



Review of do-it-yourself dentistry- time to ring the alarm!

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Abstract

Do-It-Yourself (DIY) dentistry isn't a new notion. Since the beginning of the internet and social media, people have been looking for at-home "hacks" for more expensive dental treatments. From cleaning your teeth with baking soda to scaling your teeth with a sewing needle, there is always a more appealing, simpler, and less expensive alternative to going to the dentist. Dentistry, like automobile airbag design, parachute packing, or heart surgery, should never be performed by an unskilled person. Despite the fact that most sensible people agree that dental care should be left to dentists, many patients over the world have sought to address their dental problems on their own, frequently with devastating effects. While ridiculing these mistakes is easy, the victims usually have genuine motives for their endeavors. Furthermore, the exorbitant cost of dental care motivates some patients to try self-treatment. Renowned DIY dental remedies and brands are now carefully created to appeal to a broader audience, particularly younger generations. The desire to undertake DIY treatments has been stable throughout time, but with each affirmation, a new aspect tends to make the most popular dental fads even more enticing. The most effective direct-to-consumer (DTC) dental products eliminate the "middleman"—even if a qualified practitioner is inexpensive, straightforward, and convenient. On the other hand, the attractiveness of utilizing contemporary technology to achieve desired results is what genuinely defines today's DIY alternatives. Unfortunately, in a society where anyone can find a live video on how to DIY anything, it is up to dental practitioners to communicate to patients that dentistry is not a DIY job. Shortcuts in dental treatment and care will have serious and lasting implications. By refuting these trends daily, perhaps one day it will become clear that just because something is posted or sponsored on the internet does not mean it is safe to try it without first checking the evidence.

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1. Introduction

"Do it yourself dentistry" is about self-treatment, which has attained a lot of concern and consideration in recent times. This is predominantly practiced in the United States [1]. Without any prior training or any knowledge of standard procedures, people engage in a lot of therapies on their own. Although self-dentistry comes with caution, fewer people are aware of the negative implications. Along with other medical specialties, it is also practiced in dentistry [2]. Many dental practitioners, including myself, are concerned about enabling patients to self-diagnose and treat themselves for various treatments. Self-medication, extractions, self-bleaching, implants, crowns, veneers, fixing malocclusions, self-medication, and many other procedures, including fetal birth and abortion attempts, are all common practices that have led to serious problems and even fatalities. Despite having a classy manifestation, some items have potential health risks. The majority of these DIY items and the

companies that market these products are unregulated, providing little protection to customers. As DIY issue is not much explored in literature in this review an attempt is made to report all the risks associated with DIY dentistry.

2. DIY Orthodontics

Orthodontic treatment entails complex and precise tooth movements and should only be performed by a licensed orthodontist who has received extensive training and education in this field.

Attempting to align or move your teeth on your own can result in serious oral health issues such as damage to your teeth, gums, and jaw, as well as infections and other complications. Orthodontic treatment also necessitates the use of specialized tools and equipment that the general public cannot access. Furthermore, do-it-yourself orthodontic treatments, such as rubber bands or make-your-own clear aligners, can be dangerous and exacerbate the problem,

causing further damage or even tooth loss. Online retailers like Smile Direct Club, Smile Shop, and Clear Correct offer a wide variety of orthodontic commodities. Tele dentistry, or long-distance oral health care, can be supported by the supervision of dentists via the Internet [3]. The patient makes the impression and submits it to the authorized dentist for further fabrication after purchasing the orthodontic kit, which is advertised online. Additionally, patients attempted to close gaps between their teeth with the use of elastic bands and hair ties [1]. Without a professional, they follow YouTube and Google videos for dental care, which is quite harmful. The users' right to privacy regarding its side effects is subject to various legal problems. As a result of the orthodontic treatments that the patients undertook on their own, serious periodontal issues such as root resorption, mobility, recession, etc. arise which in turn need specialist care. Thus, it is necessary to refrain from using these procedures to prevent subsequent problems. Meade MJ et al. undertook a study to assess the quality of information on Direct-To-Consumer (DTC) orthodontic aligner vendors' websites. As the usage of DTC orthodontic aligners increased, they reviewed 21 websites that provided treatment information. They observed that the information on DTC orthodontic aligner providers' websites is of poor quality [4].

If you are considering orthodontic treatment, it is critical that you consult with a licensed orthodontist who can assess your specific needs and develop a treatment plan that is customized to your specific case. Annabelle Carter and Susan Strokes performed a Web-based investigation and review of internet pages advertising DIY braces in order to assess the number of organizations supplying DIY braces and to investigate the content available on webpages regarding DIY brace providers who operate across the United Kingdom. To analyze the quality of online information, the DISCERN technique was utilized. According to the statistics, the quantity of DIY orthodontic enterprises in the UK has grown in the last three years. It is crucial to determine whether or not these items constitute dental care in essence. If this is indeed the scenario, it is vital to ensure that these are properly regulated, that appropriate information is available to enable informed consent, and that there is increased transparency associated with dental care in order for the benefit of the public [5]. Choosing the inexpensive and simple alternative of DIY braces can result in catastrophic tooth damage. They have the potential to cause painful bone injury, tooth deterioration, and even tooth loss. They can also harm your jaw and gums, not to mention the bacteria from foreign items that can cause infections in your mouth. You can even end up back in the dental chair with a large fee merely to restore the damage! Finally, orthodontics is an extremely sophisticated procedure that should only be conducted by an expert.

3. DIY Prosthodontics

Temporary tooth replacement, relining, and rebasing techniques are very popular DIY procedures in prosthodontics [6]. The product that can be used to temporarily replace missing teeth is called a temp tooth. These days, cosmetic crowns can also be purchased online. The kit is made up of thermal beads that the patients themselves mold into the desired shape of the tooth by heating them to a high temperature before inserting them into the edentulous area. Thermal beads are produced and formed, Geetha et al., 2023

and any surplus is trimmed using scissors. Even though this technique may be aesthetically pleasing, incorrect crown handling and placement could harm the periodontium and underlying bone. It has been claimed that a 63-year-old Brazilian male patient made the maxillary and mandibular anterior bridges by cutting off the crowns from the roots of his own newly-extracted teeth with a saw. He tied his cut natural teeth together with PVC-type plastic strips that he bent to fit the dental arches. Although the patient could not use the bridges for mastication and the devices required daily maintenance, he was pleased with the looks [7]. DIY prosthetic dentistry can also result in ill-fitting dentures or implants, causing discomfort, difficulty chewing, and speech issues. Furthermore, ill-fitting prosthetics can cause bone loss in your jaw, negatively impacting your overall oral health. If you are considering prosthetic treatments, it is critical to seek the advice of a licensed prosthodontist who can assess your unique requirements and devise a course of action that is personalized to your particular condition. They could potentially offer safe and effective treatment options to help you regain your oral health and function.

4. DIY Extractions

Despite being one of the scariest procedures, people sometimes attempt teeth extraction on their own. Patients frequently try to perform extractions on themselves by using pliers or other tools and following online instructions [Dangers of DIY dentistry]. Unbearable pain, as well as a bone or root fracture, may result from the improper use of tools or devices or a lack of expertise. When a person cannot afford treatment, they frequently resort to having a painful tooth extracted. By paying for the expense of dental treatment through dental payment plans, this can be avoided [8]. Dental indemnity plans and standalone plans are the two sorts. The British Dental Association (BDA) has cautioned the government against ignoring the escalating crisis in NHS dental services, following reports from Plymouth that residents are performing DIY tooth extractions in their home by themselves amidst 14,000-strong queues for treatment. Councilor Sue McDonald addressed in front of the Plymouth Council Select Committee on Dental Health, which is carrying out a special inquiry into the state of dental wellness, regarding residents injecting themselves with substances such as alcohol and opioids to alleviate the pain before undergoing surgeries [9].

One woman had reported to the news organization BBC that she had removed her eleven teeth by herself, whereas other people alleged that they had to wait for four long years to get an appointment for their tooth extraction. Some individuals used thread and door knobs to extract their teeth in the past. Minor oral surgical treatments which might be performed at home includes abscess drainage and wart removal [10].

5. DIY Implants

Patients rarely attempt to insert dental implants themselves since doing so requires specific training and experience. Osama Abu Hammad et al. documented a case of a 56-year-old dentist with 14 years of experience in the field of implant dentistry who had self-treated with dental implants. The dentist tried inserting three implants with the assistance of three assistants. The dentist had a bridge in his mandibular left posterior region, with a missing first molar and symptomatic distal abutment (second molar). He gave

himself LA, took out his existing bridge, and extracted his troublesome second molar. He accomplished flapless insertion of three single body implants on his own right away. Three days later, he attached himself the prosthesis to the abutment and implants [10]. Dentures and dental implants, for example, necessitate meticulous planning, accurate measurements, and specialized materials and equipment. Making or installing these devices on your own can result in serious oral health issues such as gum and tooth damage, infections, and other complications.

6. DIY Endodontics

A 40-year-middle aged man who was a commercial truck driver from a low-income group had sustained considerable pain in his left maxillary second molar teeth, three years previously. The patient had fixed the tooth himself twice in the prior three years! When questioned, he admitted that he used a holiday dentistry kit, which included a plastic mouth mirror, extraction forceps, and a straight probe, as well as an electric toothbrush with a small round head, to debride the cavity. For convenience of use, the user had trimmed the bristles, so that they would fit inside the cavity. He had employed his sense of touch to insert the material used for filling inside the constructed cavity. He had applied Quick steel, which he had purchased from a DIY automobile spare parts store [11]. Patients employ temporary tooth filling materials, such as Dentek or Dentseal, which are sold online. One of these items is a tiny capsule of tooth-filling material, which is carried by the scoop and inserted into the tooth's decaying area. The material has a larger probability of detaching, and the underlying caries are not fully separated since the cavity was not properly prepared. Additionally, fractured fillings are repaired, and loose crowns are secured with this substance. Clip-on veneers were created to be a more affordable alternative to regular permanent veneers. They can be worn at the wearer's convenience and do not necessitate the person to file down their teeth to be affixed. Clip-on veneers may be composed of harmful materials, and the design may abrade and perpetually impair your teeth and gums. If not properly installed, there is also the risk of inhaling and choking. Because these devices appear to rest on top of the teeth, plaque, bacteria, and food debris can become trapped around and beneath the clip-on teeth, increasing the risk of tooth decay, gum disease, and erosion over time, especially if eating and drinking while wearing them.

7. DIY Bleaching

Products for bleaching or teeth whitening are sold both offline and online. Additionally, homemade products like baking soda are used to whiten teeth. Patients take their impressions, with the assistance of the technician helping to fabricate the tray. It is also possible to buy and utilize pre-made trays in various sizes. Following that, bleaching agents like hydrogen peroxide or carbamide peroxide are applied. However, DIY dental care is less effective than professional care [12]. SR Kwon et al. compared the benefits of do-it-yourself (DIY) whitening against standard dental whitening procedures employing several shade assessment techniques. They sorted 120 extracted human molars into six groups of 20 teeth each. The brand's directions were followed for over-the-counter, dentist-dispensed for personal use, and in-office whitening. For homemade whitening, a strawberry-flavored and baking soda mixture was utilized. There were both

negative and positive controls. The investigation revealed that DIY whitening with a strawberry mixture is not a promising tooth whitening technique when compared to professionally administered patient-applied home whitening and an over-the-counter medication [12]. Higher concentrations of these bleaching compounds can cause gingival irritation, sensitivity demineralization of the tooth, etc. For over a decade, consumers have imagined and desired a "Hollywood smile," boosting consumer interest in tooth whitening. Whitening the teeth is currently the most prevalent elective dental procedure, and when done under the guidance of a dentist, it is both safe and effective. Over one million Americans whiten their teeth each year, bringing in over \$600 million for dental practices. The abundance of whitening options reflects the huge demand: In-office whitening, patient-applied home whitening, and over-the-counter (OTC) treatments are all options [12]. Whitening should only be performed by a dental specialist who can either manufacture you personalized whitening trays or perform a surgical procedure for better esthetics. According to the law passed in 2012, the key compounds used for whitening teeth (Hydrogen Peroxide and Carbamide Peroxide) are only legitimately available in products sold by a dental practice. This law was enforced to ensure the regulation of these treatment procedures, which means that the commercially available online products will not cause any effect on the color of your teeth. It is not suggested to use whitening strips. There have been reports of consumers getting gum burns or experiencing excessive sensitivity. Charcoal toothpaste for whitening does not contain whitening chemicals and instead uses abrasive particles to eliminate surface discoloration. In reality, there is no proof to support its efficacy as a cleansing agent instead, the charcoal particles may add to unfavorable aesthetic impacts by becoming trapped in fissures in the teeth or restorative margins around crowns, veneers, and fillings, resulting in more discoloration over time. Moreover, these products lack main ingredients like fluoride which acts as anticariogenic agent.

8. DIY Periodontics

Periodontics is a discipline of dentistry that focuses on the prevention, detection, and management of periodontal disease, which affects the gums and other tooth-supporting structures. Periodontal disease is a threatening condition that, if neglected, can result in tooth loss and other health issues. Periodontal disease treatment entails a combination of professional dental care, such as scaling and root planing, medication, and, in some cases, surgery. DIY scaling is another common treatment carried out by patients utilizing over-the-counter medications or teeth cleaning kits that come in a variety of forms, including sprays, scrapers, rotary devices, whitening pastes, etc. Polishers are operated against the teeth while using rubber polishing cups to remove stains. Additionally, polishing can be done with or without whitening pastes using rotary power brushes. To eliminate deposits between the teeth, plaque scrapers are also available online. These plaque scrapers require a skilled user because they are sharp. Using scrapers carelessly might harm the gingival or nearby tissues, and expose the root surface, which can cause hypersensitivity and bleeding gums. Trying to treat periodontal disease on your own can result in serious oral health issues such as gum, tooth, and jawbone damage, infections, and other complications. Furthermore,

DIY periodontics dentistry can exacerbate the condition, making it more difficult and expensive to treat in the long run. If you suspect you have periodontal disease, you should seek the advice of a licensed periodontist who can examine your distinctive requirements and come up with an intervention that suits the type of disease you have. They can offer you safe and effective treatment options that will help you restore your oral health and prevent further damage.

The menace of do-it-yourself dentistry:

There are numerous risks associated with do-it-yourself-dentistry. Attempting to perform dental procedures on your own without the proper training, education, and equipment can result in serious oral health problems, such as:

Damage to Teeth and Gums: DIY dentistry can result in tooth and gum damage. Incorrect tools or techniques can lead to chipped or broken teeth, damaged gums, or even tooth loss.

Infections: Infections can also occur as a result of do-it-yourself dentistry. Infection occurs when dental procedures are not performed under sterile conditions. A mouth infection has the potential for transmission across various regions of your body, creating major health consequences.

Incorrect Diagnosis and Treatment: DIY dentistry can lead to inaccurate diagnosis and treatment. It is difficult to accurately diagnose oral health problems without the proper training and education. This can lead to incorrect treatment, worsening the condition or even causing further damage.

Risk of Complications: DIY dentistry can lead to problems. Dental procedures can be complicated, and complications can occur even when performed by a trained professional. Attempting to perform these procedures on your own increases the likelihood of complications.

Costly Repairs: DIY dentistry can lead to expensive repairs. If your DIY dentistry causes damage or complications, you may need to seek professional dental care to resolve the issue. This can be costly and may necessitate extensive treatment.

9. Conclusion

Do It Yourself dentistry is a concerning idea that more and more individuals are attempting. DIY dentistry has its drawbacks despite being popular for its cost-savings, reduced chair time, and convenience. The appropriate usage of materials, both in terms of quantity and concentration, must be learned. DIY dental care is not more efficient than dental care received in a dental office. To help patients, with affordable dental care, as well as to provide them with it, dental insurance programs can be implemented in the practice. The detrimental effects of do-it-yourself dentistry must be made known. To summarize, it is critical to seek professional dental care if you are experiencing any oral health issues. DIY dentistry can result in serious oral health issues, complications, and costly repairs. It is always preferable to seek the advice of a licensed dentist who can offer you safe and effective treatment options for restoring your oral health.

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