



Be Sweet to Babies: evaluation of an instructional video on neonatal pain management by nurses

Seja Doce com os Bebês: avaliação de vídeo instrucional sobre manejo da dor neonatal por enfermeiros

Sé Dulce con los Bebés: evaluación de video instruccional acerca del manejo del dolor neonatal por enfermeros

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ABSTRACT

Objective: To describe the profile of nurses who work in hospital units that care for newborns; to verify nurses' prior knowledge on breastfeeding, skin-to-skin care and sweet tasting solutions for neonatal procedural pain relief; and to evaluate nurses' perceptions on the feasibility, acceptability and usefulness of the Portuguese version of the "Be Sweet to Babies" video. **Method:** A cross-sectional study conducted in four units of a university affiliated hospital in São Paulo. Forty-five (45) nurses who answered the questionnaire and watched the video were included. Thirty-eight (38) nurses subsequently evaluated the video. Descriptive statistics were used to analyze the variables, in addition to content analysis of the open question. **Results:** Forty-five (45) nurses participated in the study; 97.4% were aware of the analgesic strategies, and after watching the video nurses reported that they intend to use or encourage the use of these strategies during painful procedures. All participants would recommend the video to other professionals, and considered the resource as useful, easy to understand and easy to apply in real situations. **Conclusion:** Nurses are aware of the analgesic strategies and they considered the video as a feasible, acceptable and useful tool for knowledge translation to health care providers, which can also favor parental involvement in their children's pain management.

DESCRIPTORS

Pain; Infant, Newborn; Neonatal Nursing; Education, Nursing; Evidence-Based Nursing; Audiovisual Resources.

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INTRODUCTION

Due to the lack of knowledge about the mechanisms related to treating neonatal pain, for many years it was believed that newborns (NB) were unable to feel pain. In addition, concerns related to adverse drug effects also restricted the use of analgesics during painful procedures performed in this population. However, since the 1990's, advances in research on the physiology of pain and its short- and long-term effects, combined with the development of equipment for monitoring, imaging studies and protocols for drug safety have highlighted the importance of appropriate neonatal pain management⁽¹⁻³⁾.

Recently, systematic reviews have shown the effectiveness of analgesic measures such as breastfeeding⁽⁴⁾, skin-to-skin care (SSC)⁽⁵⁾, and sweet tasting solutions such as sucrose⁽⁶⁾ and glucose⁽⁷⁾ for preventing and reducing procedural pain in newborns. In addition to being safe, low-cost, safe, easily applicable and widely available, they allow for greater autonomy by nursing professionals and for parental participation in care⁽⁸⁾.

Nevertheless, studies indicate that procedural pain management remains inadequate among newborn care services in Brazil⁽⁹⁾ and worldwide⁽⁹⁻¹⁰⁾. Thus, there is a need to develop and evaluate the impact of knowledge translation (KT) strategies which synthesize and adapt the evidence on neonatal pain management for parents and professionals in different contexts of neonatal care⁽⁸⁻¹¹⁾.

In order to strengthen the link between scientific production and its implementation in clinical practice, KT is conceptualized as: "a dynamic and interactive process that includes synthesis, dissemination, exchange and ethical application of knowledge to improve the health of the population, provide more effective health services and products and strengthen the health care system"⁽¹²⁾.

"KT implementation in Brazil is both a necessity and a challenge", in which the lack of knowledge and familiarity with this concept represents the first barrier, followed by a lack of partnerships between researchers, institutions and the population, as well as the scarcity of financial resources⁽¹³⁾.

Studies on the use of KT in neonatal pain management are still scarce in Brazil. However, recent studies have sought to overcome these barriers with regard to KT to nursing professionals and students. Some examples include the development of an online course named "*Programa de Avaliação da Dor Neonatal*" (Neonatal Pain Assessment Program)⁽¹⁴⁾, as well KT strategies targeted at parents addressed in studies that evaluated videos available online on neonatal pain management⁽¹⁵⁻¹⁶⁾.

Regarding the use of videos as a KT strategy, the "Be Sweet to Babies" instructional video was developed to promote the use of analgesic measures such as breastfeeding, SSC and sweet tasting solutions during neonatal painful procedures. The video is an evidence-based KT strategic resource built on effective interventions for neonatal pain relief⁽⁴⁻⁷⁾. In addition, it has easy-to-understand language and shows real scenes of newborns undergoing painful blood sampling while receiving analgesic measures⁽¹⁷⁾.

The video was originally produced by researchers at the University of Ottawa and The Children's Hospital of Eastern Ontario (CHEO) in English and French. Its Portuguese version was firstly recorded and released online in 2014, and was updated in January 2016 (<https://youtu.be/ZGLSNdYtppo>). All versions of the video are linked to the CHEO's channel on the YouTube platform⁽¹⁷⁾. Although this audiovisual aid is target at parents, it also represents a potential KT tool for nurses, since parental involvement in neonatal care is only possible with the support, knowledge and collaboration of both parties. Moreover, low costs related to the video implementation as it is freely available online enable easy access for the entire community of parents, health professionals, students and researchers.

In previous studies, parents of infants hospitalized in neonatal units^(16,18) and health professionals who watched the video on YouTube⁽¹⁷⁾ considered it useful, easy to understand and easy to apply in real situations. Nevertheless, the perception of nursing professionals working in Brazilian health services is still unknown, thus justifying the present study that aims: to describe the profile of nurses who work in hospital units that care for newborns; to verify nurses' prior knowledge on breastfeeding, skin-to-skin care and sweet tasting solutions for neonatal procedural pain relief; and to evaluate nurses' perceptions on the feasibility, acceptability and usefulness of the Portuguese version of the "Be Sweet to Babies" video.

METHOD

This is a cross-sectional study carried out in four units that provide care to newborns in a secondary level university affiliated hospital in the city of São Paulo – SP, Brazil. The study was conducted in 2016 upon the approval of the research ethics committees of the respective hospital and the university to which this hospital is linked, and in accordance with resolution 466/2012⁽¹⁹⁾ (protocols: 1.464.696 and 1.501.564).

Participating units included: 1) obstetrical center (*CO – centro obstétrico*) is composed of eight pre-delivery beds and four delivery rooms; 2) rooming-in unit (*AC – alojamento conjunto*) is composed of 36 beds for mothers and their newborns; 3) the intermediate care unit (*UCIN – Unidade de Cuidados Intermediários*) is composed of 16 beds; and 4) the neonatal intensive care unit (*UTIN – Unidade de Terapia Intensiva Neonatal*) consists of six beds. None of the units involved in the study had a neonatal pain management protocol at the time of data collection for this study.

All nurses working in these units were considered eligible and included in the study. Exclusion criteria were: being on vacation or on a leave of absence of any nature during the study period.

Data collection was performed between August and September 2016. Nurses were invited to participate in the study during their working hours and they signed the Informed Consent Form after the research objectives and data collection procedures were explained to them.

In a private room, the participants responded to the demographic, academic and professional characterization

questionnaire, which required approximately 5 minutes to be completed. Then they watched the Portuguese version of the “Be Sweet to Babies” video (<https://youtu.be/ZGLSNdYtpo>), which is approximately 6 minutes long. The video is available on the YouTube platform, and was shown on a laptop computer with internet access. The video was displayed either individually or for groups of two to three nurses, according to the participants’ preference and availability. The nurses were subsequently asked to individually answer a second questionnaire on their previous knowledge on the use of breastfeeding, SSC and sweet tasting solutions for the relief of neonatal procedural pain, and also to their perception regarding the feasibility, acceptability and usefulness of the instructional video. This instrument, composed of six closed questions and one open question, was adapted from previous studies^(16,18), and required a response time of approximately 10 minutes. Total time for participation on this study was approximately 21 minutes per nurse.

Data were stored in spreadsheets in the Microsoft Excel® 2011 program, processed and analyzed using the IBM SPSS Statistics® statistical package, version 20.0. Descriptive statistics were used to analyze the variables, in addition to the content analysis used for the comments on the open final question. The subjects’ identities were coded according to the abbreviation of the professional category (NUR), the sequence number of inclusion in the study, and the work unit abbreviation (CO, AC, UCIN or UTIN).

RESULTS

Forty-five (45) nurses participated in the study, 44 (97.8%) women and 1 (2.2%) man, of which 13 (28.9%) worked in the UTIN, nine (20.0%) in the UCIN, 11 (24.4%) in the AC, and 12 (26.7%) in the CO. Participants’ mean age was 43 years old, ranging from 27 to 60 years of age. In relation to academic training, most professionals (32, 74.4%) completed a specialization degree followed by a Master’s degree (9, 20.9%) and a Doctoral degree (2, 4.7%). The average experience time in nursing, in the maternal-infant area and in the current work unit were 18, 17 and 15 years, respectively.

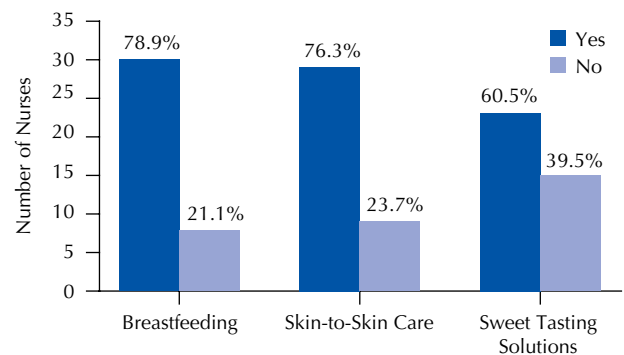
The “Be Sweet to Babies” video was displayed to all participants. However, only 38 responded to the proposed questionnaire, since three nurses working in the UTIN, three in the CO and one in the UCIN claimed to not have enough time. In addition, the interval between displaying the video and applying the questionnaire varied between participants. While most professionals promptly responded the questionnaires, some postponed their response within 1 month of watching the video, which was due to their work routine and complications at the moment of data collection, mainly in units such as UTIN and CO.

Considering the instructional video is available online, and that it has been used by the scientific community, it had already been seen by ten professionals (26.3%): 4 (10.5%) had watched it on YouTube, 4 (10.5%) during their university course, and 2 (5.3%) at scientific conferences.

Regarding nurses’ previous knowledge about the analgesic measures presented in the video, 37 (97.4%) participants

stated they knew about breastfeeding and sweet tasting solutions as effective measures to reduce neonatal pain. SSC was reported as being known by 31 professionals (81.5%).

After watching the video, most nurses (37, 97.4%) reported they intended to use or felt encouraged to use one or more strategies during neonatal painful procedures (Figure 1).



Source: Elaborated by the authors.

Figure 1 – Intention to use analgesic strategies during painful procedures performed on newborns – São Paulo, SP, Brazil, 2016.

However, regarding the nurses’ intention to use sweet tasting solutions and despite all the nurses working in the UTIN, UCIN and CO units reported that they would use sucrose or glucose solutions in the future, the majority of AC professionals (6, 54.5%) had no intention of using them.

All nurses declared they would recommend the video to other health professionals. The video was considered useful, easy to understand and easy to apply in real-life situations by all nurses. The duration of the video was also considered ideal, except for one participant (2.6%), who considered it too long.

In additional comments, 12 (31.6%) nurses reported that they had already used the presented analgesic measures. Ten (26.3%) participants affirmed that they started using the strategies after watching the video, as explained in the following speech:

After watching the video I was encouraged to use these methods in the practice. I have used and I see results and satisfaction from parents and babies (NUR19-AC).

Regarding the advantages and benefits of the implementation of the video as a knowledge translation tool, as well as on the implementation of the analgesic strategies, nurses’ comments included: use of real scenes (9, 23.7%); procedures becoming easier to perform (9, 23.7%); relief of neonatal pain, reducing agitation and enhancing comfort (8, 21.0%); facilitation of family bonding and humanized care (3, 7.9%); availability of breastfeeding and SSC, as well as the low cost of sweet tasting solutions (4, 10.5%).

On the other hand, 6 (15.8%) professionals reported technical inability, work overload, clinical routine of

hospital units, unfavorable clinical condition of newborns, as well as the absence or emotional unpreparedness of the parents during the painful procedures constitute barriers to the use of the presented analgesic strategies. In addition, 4 (10.5%) nurses argued that the use of glucose or sucrose would be contraindicated, since the service is part of the Baby-Friendly Initiative (BFI – in Portuguese: *Iniciativa Hospital Amigo da Criança*). Finally, no disadvantages were specifically associated to the “Be Sweet to Babies” video.

DISCUSSION

Most of the nurses included in this study were unaware of the “Be Sweet to Babies” video, although its Portuguese version has been available online for approximately three years. However, most professionals reported having prior knowledge about the effectiveness of breastfeeding, SSC and sweet tasting solutions as strategies for neonatal procedural pain relief. These results are in agreement with an online survey that aimed to verify the knowledge and perception of parents and health professionals about the English version of the “Be Sweet to Babies” video⁽¹⁷⁾. In addition, the results resemble with national descriptive studies conducted in neonatal units, which demonstrated the knowledge of nursing professionals on the use of pharmacological and non-pharmacological measures in neonatal pain management⁽²⁰⁻²²⁾.

With regard to the analgesic strategies addressed in the “Be Sweet to Babies” video, breastfeeding has analgesic effects when started approximately 5 minutes prior, and maintained during and after a single painful procedure, such as heel lancing, peripheral venipuncture, and immunizations⁽⁴⁾.

SSC consists of vertically positioning the neonate wearing only a diaper against the bare chest of the mother or a family member. It has analgesic effects when started about 15 to 30 minutes prior to the painful procedures, and is maintained during and after its termination. Systematic reviews show that SSC is effective in reducing neonatal pain during single and non-urgent procedures, especially in preterm infants⁽⁵⁾.

In the impossibility of providing breastfeeding or SSC, small amounts of sweet tasting solutions such as 0.5 to 2 mL of 24% sucrose or 1 to 2 mL of 20-30% glucose⁽⁶⁻⁷⁾ can be offered directly on the newborns’ tongue before, during and after painful procedures. Such solutions are effective in reducing the pain of neonates, mainly for heel lancing or venipuncture. Both solutions are recommended by a national protocol⁽²³⁾.

Nevertheless, in spite of the availability of high quality evidence regarding these analgesic strategies, neonatal pain management remains inadequate in health services. National studies demonstrate that breastfeeding, SSC and sweet tasting solutions are still underused during painful procedures⁽²⁰⁻²¹⁾, which has also been reported in the international scenario⁽⁹⁻¹⁰⁾.

In order to overcome the gap between the scientific knowledge available and its application in clinical practice⁽⁸⁾,

it is necessary to create and implement KT strategies that raise awareness and educate health professionals for the adequate control of neonatal pain, making these professionals active and key-players of changing practices⁽²⁰⁻²¹⁾.

The age range of the nurses included in this study (between 27 and 60 years) is consistent with the vast majority of the nursing workforce that encompasses three generations: ‘Baby Boomers’ (born between 1947 and 1964); the ‘X’ generation (born between 1965 and 1980); and the ‘Y’ generation or ‘Millennials’ (born between 1980 and 2001). Since each generation apparently has distinct characteristics related to how they work and acquire knowledge, it is imperative to complement traditional teaching methods with KT strategies that consider the preference of newer generations for implementing teaching technologies⁽²⁴⁾. In this context, the use of objective instructional evidence-based videos and available online could foster the interaction, engagement and promotion of cognitive and affective learning for the new generations of nurses⁽²⁵⁻²⁶⁾, in addition to guiding the decision-making of these professionals and improve the quality of care⁽²⁶⁾.

A review study which analyzed the content of 25 instructional videos available on the YouTube platform on pediatric procedural pain management concluded that most of the videos were current, relevant, and created by a trusted source, which corroborates the importance of using these audiovisual resources for KT, not only for the health team, but also for parents and other caregivers⁽²⁷⁾.

Divergent results were evidenced in a review study that included 68 videos in Portuguese also available on the YouTube platform, in which newborns underwent blood sampling through venipuncture or heel lancing. The authors concluded that most of the painful procedures were performed without any analgesia, with breastfeeding and swaddling being used in only 3% and 1.5% of the cases, respectively⁽¹⁵⁾. These results also reinforce the importance of using quality instructional videos developed by safe sources and in partnership with professionals, parents and researchers for KT of neonatal pain management.

This is the case with the “Be Sweet to Babies” video, evaluated by the nurses of the present study as being useful, easy to understand and easy to apply in real life situations. In addition, the video encouraged the professionals to consider breastfeeding, SSC and sweet tasting solutions as analgesic strategies to be implemented in their professional practice in the future. The same was also evidenced in an online survey of 187 YouTube users, mostly health professionals whose opinions regarding the English version of the “Be Sweet to Babies” video (<https://youtu.be/L43y0H6XEh4>) were also positive⁽¹⁷⁾.

However, considering the availability of this instructional video on the online platform, it is still scarcely viewed by parents and professionals. Over a period of 15 months, the Portuguese version (updated in 2016) only reached 9,168 views and 68 likes on YouTube, and its English version had 10,879 views and 31 likes in a 12-month period⁽¹⁷⁾.

On the other hand, the “Be Sweet to Babies During Immunization” video on the use of breastfeeding and sweet tasting solutions during immunizations of infants and produced by the same group of Canadian researchers was viewed 65,478 times, and received 245 likes in a 12-month period⁽²⁸⁾. Even more expressive visibility was reported in relation to the “The Power of a Parent’s Touch” video (<https://youtu.be/3nqN9c3FWn8>), also developed by Canadians, with subtitles available in eight languages including Portuguese, and whose accessibility reached 157,938 parents and professionals from 154 countries⁽²⁹⁾. This demonstrates the need for wide dissemination and insertion of the “Be Sweet to Babies” video in all its versions in the different scenarios of neonatal attention to better explore its potential as a KT tool in Brazil and around the world.

Regarding the advantages and benefits mentioned by the participants on the use of the video and the presented analgesic strategies, similar results were evidenced in a study that evaluated the usefulness and effectiveness of an instructional pamphlet and video aimed at nurses on the use of topical anesthetic, sweet tasting solutions, breastfeeding, skin-to-skin care and distraction (among other measures) for the control of pain in infants during immunizations. The video and pamphlet were considered useful and effective, since there was acquisition of significant knowledge as well as greater awareness of professionals and desire to provide parents empowerment and involvement in the care. Some nurses also considered the video better than the pamphlet and enough for KT⁽¹¹⁾.

The results of the present study reinforce the potential of using the video “Be Sweet to Babies” for KT to nurses and parents, provided there is minimal infrastructure for its display in hospital units such as the availability of a television, computer or other portable electronic device. It should be emphasized that the video is free, brief and free-to-access for any institution, in addition to being available online for the entire community of parents, health professionals, students and researchers, which favors its dissemination and application in the future in the Brazilian and international scenario.

Regarding potential barriers to the implementation of breastfeeding, SSC and sweet tasting solutions, other studies have also identified factors related to newborns, parents, health professionals and organizations such as: clinical condition and unfavorable feeding patterns; lack of knowledge; anxiety; stress and absence of parents during painful procedures; technical inability and attitude of nurses; unfavorable environment; work overload; insufficient continuing education; and the institution’s culture⁽¹⁰⁻¹¹⁾.

Moreover, nurses tend to compare information provided by instructional videos with the policies and practices of their institutions⁽¹¹⁾, as shown in the present study by some professionals who contraindicated the use of glucose or sucrose solutions due to BFI. This argument may be related to steps six and nine, established for the success of breastfeeding which go against offering any drink or food other than breast milk, and also offering artificial teats

or pacifiers⁽³⁰⁾. However, sweet tasting solutions are not considered substitutes for food, they are offered in small amounts, and present analgesic effects even when not associated with non-nutritive sucking⁽⁶⁻⁷⁾. It is emphasized that sweet tasting solutions are effective, safe, inexpensive and easy to use alternatives during painful procedures and that their use should be considered only in the impossibility of breastfeeding and SSC⁽⁸⁾, as explained at 3 minutes and 44 seconds of the updated version of the “Be Sweet to Babies” video (<https://youtu.be/ZGLSNdYtppo>): *If you cannot breastfeed during the procedure, and if it is not possible to position the baby for skin-to-skin care, sweet tasting solutions such as sucrose and glucose associated or not to suction may be used. Suction has a calming effect on babies. For this reason, if you decide not to breastfeed, you can offer a pacifier during the procedure.*

Finally, it is critical that parents are educated, encouraged and involved in managing their children’s pain. Implementation of these analgesic measures during painful procedures not only depends on effective KT strategies, but also on collaboration between parents and professionals, on the creation of evidence-based and context-appropriate protocols, and on the support of the institutions that provide assistance to the NB.

As a limitation of the study, we can point out the loss of 7 participants and the variation in the questionnaire response time among the nurses, which may have influenced their responses, especially on the open question. Also, questioning prior knowledge about analgesic strategies was performed after the instructional video was presented, which may have altered the professionals’ responses.

CONCLUSION

Nurses are aware that breastfeeding, SSC and sweet tasting solutions are effective strategies for neonatal procedural pain relief. After watching the “Be Sweet to Babies” video, the vast majority of professionals stated they intend to use or encourage the use of the presented pain relief strategies, preferably breastfeeding, SSC and sweet tasting solutions, respectively. The video was rated by all participants as helpful, easy to understand, and easy to apply in real-life situations. As the recommendation of the video to other health professionals was also consensual among the nurses, it can be considered as an important KT tool which deserves to be better explored in neonatal care scenarios.

Although the “Be Sweet to Babies” video has been considered feasible, acceptable and useful for KT not only for parents but also for health professionals, future studies such as pragmatic clinical trials are recommended in order to assess the real impact of implementing instructional videos on the use of analgesic measures such as breastfeeding, SSC and sweet tasting solutions during painful procedures performed on newborns.

RESUMO

Objetivo: Descrever o perfil de enfermeiros atuantes em unidades que assistem o recém-nascido, verificar seu conhecimento prévio sobre amamentação, contato pele a pele e soluções adocicadas no alívio da dor procedural neonatal, e avaliar sua percepção sobre a viabilidade, a aceitabilidade e a utilidade do vídeo “Seja Doce com os Bebês”. **Método:** Estudo transversal, realizado em quatro unidades de um hospital universitário de São Paulo. Foram incluídos 45 enfermeiros, que responderam ao questionário de caracterização e assistiram ao vídeo. Posteriormente, 38 avaliaram o vídeo. Estatística descritiva foi utilizada para análise das variáveis, além da análise de conteúdo na questão aberta. **Resultados:** Participaram do estudo 45 enfermeiros. 97,4% conheciam as estratégias analgésicas e, após assistirem ao vídeo, afirmaram pretender utilizá-las ou incentivar seu uso durante procedimentos dolorosos. Todos recomendariam o vídeo para outros profissionais, sendo o recurso avaliado como útil, fácil de entender e de aplicar em situações reais. **Conclusão:** Os enfermeiros conhecem as estratégias analgésicas, consideram o vídeo viável, aceitável e útil como ferramenta de tradução do conhecimento para profissionais da saúde, o que também pode favorecer o envolvimento dos pais no manejo da dor de seus filhos.

DESCRITORES

Dor; Recém-Nascido; Enfermagem Neonatal; Educação em Enfermagem; Enfermagem Baseada em Evidências; Recursos Audiovisuais.

RESUMEN

Objetivo: Describir el perfil de enfermeros actuantes en unidades que asisten al recién nacido, verificar su conocimiento previo sobre la lactancia, contacto piel a piel y soluciones azucaradas en el alivio del dolor procedural neonatal, y evaluar su percepción sobre la factibilidad, la aceptabilidad y la utilidad del video “Sé Dulce con los Bebés”. **Método:** Estudio transversal, llevado a cabo en cuatro unidades de un hospital universitario de São Paulo. Fueron incluidos 45 enfermeros, quienes respondieron al cuestionario de caracterización y vieron el video. Posteriormente, 38 evaluaron el video. Estadística descriptiva fue utilizada para análisis de las variables, además del análisis de contenido en la cuestión abierta. **Resultados:** Participaron en el estudio 45 enfermeros. El 97% conocían las estrategias analgésicas y, luego de ver el video, afirmaron pretender utilizarlas o incentivar su uso durante procedimientos dolorosos. Todos les recomendarían el video a otros profesionales, siendo el recurso valorado como útil, fácil de comprender y de aplicar en situaciones reales. **Conclusión:** Los enfermeros conocen las estrategias analgésicas, consideran el video viable, aceptable y útil como herramienta de traducción del conocimiento para profesionales sanitarios, lo que también puede favorecer la involucración de los padres en el manejo del dolor de sus hijos.

DESCRIPTORES

Dolor; Recién Nacido; Enfermería Neonatal; Educación en Enfermería; Enfermería Basada en la Evidencia; Recursos Audiovisuales.

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