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Should dentists perform independent jaw wiring for weight loss? A principlist analysis

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ABSTRACT

This article presents an ethical analysis for the practice of jaw wiring as an independent weight loss intervention by dentists. The four foundational principles of autonomy, nonmaleficence, beneficence and justice serve as a framework for evaluating the ethical dimensions of the practice, and whether it can be justified. The ethical analysis of this weight loss procedure requires dentists to debate the potential benefits with possible harms, while respecting the autonomy and desires of the patient. While patients possess a fundamental right to autonomous decision-making, conceding to their autonomy is not absolute and dentists need to balance their decisions with considerations of beneficence and nonmaleficence. The ethical analysis concludes that dentists who refuse requests to independently perform jaw wiring for purely weight loss purposes are ethically justified within the principlist framework when the principles of nonmaleficence and beneficence are at stake. The wellbeing and health of the patient, as well as professional obligations, justify their refusal.

INTRODUCTION

The increasing prevalence of obesity[1] coupled with social pressures to conform to an ideal body type is driving individuals to seek alternative and unconventional weight loss strategies, such as jaw wiring. This technique of maxillomandibular fixation has been popularised on social media platforms and is commonly known as "slimming wires". It has gained traction as a method of weight loss that has evolved beyond its original medical indication for treating temporomandibular joint disorders and maxillo-mandibular injuries. More recently, a contentious intra-oral device for jaw immobilisation using orthodontic brackets on molar teeth together with closed-field magnets has been devised, which restricts dietary intake purely for weight loss purposes.[1]

A brief search on Google search engine indicates that a number of dentists in South Africa are advertising the so-called "slimming wires" and offer the service of independent jaw wiring for weight loss. Although it is legal in South Africa for dentists to treat maxillary and/or mandibular fractures with jaw wiring in cases indicated for immobilisation, this trend of patients requesting the procedure for aesthetic reasons presents clinicians with ethical dilemmas, wherein they must consider patients' aesthetic desires versus medical necessity and the potential harm posed by this weight loss procedure. Additionally, dentists must consider whether they can refuse to perform a procedure that may cause more harm than good to the patient or compromise their professional status. This ethical dilemma highlights the complexity of balancing the four principles of biomedical ethics.

Rooted in the works of Beauchamp and Childress,[5] the four principles of biomedical ethics provide a robust ethical framework for scrutinising the appropriateness of clinical interventions, one that resonates with practical significance for jaw wiring as a weight reduction procedure. This analysis aims to offer guidance for dentists facing the ethical dilemma of patient requests for independent jaw wiring as a weight management intervention. Furthermore, this article aims to contribute to the ongoing discourse on clinical ethics and weight management interventions by delineating the ethical boundaries within which dentists must tread in their pursuit of patient wellbeing.

Principlism as a framework

Principlism is an applied ethics approach for the examination of moral dilemmas centering on the application of certain ethical principles.

Tom Beauchamp and James Childress initially proposed the approach in their seminal work, "The Principles of Biomedical Ethics", first published in 1979. Beauchamp and Childress identified four core principles of biomedical ethics – respect for autonomy, beneficence, nonmaleficence and justice – as a guiding framework for ethical decision-making in clinical practice. These principles guide actions, but they are not rules. Principles serve as "general guidelines for the formulation of more specific rules"[5] while rules are "more specific in content and more restricted in scope than principles".[5] The four principles in question are *prima facie* principles, which are considered of equal import ance

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and carry equal weight.[5] Each principle is a serious moral obligation that must be considered along with other duties to resolve ethical dilemmas or conflicts. In other words, these principles are considered binding unless they are superseded by a more compelling claim.[6,7] This means that healthcare professionals must strive to uphold each principle, provided they do not conflict with one another.

Despite its many criticisms, principlism still dominates the bioethics landscape. Principlism's greatest appeal lies in its provision of a simple and accessible approach to thinking about ethical issues in health care.[8] For example, Ranaan Gillon states that principlism "offers a common, basic moral analytical framework and a common, basic moral language"[9] and Beauchamp explains that "the distilled morality of principles gave diversely educated people from many fields a shared and reasonably practical set of norms for the analysis and resolution of moral problems".[10]
In the sections to follow, the four principles are explored in detail and analysed in the context of independent jaw wiring for weight loss.

Autonomy

Autonomy, derived from Kantian philosophy, emphasises the significance of individual self-determination and informed decision-making. To ascertain an individual's autonomy, three fundamental criteria must be fulfilled, namely voluntariness, informed decision-making and capacity.[5]

Firstly, for a person's decision to be considered autonomous, it must be voluntary in nature.[5] In order to decide voluntarily, an individual must make a choice free of any form of coercion or manipulation.[11] Coercion is generally defined as the exercise of power to enforce one's will upon others, often resulting in the infliction of harm or punishment for noncompliance.[12] This can include the use of force or pressure to obtain desired outcomes, such as self-protection.[12] The act of manipulation involves intentionally altering someone's perception of a situation without using persuasion, which in turn influences her or his understanding of the available options.[12] This process of informational manipulation can limit a person's autonomy by making them unaware of important details, ultimately affecting their decision-making.[12] Although the manipulator does not change the person's actual options, their beliefs are influenced, resulting in a modified perception of the situation.[12] Unlike coercion and manipulation, persuasion does not infringe on a patient's autonomy[13] but instead forms part of the informed consent process. Persuasion is the influence of an appeal to reason.[5,12] It is considered akin to shared decision-making, recognising the collaborative nature of decisions in certain contexts.[14]

Informed decision-making is another integral aspect of autonomy. Respect for autonomy necessitates that patients are thoroughly informed about any proposed treatment plan. This involves engaging in extensive discussions with patients about the available treatment options, their associated risks and benefits, costs, prognosis and the consequences of not pursuing treatment.[11] Obtaining a signature on a consent form is not sufficient for respecting autonomy;[11] dentists must ensure the patient comprehends the treatment and its implications. This requires them to actively listen to patient requests and convey information in a way that is easily understandable.[11]

Competency, or capacity, is the third criterion for autonomy. Individuals must possess the ability to make informed decisions, which involves comprehension, logical deliberation and the capacity to make decisions.[13,15] Competent individuals possess the mental faculties necessary to make decisions and are legally authorised to do so. Examples of individuals who lack the mental capacity to make decisions include those who are delusional, dependent on drugs or suffering from mental illness. Additionally, children who are not of legal age to provide consent are legally prohibited from making medical decisions.

These three conditions constitute the basis for obtaining informed consent. Informed consent is both a moral duty and a legal requirement in various countries, including South Africa. Nevertheless, regarding the consent process as a means to evade legal liability rather than as a means to respect autonomy is a departure from the fundamental ethical principle of informed consent. As Beauchamp and Childress point out, "from a moral perspective, informed consent is more concerned with the autonomous choices of patients than with the liability of professionals as agents of disclosure".[5] The primary objective of the informed consent process is to treat the patient as an autonomous individual and to safeguard individuals who lack information about the treatment-related details.[16] If the consent process is viewed as a means to avoid legal liability rather than to assist the patient in comprehending the proposed treatment, it fails to demonstrate respect for autonomy and deviates from the moral obligation of informed consent to one of formality.[16]

Applying the principle of autonomy to independent jaw wiring for weight loss raises critical ethical considerations. Individuals must provide informed consent before undergoing such a procedure, and the nature of this intervention requires careful examination. Jaw wiring significantly impacts an individual's ability to eat and communicate. This restriction has implications not only for the physiological aspects of autonomy but also for the broader concept of self-determination. The decision to undergo jaw wiring must be voluntary and well-informed. However, concerns arise regarding the voluntariness of this decision, especially considering potential societal pressures to conform to certain beauty standards.

The ethical evaluation should scrutinise the quality of informed consent in this context. Are patients adequately informed about the procedure's potential physical, psychological and social consequences? Moreover, does the social context, including societal expectations and body image pressures, influence the voluntariness of their decision?

A patient's request for jaw wiring for weight loss may arise as a consequence of significant societal pressure and stigma associated with their body weight. This external influence raises questions about the authenticity of their decision-making process. Thus, the ethical evaluation, within the autonomy framework, must delve into the complex interplay between individual choice and external pressures.

The findings of a recently published research study using an intraoral device coupled with intraoral magnets for short, medium or long-term usage for weight loss have been heavily criticized by Pausé, *et al*., because the study "is underpinned by anti-fat attitudes and assumptions" and

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"indicative of a culture that consistently promotes harm to fat and other marginalised communities".[17]

Beneficence

Beneficence is highlighted in the Hippocratic Oath as a fundamental principle in clinical ethics. Beneficence refers to any act that fosters goodness.[18] It is rooted in the obligation to promote patients' wellbeing, emphasising positive actions aimed at enhancing the patient's best interests and welfare.[5] Unlike the principle of nonmaleficence, which mandates avoiding harm to others, beneficence affirms positive actions rather than prohibition. In addition to promoting overall health and acting in the patient's best interest, beneficence also entails the ethical duty to prevent harm.[5] This means taking positive steps to promote patient's best interests, rather than merely refraining from harming them. This duty includes the provision of safe, appropriate and beneficial care that aligns with the patient's best interest. For a procedure to be beneficial, it must fulfil three criteria: it must be effective, its effects must be sustainable and there must be no less harmful alternative.[19]

Beneficence is closely linked to informed consent in healthcare. Informed consent is not only a matter of respecting autonomy but also a means of ensuring beneficence. Dentists have an ethical obligation to provide patients with all the relevant information about a proposed procedure, including its potential benefits and risks, which empowers the patient to make an informed decision that is in line with their best interests. Providing comprehensive information about the potential benefits and harms is therefore essential to ensure beneficence. Dentists also have an ethical duty to refer patients to other healthcare professionals when the patient's wellbeing is at stake, and dental procedures may not be the most appropriate or effective means to address a particular issue.[11] This duty to refer aligns with the ethical principle of beneficence as it ensures that the patient receives the most appropriate and beneficial care.

In the context of jaw wiring for weight loss, a thorough ethical evaluation of beneficence requires an assessment of the potential benefits and drawbacks associated with this intervention. Proponents of jaw wiring argue that the procedure can lead to significant weight loss by restricting caloric intake, and in cases of severe obesity where other interventions may have failed, jaw wiring offers a tangible solution. Evaluating the scientific evidence supporting these claims is crucial for a beneficence-based analysis. Although many studies have found that individuals undergoing jaw wiring experienced substantial initial weight loss, the long-term efficacy of this intervention remains a subject of debate.[20] The ethical evaluation should therefore critically examine the balance between the potential short-term benefits and the uncertainty surrounding sustained weight loss. While weight loss is a primary goal, the ethical assessment should also extend beyond physical outcomes to encompass psychological wellbeing. Jaw wiring introduces profound changes to an individual's relationship with food, impacting not only eating habits but also mental and emotional states. Questions arise concerning the potential psychological distress associated with the intervention.

Nonmaleficence

The principle of nonmaleficence imposes a duty to prevent harm to others.[5,13] Harm is generally construed as anything that worsens an individual's condition.[21] The principle of nonmaleficence is a fundamental concept in the field of medicine, and it is encapsulated in the Hippocratic Oath, which states, "first, do no harm". This principle emphasises the importance of avoiding harm to patients during clinical treatment. The principle obligates dentists to prevent harm, minimise risks and refrain from actions that could worsen a patient's condition. In cases where harm cannot be entirely avoided, it is essential to balance the potential benefits against the potential harms and act in the patient's best interests.[22]

The principle of nonmaleficence also obligates dentists to stay informed about latest developments in the field. This continuous education is vital to ensure that healthcare is based on current knowledge and evidence-based practices, thus reducing the risk of harm to patients, and increasing benefits to them.[11] A dentist who neglects to stay abreast of current and relevant knowledge, as well as failing to adhere to contemporary standards of practice, will inevitably fall short of the acceptable standard of practice and may confront professional and legal repercussions as a result.

Nonmaleficence calls for dentists to recognise and acknowledge their own boundaries, and to direct patients to other healthcare professionals when a patient's situation surpasses the scope of their practice or when a specialist from another field could better attend to the patient's needs.[11] By referring patients to professionals with distinct expertise when necessary or when the required treatment is beyond the nonmaleficence scope of practice, dentists can prevent harm to patients and the dental profession.

In the context of jaw wiring for weight loss, a comprehensive ethical evaluation requires the examination of the potential harms and risks associated with this intervention. Jaw wiring introduces inherent physical risks and complications. The wiring of the jaws can lead to several dental problems as well as potential damage to the surrounding perioral tissues. Wiring of the jaws makes oral hygiene maintenance challenging which could, in turn, lead to inflammation of the dento-gingival tissues, enamel decalcification, decay and temporomandibular joint problems.[23] These complications are not only discomforting but also raise concerns about the principle of nonmaleficence. The ethical analysis should scrutinise the extent to which these potential harms align with the principle of nonmaleficence. Additionally, consideration should be given to whether the potential physical complications outweigh the intended benefits of weight loss.

Another area of concern pertains to potential nutritional deficiencies resulting from the restricted diet imposed by jaw wiring. The ethical evaluation must explore the risks of inadequate nutrient intake, considering the long-term implications for overall health. This information prompts ethical inquiries into the balance between achieving weight loss and ensuring the overall wellbeing of individuals, particularly in terms of essential nutrient intake.

Nonmaleficence also extends to psychological wellbeing. The restriction imposed by jaw wiring not only alters eating habits but may also contribute to mental health challenges, including anxiety and depression. The ethical evaluation should address whether the potential psychological harms

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are justifiable in the pursuit of weight loss. The ethical analysis within the nonmaleficence framework should weigh these psychological detriments against the intended benefits and explore alternative interventions that may pose fewer risks.

Justice

In healthcare, the principle of justice plays a crucial role in ensuring that patients receive appropriate care and that dentists adhere to ethical norms. It emphasises the importance of fair, equitable and appropriate treatment of persons.[24] It implies that dentists should respect patients' rights and treat them with fairness and professionalism.[11,13] This means that they should be truthful about available dental services and the risks and benefits of treatment options. It also means that they should not discriminate against any patient, based on factors such as race, religion, culture, occupation and gender. Moreover, that they should allow patients to make free and informed treatment choices and not exploit or take advantage of any patient. "Fairness of the patient assumes a role of primary importance when there are conflicts of interests."[24] Importantly, justice also compels dentists to operate within the boundaries of the legal framework.

Applying the justice principle to the ethical evaluation of jaw wiring for weight loss involves examining issues of accessibility, affordability and cultural sensitivity. An ethical evaluation within the framework of justice requires an examination of whether the opportunity to undergo jaw wiring for weight loss is distributed equitably across different segments of the population. Access to healthcare interventions should not be disproportionately skewed in favour of certain groups, raising concerns about social justice. This prompts ethical inquiries into whether the procedure is accessible to individuals regardless of their financial means, ensuring that the benefits and burdens are distributed justly.

Cultural factors play a significant role in shaping individuals' attitudes towards body image, weight and healthcare interventions. An ethical evaluation within the justice framework necessitates an exploration of the cultural sensitivity of jaw wiring as a weight loss intervention. The ethical analysis should address whether jaw wiring respects diverse cultural perspectives on body image and weight loss, ensuring that the intervention aligns with cultural values and avoids perpetuating unjust disparities.

Justice also encompasses the fair allocation of healthcare resources. The ethical evaluation should scrutinise whether the financial cost of jaw wiring is justifiable in relation to its benefits, considering the broader allocation of healthcare resources in society. This involves weighing the economic burden on individuals against the potential societal benefits, ensuring that the intervention aligns with principles of distributive justice.

Ethical analysis

In the context of utilising jaw wiring for weight loss, despite the initial efficacy observed in weight reduction, the sustainability of this outcome is compromised upon removal of the wiring, necessitating the implementation of requisite lifestyle modifications by the patient.[25,26] Although the procedure may yield effectiveness, the attendant effects lack enduring viability. Moreover, numerous less deleterious alternatives exist for weight loss interventions that are readily accessible and beneficial to patients. These interventions encompass behavioural and lifestyle adjustments, such as adherence to a nutritious, calorically sufficient diet and adherence to a structured exercise regimen. Notably, these interventions are characterised by predictability and engender long-term, sustainable effects.

Contrary to the health-improving claims, jaw wiring for weight loss does not confer any health benefits on the patient. The procedural application of jaw wiring fails to yield sustainable weight loss effects, with alternative, less invasive interventions readily available. Jaw wiring proves unsuitable for weight loss treatment due to its singular limitation to solid food restriction, neglecting other facets integral to weight loss. The ethical principle of beneficence imposes an obligation on dentists to redirect patients seeking jaw wiring for weight loss, as this procedure does not align with the patient's best interests.

Concerning the risk-benefit analysis of jaw wiring for weight loss, the procedure manifests more harm than benefit, a dissonance that holds implications for patients, dentists and society at large. The principle of nonmaleficence mandates that dentists refrain from administering procedures carrying greater risks than benefits. Consequently, independent dental implementation of jaw wiring for weight loss is discouraged. When the objective of jaw wiring pertains to weight loss, the intended purpose diverges from the scope of dental practice. In the case of overweight or obese patients, a comprehensive, multidisciplinary approach is imperative. The etiology of obesity being multifaceted, the caloric restriction induced by jaw wiring is deemed insufficient. Dentists, guided by the principle of nonmaleficence, are directed to partake in a collaborative team effort, refraining from autonomous treatment of weight loss and, instead, providing education and referrals to pertinent professionals.

From a justice standpoint, one might posit that jaw wiring for weight loss constitutes an elective procedure. The allocation of resources to elective procedures raises ethical quandaries concerning distributive justice, as these resources could be redirected to address more urgent healthcare needs. In patients with an ideal Body Mass Index (BMI), jaw wiring for weight loss is deemed an enhancement procedure rather than a therapeutic one. The distinction between treatment and enhancement lies in the former's focus on disease alleviation and health maintenance, while the latter seeks to enhance an individual in the absence of illness. As of present, enhancement procedures remain outside the healthcare purview. Consequently, allocating resources to enhancement procedures is deemed unethical, as these resources could be more judiciously employed within the healthcare domain.

CONCLUSION

In this article, we drew upon the principles of autonomy, nonmaleficence, beneficence and justice to evaluate the ethical permissibility of the practice of independent jaw wiring for weight loss. The ethical analysis of jaw wiring for purely weight loss purposes, using the moral framework of principlism, reveals a complex interplay of ethical principles that guide decision-making in dentistry. The ethical analysis concludes that overriding a patient's autonomous request for independent jaw wiring for weight loss can be justified. While patients possess a fundamental right to autonomous decision-making, this autonomy is not absolute and must

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be balanced with considerations of beneficence and nonmaleficence. The wellbeing and health of the patient, as well as societal and professional obligations, necessitate a nuanced approach that justifies the refusal to perform jaw wiring for weight loss in specific circumstances. The principles of nonmaleficence and beneficence underscore that this procedure is not in the patient's best interest.

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