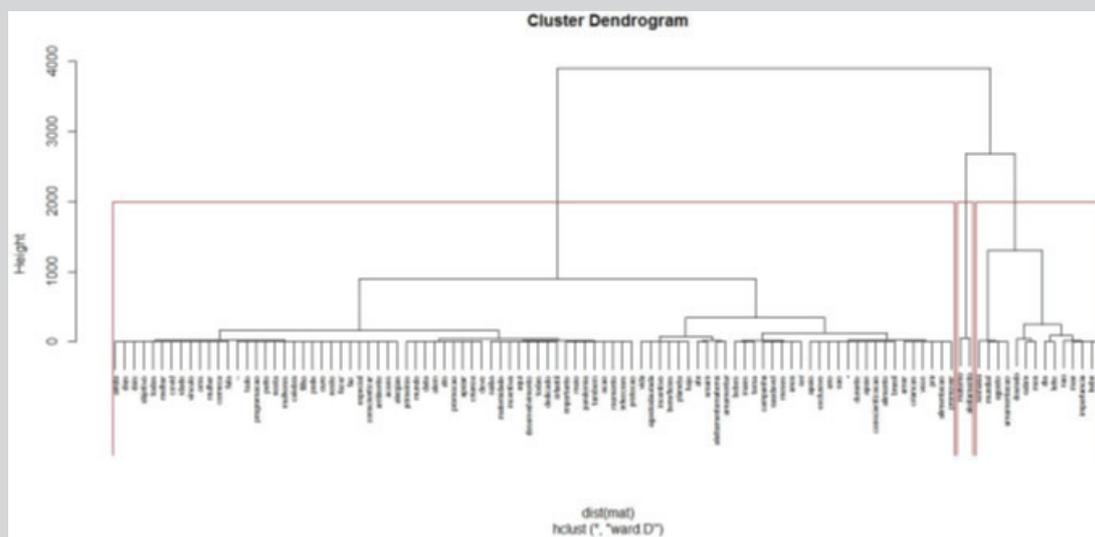Benefits of breastfeeding; (2) World Breastfeeding Day; (3) Baby health.

Figure 3: Dendograma apresentando as classes de palavras formadas pelos tweets analisados, Semana Mundial do Aleitamento Materno, 2020.

Class (1): Benefits of Breastfeeding

The first major class presented by the word dendrogram is subdivided into 4 subclasses, the first being related to the WHO recommendations for breastfeeding in times of COVID-19 and the importance of raising awareness of this theme, covering words such as: "objetivo" (objective), "covid", "consciência" (awareness) and "alergia" (allergy).

A esse respeito, Given the context of the pandemic marked by the SARS-CoV-2 coronavirus (COVID-19), the Ministry of Health of Brazil launched on March 19, 2020, a technical note with guidelines to be adopted by the Unified Health System (UHS) for breastfeeding in possible situations of transmission of flu syndromes [12]. The note considers the WHO recommendation regarding the maintenance of breastfeeding because there is no evidence (to date) of the transmission of COVID-19 through breast milk [13,14]. However, it suggests precautions that should be taken in cases where the mother is infected, maintains the desire to continue breastfeeding and presents favorable clinical conditions for this. Precautions serve to prevent transmission of the virus through respiratory droplets during contact with the child. Namely: Wash your hands for 20 seconds before contacting the baby or expressing milk; wearing a face mask completely covering the mouth and nose and avoiding talking or coughing during the breastfeeding process; and, finally, change the mask in case of coughing or sneezing or with each new feeding.

The second subclass has as its main theme the importance of exclusive breastfeeding for the child's development and protection against infections in times of pandemic, expressed by words such as: "pandemia" (pandemic), "dedicação" (dedication) and "infecções" (infections). According to the WHO, breastfeeding in the first years of life could save more than 820,000 children under five in the world [15]. In this context, the Pan American Health Organization (PAHO/WHO) recommends initiating breastfeeding within the first 60 minutes of life, as well as exclusive breastfeeding up to six months of age and complementary breastfeeding up to two years of age. In

addition, studies consider that, when initiated in the first hour of life, breastfeeding protects newborns from infections; improves IQ and strengthens school preparation; in addition to being associated with reduced risk of breast cancer in mothers [16-19].

The third subclass highlights the benefits of breastfeeding for the planet, referring to the theme of this year's "Agosto Dourado" (Golden August), involving words such as: "agosto dourado" (golden august), "benefícios" (benefits) and "planeta" (planet). In the meantime, this year's Golden August Campaign had as its theme: Support Breastfeeding for a Healthy Planet. Discussing the impact of infant feeding on the environment and climate change, based on the importance of protecting, supporting and promoting breastfeeding for the health of the planet and everyone [20]. The theme is aligned with the third thematic area of the Sustainable Development-SDG 2030, which seeks to formulate campaigns around the United Nations Sustainable Development Goals (SDGs), highlighting the relationship between breastfeeding, the environment and change climate [21].

Finally, the fourth subclass presented refers to the strengthening of the mother-baby relationship promoted by breastfeeding. The same can be corroborated through the highlighted words: "alimento" (food), "amor" (love), "você" (you), "crianças" (children), "promover" (promote).

There is evidence that breastfeeding helps to strengthen the relationship between babies and their mothers [22]. At birth, the baby does not yet have the autonomy to survive alone and meet its own needs, becoming dependent on a caregiver who provides the necessary resources for its survival, such as nutrition, hygiene and emotional support [23].

Babies have innate and instinctive neuropsychological structures that, enacted through the memorial function, provide an affective relationship and the direction of communication with their caregiver, in order to, among other things, feel protected and safe [24]. In this regard, Silva et al. [22] carried out an integrative review in which they proposed as factors that help to strengthen

the mother-baby relationship: the first contact between mother and baby, and breastfeeding, the bond that is built in the relationship and the setting in motherhood.

Class (2): World Breastfeeding Day

The second class presented by the dendrogram is composed of the words "materno" (maternal) and "aleitamento" (breastfeeding), representing the key concept of discussion proposed by Golden August, considered the month to encourage breastfeeding [10]. It has a strong relationship with the third class of words, related to the benefits that breastfeeding provides for the baby's health.

Class (3): Baby's Health

The last class of words organized by the dendrogram has as its theme the importance of breast milk for the health of the baby. It is represented by the words: "leite" (milk), "mãe" (mother), "importância" (importance), "bebê" (baby) and "saúde" (health). This is a theme that summarizes the ideal of the construction of the aforementioned campaign. There is evidence that exclusive breastfeeding for six months postpartum is associated with reduced pacifier sucking in children [25]. Regarding oral health, breastfeeding was also associated with the prevalence of posterior crossbite, absence of maxillary space in the primary dentition, and a lower propensity to develop an open bite [26].

Mathias et al. [27] analyzed a prospective cohort study aimed at assessing the risk of food allergy symptoms in children. The results showed that children exposed to mixed feeding had a higher risk of developing food allergy symptoms when compared to children who were exclusively breastfed for three months, suggesting that the introduction of multiple food sources can lead to food allergy symptoms. In addition, a prospective cohort study showed that pre-lactating and early formula feeding in infants before hospital discharge are associated with higher risks of infection and hospital admission when compared to children who were exclusively breastfed [28].

CONCLUSION

Numerous initiatives, in the form of policies and programs, have encouraged an increase in the practice of exclusive breastfeeding in the first months of life. In this context, the World Breastfeeding Week appears, which in 2020 propagated the idea that infant feeding is capable of impacting the environment. The findings of the present research indicate, from the analyzed content, that the users of the social network in Brazil listed uttered terms and speeches in line with the proposal of the thematic week, since their publications contemplated the benefits of breastfeeding for the childrens and the planet, permeating the pandemic context. Breastfeeding is a sustainable, ecological practice that has the potential for the development of a healthier society that is less impacted by the production, packaging, distribution and preparation of processed foods. Breast milk provides all the nutrients necessary for the good development of the infant, including components that prevent the occurrence of infections and infant mortality. In this context, it is recommended that breastfeeding should be started in the delivery room in the first hour of life, occurring exclusively in the first six months of life, that is, without adding any type of solid/semi-solid food. After this period, adequate complementary feeding can be introduced, also maintaining breastfeeding for two years or more. Finally, we emphasize the need for studies to verify the effects of the World Breastfeeding Week regarding the practice of breastfeeding and the recognition of breast milk as a natural, renewable and environmentally safe resource.

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