

# Geriatric forensics - Part 2 “Prevalence of elder abuse and their potential forensic markers among medical and dental patients”

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## Abstract

**Context:** This study is a continuation of the earlier studies and has been extended to investigate the potential forensic markers of elder abuse. **Aims:** To determine the prevalence of elder abuse in various outpatient departments (OPDs). To study the associated parameters related to the abuser and the abused. To determine the existence of potential forensic markers of elder abuse. **Settings and Design:** The subjects were randomly selected from the medical and the dental OPDs of the university. **Materials and Methods:** Eight hundred and thirty two elderly subjects in the age range 40-60 years were interviewed using a questionnaire to determine the existence of elder abuse. The subjects were investigated and examined for weight, nutrition and hydration, vital signs, habits, existing visual and auditory capabilities, medications, disclosure of wills/deeds, signs of depression, and documented cleanliness. The mini-mental state examination, the Geriatric Depression Scale, the Clock drawing test, and the Brief Psychiatric Rating Scale were used to determine the potential forensic markers. **Statistical Analysis Used:** Mean values in percentage were determined by dividing the number of determined subjects by the total number of subjects for that parameter. **Results:** About 37% in medical and 41% in dental OPDs were found to have suffered from abuse, mostly in the age group 60-70 years. Females received more abuse and a combination of son and daughter-in-law constituted most abusers. Various potential markers of elder abuse and neglect investigated among the elder abuse victims included depression (89%), signs of improper feeding (83%), changes in personal hygiene (69%), need for medical/dental treatment (78%), medication misuse (67%), changes in wills/deeds (26%), decubiti (10%), bruises (17%), skin tears (27%), and confusion (23%). **Conclusions:** Elder abuse exists in one or more forms in both medical and dental OPDs among both males and females in all age groups.

**Key words:** Deed, depression, neglect, personal hygiene, domestic violence

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## Introduction

While preparing a presentation on an earlier study for a national forensic conference, the authors of the present study came across incidents of extreme elder abuse in India reported in the electronic media over the past 5 years that inspired this study to be continued further. Extreme cases, where an elderly person was either

killed by his/her son or money was paid to contract killers to get a parent killed, have come to the limelight in the world of crime.<sup>[1-6]</sup> Whatever might be the case, the fact is that many elderly might be dying because their children might be depriving them of adequate nutrition, medical and general health care, or subjecting them to extreme physical abuse. Forensic science needs to encompass this subject comprehensively. Researchers who are associated with elder abuse and neglect believe that the state of medical knowledge and forensic science regarding elder abuse and neglect is approximately equivalent to that of child abuse and neglect three decades ago and domestic violence 10-15 years ago.<sup>[7]</sup> The difference has been that though children and young victims of domestic violence are generally healthy and are not expected to die, older people suffer from medical problems and are functionally dependant that makes them vulnerable and potential victims of stressors causing death. Medical conditions and aging bring attributes that mimic or mask the markers of elder abuse and neglect, which if critically scrutinized can simplify analysis and detection.

Developing countries like India not only lack primary data relating to forensic markers, but many of them are still in a mode of denial because of culture and traditions.<sup>[8]</sup> Nevertheless, the evidence is enough, which is apparent and striking but deceptive and blunt when refused. Elder abuse affects every social stratum and shows no regard for race, creed, or color. It is well documented that elder abuse has a direct influence on the quality of life of the person who is being abused. The mortality associated with elder abuse has been studied and it has been found that elder abuse victims have poorer survival rates than those of self-neglect.<sup>[9,10]</sup> Extreme cases of abuse, for example, gunshot wounds, knife wounds, burns, large decubiti, starvation, or bite marks are not diagnostic dilemmas; most cases fall into an area where abuse and neglect are not clear-cut as there are minute distinctions.<sup>[11]</sup> Resolution of these difficult distinctions, though, is beyond the scope of this study. However, whether elder abuse and neglect have occurred is a conclusion that is drawn from a constellation of factors, which are both medical and legal. The present study is a continuation of its first study and is aimed to determine the prevalence of elder abuse subjects in dental and medical hospital outpatient departments (OPDs), along with their parameters. More significantly, this study will also evaluate the presence or absence of various clinical and forensic markers in the subjects that indicate neglect.

## Materials and Methods

After obtaining ethical clearance from the Ethics Committee of the university, which is in accordance with the Declaration of Helsinki on human experimentation, informed consent was taken from the subjects. The study was conducted on 832 elderly subjects whose age ranged

40-80 years. About 512 subjects were interviewed in the medical OPD and 320 in the dental OPD of the university in the western part of the state of Uttar Pradesh (India). Subject selection was random and constituted diverse communities with 349 females, 480 males, and 3 subjects belonging to the other sex. Selection criteria required the subjects to be living with their existing family, seeking treatment in various specialties, to be cooperative for any protocol that was needed for the study, and not have any impairment of thinking, memory, functional ability, or decision-making capacity. The subjects were screened for diagnosis of elder abuse of one or more forms with the help of a questionnaire.<sup>[12]</sup> All the subjects were investigated and examined for weight, evaluation of nutrition and hydration, vital signs, habits, existing visual and auditory capabilities, medications including written prescriptions, disclosure of wills/deeds, general physical examination, including a detailed oral examination, signs of depression, documented cleanliness, and a detailed social history including that of the existing family members. Examination of each subject was done by experts in the field of medicine, surgery, psychiatry, ophthalmology, orthopedics, oral practice, oral pathology, prosthodontics, and physiotherapy. The methodology to determine the forensic markers included the mini-mental state examination (MMSE),<sup>[13]</sup> the Geriatric Depression Scale (GDS),<sup>[14,15]</sup> the Clock drawing test,<sup>[16,17]</sup> and the Brief Psychiatric Rating Scale (BPRS).<sup>[18]</sup> The MMSE or Folstein test was used to exclude subjects with cognitive impairment, especially cases of dementia, the GDS identified depression and its associated levels, the clock drawing test identified subjects who could be suffering from spatial neglect and the BPRS was used to measure psychiatric symptoms such as depression, anxiety, hallucinations and unusual social behavior. The data collected was entered into an SPSS (Statistical Package for Social sciences) (IBM version 20) and various properties of the variables were defined. Means for each variable were tabulated and represented in graphic form. Prevalence of elder abuse subjects was determined by calculating the number of abused and non-abused subjects from the total number of subjects surveyed. Abuse prevalence in relation to age and sex was determined by calculating the number of abused subjects of a particular age/sex group from the total number of subjects belonging to the same age group of the total sample. Potential forensic markers were determined by a combination of relevant clinical history, clinical examination, pertinent investigation, and laboratory/psychological tests.

## Results

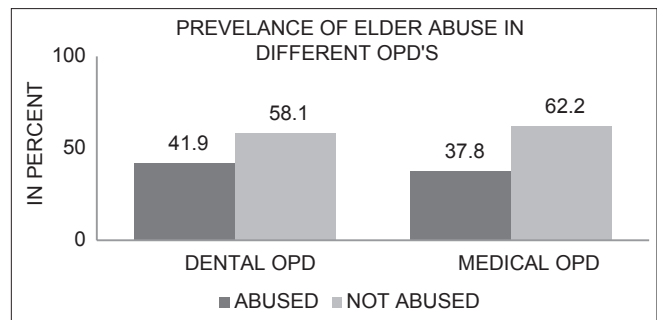
Among the total number of subjects included in the survey, 39.85% were suffering from some form of elder abuse. This constituted about 41.9% of abused subjects in the dental OPD and about 37.8% in the medical OPD [Graph 1]. Abuses in one form or the other were seen to be less

prevalent in the fourth and seventh decades of life, whereas they were most prevalent in the fifth decade [Graph 2]. Among the sexes, it was observed that the male subjects were affected in all ages with the exception between 60 years and 70 years during which time the females received more abuse [Graph 3].

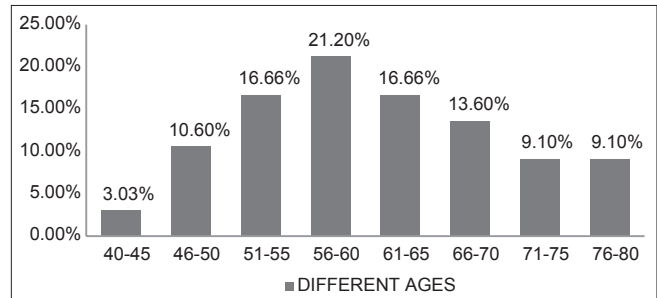
Among the different types of elder abuse, the combination type of more than one abuse was more prevalent (38.9% of dental patients and 13.6% of medical patients), followed by psychological abuse (29.3% of dental patients and 27.4% of medical patients) and neglect (20.3% of dental patients and 24.1% of medical patients) [Graph 4]. Within the various combination types, results showed that the psychological type of abuse was more prevalent than any individual type. Psychological abuse was present in more than 74% of dental OPD and 86% of medical OPD subjects. About 25% of dental patients and 23% of medical patients were found to suffer from more than two types of abuse [Graph 5]. The relationship between the different types of abuse and the abuser as depicted in Graph 6 shows that physical abuse, neglect, and financial abuse were committed mostly by sons, whereas psychological abuse mostly by daughters-in-law. Abuse by spouse was also prevalent, especially in females. Those subjects who were suffering from more than one abuse (combined) were also mostly done so by a combination of the son and the daughter-in-law (54.54% of dental patients and 48.12% of medical patients) [Graph 7]. Various potential markers of elder abuse and neglect investigated among the elder abuse victims included depression (89%), signs of improper feeding (83%), changes in personal hygiene (69%), need for medical/dental treatment (78%), medication misuse (67%), changes in wills/deeds (26%), decubiti (10%), bruises (17%), skin tears (27%), and confusion (23%) [Graph 8].

## Discussion

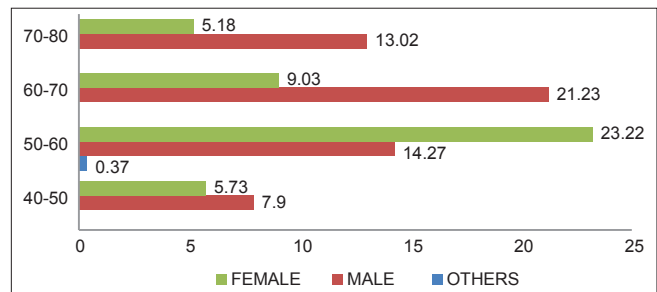
Older people not only constitute the fastest growing segment of the population but also the largest consumers of health-care facilities.<sup>[19]</sup> Projections suggest that by 2025, the elderly will constitute 12-13%,<sup>[19]</sup> which by 2050 will further rise to 17% of the entire population.<sup>[20]</sup> Although it has been said that an issue like elder abuse is not a problem for countries like India because a value-based joint family system prevails, studies done in various parts of India reveal a different picture [Graph 9].<sup>[21-27]</sup> Worldwide, it is evident that elder abuse is on the rise and it may be due to many factors that need to be understood to find solutions. The present study shows that patients visiting hospitals for either medical or dental treatment do suffer from some type of abuse and it may affect the patient's compliance with any treatment. Majority of the abused subjects were found in the age group 50-60 years, especially females (23%), with a combination type of elder abuse being the most



Graph 1: Distribution of elder abuse subjects in various OPD



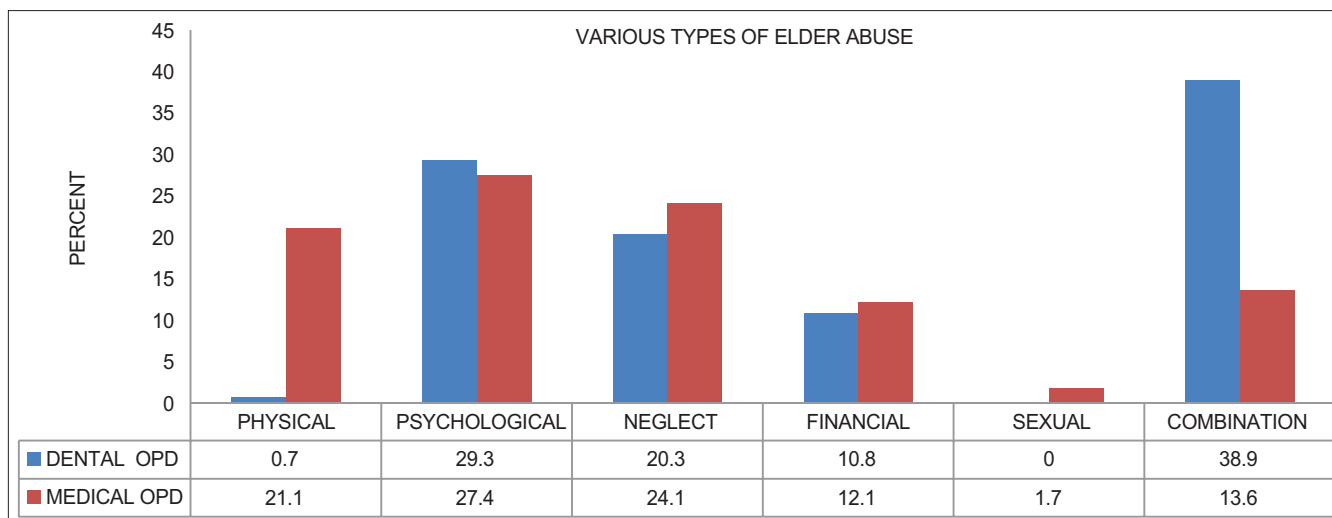
Graph 2: Prevalence of abuse among different age groups in both categories (OPDs)



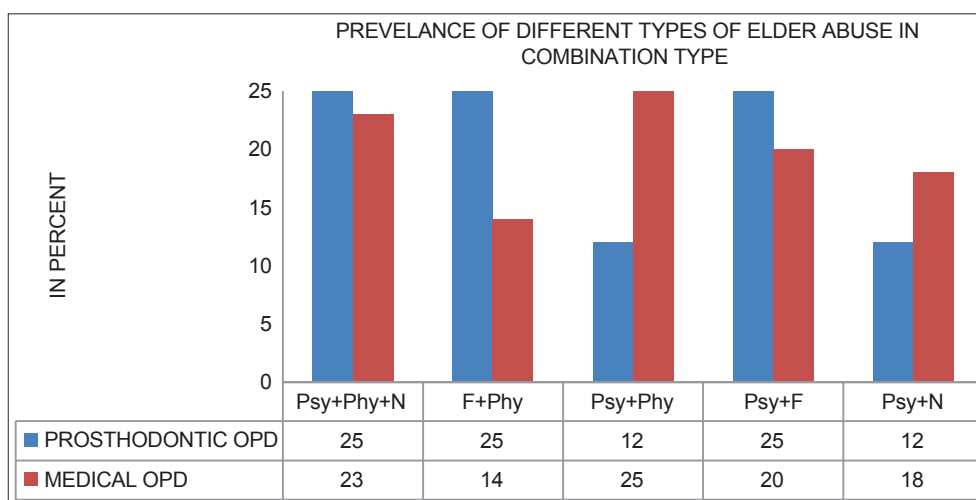
Graph 3: Relationship between various sexes with respect to different age groups

prevalent (38%) and psychological type associated with other abuses being the most common.

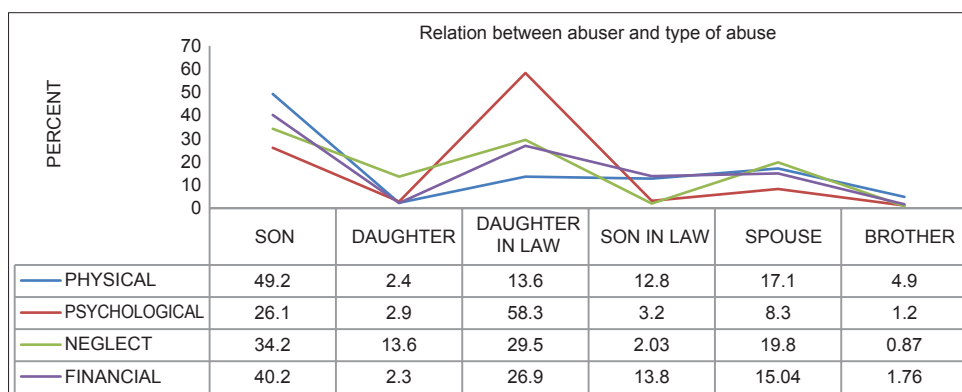
Forensic aspects of elder abuse and neglect are not only undocumented but unexplored and uncharted too. As primary data related to forensic markers of elder abuse are scant, this study investigated the presence or absence of abrasions, lacerations, bruises, fractures, restraints, decubiti, weight loss, dehydration, medication use, burns, cognitive and mental health problems, personal hygiene, and sexual abuse by integrating every possible data available from the subjects. About 26% of the elders abused revealed that they had already made and declared their will and that their main assets had been transferred. The subjects especially most of the widows seemed to be under high risk of financial exploitation, which is in accordance with Parveza et al.<sup>[28]</sup> The subjects who had changed or were forced to change their will were suffering from multiple types of abuse. Three subjects who had suddenly transferred



Graph 4: Distribution of different types of abuse in respective OPDs



Graph 5: Combination of various types of elder abuse



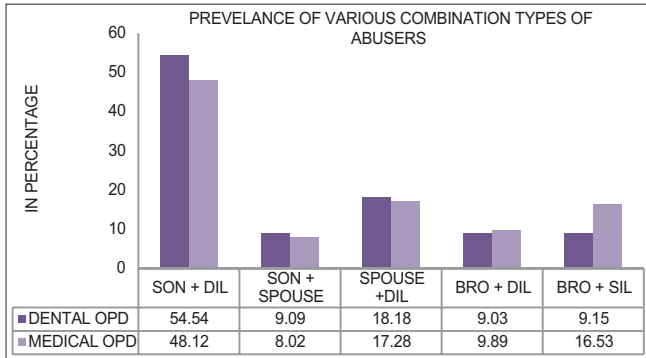
Graph 6: Association between the different types of abuser and the type of abuse

their personal belongings like vehicle, land, and house had no explanation that raised suspicions of elder abuse as mentioned by Fulmer<sup>[29]</sup> and Tueth.<sup>[30]</sup> Gauging of a forensic marker like personal hygiene can be difficult at times as poor personal care is a matter of lifestyle or choice. In order to

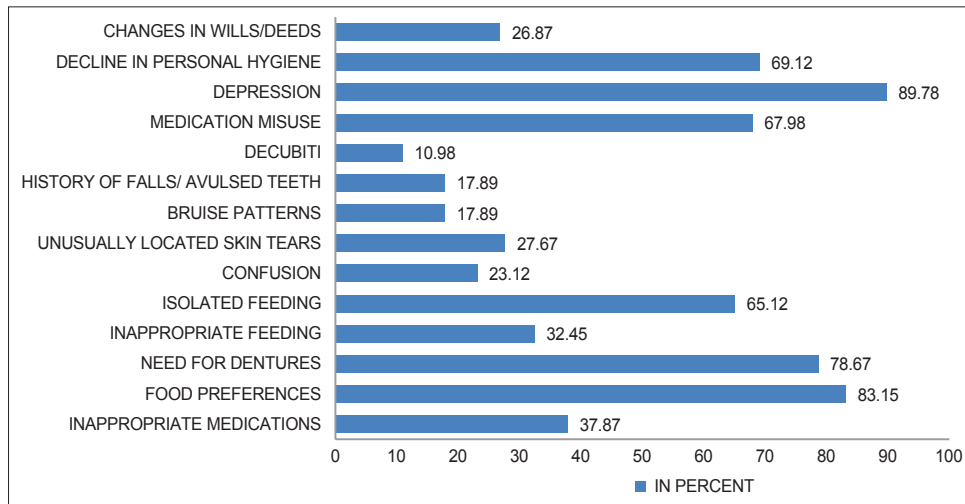
consider hygiene as a forensic marker, only those (69%) out of the total number of subjects were considered who had exhibited a definite and significant decline in their overall hygiene compared to the past, in spite of not suffering from any form of dementia or psychotic illness.<sup>[31,32]</sup> Age-related

changes have no impact on one's hygiene; therefore, any decline in personal hygiene demonstrates neglect.<sup>[33,34]</sup> Dirty clothes and footwear, dirt-laden nails, bad odor emanating from clothes, and skin infections like scabies were some of the signs found during examination of the abused subjects.

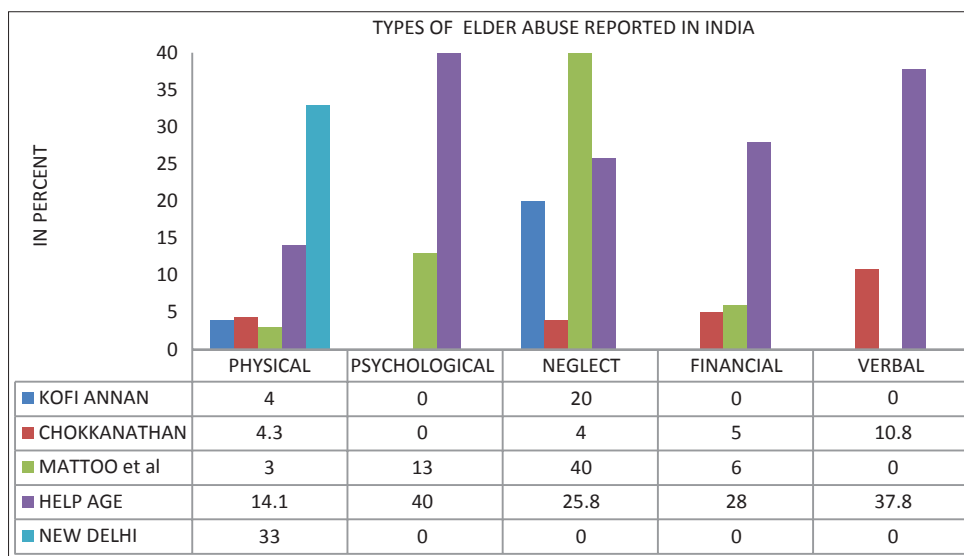
Cognitive and mental health disorders like depression, dementia, alcohol abuse, psychosis (not related to age),<sup>[35,36]</sup> and self-neglect though affecting a large number of aging individuals, have been considered as potential forensic markers. A large majority of the elder abused subjects in this study were found to be depressed (89%) and some were abusing alcohol (5%), which is in accordance with the studies done earlier.<sup>[37,38]</sup> Individuals with dementia and depression are likely to be more prone to further abuse and neglect because such patients tend to exceed the threshold of tolerance of the caregivers.<sup>[39]</sup> The results of the present study showed that about 67% of the abused subjects gave a history indicative of misuse of medication by withholding necessary medication, delaying the purchase of medicines, administering medicines not mentioned by the doctors, altering the dose of medicines, and not being monitored when any new medicine was prescribed. As mentioned in the literature, geriatric patients consuming adult dose



Graph 7: Distribution of different types of abusers



Graph 8: Distribution of potential forensic markers in the study subjects (in percentage)



Graph 9: Various studies on elder abuse conducted in India

itself indicates drug abuse.<sup>[40,41]</sup> Forensic markers in the form of unusually located skin tears<sup>[42-44]</sup> (27%) especially in the physically abused subjects, bruises<sup>[45,46]</sup> (17%), history of avulsed teeth, and existing decubiti<sup>[47-49]</sup> (10%) were also seen, which indicated abuse and neglect on the part of the caregivers. Unusual locations of skin tears in the study were found in the head region, especially the left side, and on the subject's back, neck, and face. The bruised individuals showed retention of shape of causative agents, parallel marks, and bruised hands. Perhaps the most important forensic marker that was highlighted during the study was related to malnutrition. Loss of weight in some individuals over the last 3-5 years ranged 8-15 kg. A large percentage of the subjects required partial and complete dentures, which most of them had never made, whereas 83% were not fed the food of their choice and 65% were inappropriately fed (isolated feeding, cold food, previous day's food, leftover food, and food that would harm like excessive sweet, salty, oily, spicy, and partially cooked food). Malnutrition can be an important predisposing factor for other illnesses or death as it can lead to rapid loss of weight (40% loss of body weight can result in death).<sup>[49]</sup>

## Summary and Conclusion

Elder abuse exists among those patients who visit medical and dental hospitals. Elder abuse affects the quality of life of a person and could be an important factor in such subjects showing poor compliance with medical or dental treatment. Health care workers, especially those who rely on the patient's cooperation for better treatment results, should not rule out the possibility of existing elder abuse. It is also important that evidence-based forensic markers of elder abuse and neglect are further studied for various parameters related to both the abuser and the abused. Scant data in the field demand comprehensive research programs that will enhance the forensic detection of those cases where death might be due to elder abuse or neglect.

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