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THE CONFLICT BETWEEN PATIENT AUTONOMY AND ORAL HEALTH IN DENTISTRY

PhD thesis

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List of Abbreviations

BIID – Body Integrity Identity Disorder

CPVs – Central Practice Values

ENA – Epistemic Network Analysis

FDI – Fédération Dentaire Internationale

IPA – Interpretative Phenomenological Approach

PRISMA – Preferred Reporting Items for Systematic reviews and Meta-Analyses

UID – Utterance identifier

WHO – World Health Organization

1. Introduction

1.1. Foundations of bioethics

Van Rensselaer Potter introduced the term bioethics in his book entitled *Bioethics: Back to the future* in 1971 (1,2). In his work, he emphasized the need to consider ways science can be harnessed for public benefit, thus describing the novel discipline of bioethics as the unity of knowledge in biology and human values, bridging the gap between natural science and philosophy. He claimed that humanity's moral duty to engage in this branch of applied philosophy is justified by our dependence on the environment, our exploitation of natural resources for human benefit, and nature's inability to fully recover from this exploitation. Consequently, he concluded that our existence depends on the responsible application of our knowledge. (2)

Within the broad spectrum of possible applications of ethics in biology, articles published in major bioethical journals between 1971 and 2021 most frequently scrutinized topics related to clinical medicine and medical research. These topics include beginning of life issues (e.g., embryo research, surrogacy, abortion), end of life issues (e.g., active euthanasia, withholding and withdrawing life sustaining treatment), access to healthcare, resource management, allocation of scarce medical resources, ethical questions of assisted reproductive technologies and modern genetics (reprogenetics), ethics education, health law and health policies. (3) Simultaneously, environmental ethics developed as a distinct field in the 1970s, drawing attention to the significance of preserving the environment akin to Potter's concern, although questioning whether the purpose of preserving the environment is solely for the sake of humanity's benefit or if the responsibility for other entities (e.g., animals, plants, land and soil, the biosphere as one coherent system) should likewise be regarded as a moral obligation (1,4). In spite of the decades-long parallel development of environment ethics (green bioethics) and medical ethics (red bioethics), the environmental dimension is gaining renewed attention in medical ethics, due to the healthcare sector's high environmental load, health risks linked to pollution and climate change, and the overall sustainability of the healthcare sector (5). Although bioethics emerged in the latter half of the 20th century, it would be incorrect to assert that medicine entirely lacked moral philosophy beforehand, or that its development was without significant influence from earlier philosophical schools (6). For example, while the *Hippocratic Oath* was not universally adopted as a standard in the ancient era,

and is not entirely consistent with more commonly applied practices in that era described in the *Corpus Hippocraticum*, another historical source attributed to Hippocrates, its rules have been inherited and amended in the World Medical Association's *Declaration of Geneva* (7,8). Moreover, a plethora of ancient, medieval and modern philosophers, of whom a detailed discussion would be beyond the scope of this thesis, took stance in moral issues also relevant in contemporary medicine including how to determine the beginning of life, ethics of suicide, or confronting individual and public interests (9,10). Building on these longstanding discussions, bioethics today encompasses diverse specialties which investigate such issues, involving historians (11), lawyers (12), theologians (13), social scientists (14), etc.

1.2. Theoretical frameworks in bioethics

James F. Childress distinguishes the following theoretical frameworks utilized in bioethics with the remark that overlaps exist: case-driven approaches, virtue ethics, ethics of care, communitarian perspectives, and principle-based approaches (15).

Case-driven approaches, such as casuistry, adopt an inductive logic in bioethical reasoning. The bioethicist utilizing casuistry identifies either a paradigm case or a topic (e.g., patients' wishes), examines the circumstances and other particularities, and outlines the maxim driving the decision. Subsequently, if an analogous case arises, the validity of repeating the decision can be justified. Proponents of casuistry argue that inductive-analogous reasoning reflects the way decisions are made in everyday life, including the decisions of stakeholders involved in bioethical dilemmas. Nevertheless, this approach cannot be employed without any set of à priori ideas of morality that guide selecting the outcomes with the "right" moral judgements. (15–17)

Virtue ethics, on the other hand, focuses on the underlying intentions, rather than the action itself. It describes character traits (virtues) that one should possess, such as benevolence, fidelity, or compassion, albeit proponents may hold different views regarding the specific virtues one should pursue. According to this theoretical framework ethics is not systematic, as it does not aim to provide definitive guidance in practice, it accepts that individuals with virtuous character traits still make mistakes, and it acknowledges that some ethical challenges remain irresolvable. (15,18)

Care ethics, though considered a separate category, could be regarded as a variety of virtue ethics. The framework is based on the theory that men justify ethical decisions by applying a set of rules rationally, while women's moral reasoning tends to emphasize context, individual narratives, compassion, and care. Adopting the latter perspective, the virtue in care ethics is a combination of personal feeling of sympathy and concern with professional commitment for the patient's well-being, thus creating an interdependent relationship between the patient and the medical practitioner. Proponents of care ethics differentiate between levels of care, with the highest level being spiritual care, a quality considered uniquely human. The reception of care ethics in feminist philosophy is twofold. Although care ethics acknowledges the inclusion of women's perspectives, caregiving has traditionally been a role attributed to women, a role often adopted in conditions of oppression. According to this argument a justice-based system focusing on women's rights is more beneficial for women than expanding care as a societal norm. In addition, care ethics likewise bears the main limitation of virtue ethics, that it does not aim to guide specific decisions. (15,19,20)

Whereas the previously described theoretical frameworks describe ethical behavior towards the individual patient, communitarian bioethics focuses on the moral status, moral values and interests of the community, therefore derives morality from tradition, culture, and the common good of the community. In this approach, society and the individual is not necessarily connected through legal authority, but through informal ways such as public education and public dialogues developing moral theory. Bioethicists adopting a communitarian perspective posit that resolving ethical challenges requires adequate personal virtues and intellectual skills to have insight into the social context, the rational capacity to mitigate one's personal biases, and the ability to imagine various possible consequences. However, voices critical of communitarianism may argue that along with virtue ethics and care ethics, communitarianism functions as a philosophical perspective rather than a practical method to resolve specific ethical challenges. In addition, those who employ communitarianism encounter the dilemma selecting the relevant community, as individuals belong to multiple communities, such as family, local community, national community, transnational communities, and several subgroups within these. (15,21,22)

The principle-based approach (principlism) constitutes the predominant theoretical framework in bioethics. Principlism applies moral action guides (principles) derived from common morality. Thus, the basis of this framework overlaps with communitarianism and casuistry, as communitarianism also draws its existence on common morality (15,22), and with casuistry using maxims which can be viewed as simplified, practical versions of ethical principles (23). Conversely, principlism aligns less closely with virtue ethics and care ethics, which focus on the moral character of the individual rather than on the morality of particular actions (15).

In the classification of Childress, principles can be consequentialist or deontological, nevertheless both consequentialist and deontological principles can be present in the same philosophical model. In consequentialism, morality is judged based on the outcomes. A distinction is made between act-consequentialism and rule-consequentialism. Act-consequentialism calculates the probabilities of outcomes, disregarding moral rules, thus limiting its philosophy to merely on a single principle, utility. While this approach is straightforward when all relevant facts are known, its application in clinical settings may undermine trust and patient compliance, as decisions would be made for the benefit of the majority rather than each individual patient. In contrast, rule-consequentialism recognizes several ethical rules that may be justified by their overall consequences. Deontological ethics, on the other hand, posits that moral decisions are not justified by their outcomes, but are obligatory, and are deduced from prior normative concepts, as the moral imperatives of Immanuel Kant. (15)

As part of principlism, the most widely used framework in bioethics is the model proposed by Tom L. Beauchamp and James F. Childress, which is rooted in the philosophy of William D. Ross (24–26). Ross introduced the following *prima facie* principles (moral obligations which should generally be followed "at first glance") not specific to medicine: fidelity (fulfilling promises), reparation (making amends for wrongdoing), gratitude (reciprocating services), justice (ensuring fairness in distributing benefits), beneficence (promoting good for others), intelligence (to improve ourselves), and nonmaleficence (avoiding harm to others) (25). Beauchamp and Childress utilized Ross's principles by incorporating respect for patient autonomy (patient's freedom of choice based on informed consent, free of internal or external restriction) as a key addition, and adopting the principles of beneficence (promoting good for the patient),

nonmaleficence (avoiding harm to the patient), and justice (fair treatment of persons, with special respect to the distribution of medical resources) (24,25). Together, these four principles form what they coined as the *fundamental principles of judgement in biomedical ethics* (24). Additionally, they describe veracity (telling the patient the truth) and fidelity (fulfilling promises to patients), along with privacy (patient's right to control access to themselves) and confidentiality (privacy of patient information) as principles guiding the relationship between the patient and practitioner, rather than principles being directly involved in clinical decision-making (24). Veatch proposed an adjunctive alternative, which includes fidelity, veracity and avoiding killing along Beauchamp's and Childress's four fundamental principles (24,27). In this framework, Veatch distinguished consequentialist principles (beneficence and nonmaleficence) and non-consequentialist principles (all other principles in this model), and attributed a higher normative value to non-consequentialist principles (27).

1.3. Principles in medical decision-making

Codes of professional conduct are based on ethical maxims and principles, with patient autonomy emerging as a core principle in the latter half of the 20th century. Informed consent is a crucial point in the milestones of research ethics, such as the Nuremberg Code of 1947, Helsinki Declaration of 1964, and Belmont Report of 1978. (28) In clinical ethics as well, the respect for patient autonomy has been added to the Declaration of Geneva in 2017 (8), and is present in the Hungarian Medical Chamber's Medical Ethical Codex (29). Accordingly, it becomes essential to examine the interplay of (often conflicting) ethical principles in medical decision-making.

Bester characterized beneficence as a concept with two dimensions involving both a more objective component (with prima facie obligations as to minimize suffering, support physiological function, or sustain life) and a subjective component determined by the patient's personal values, goals, plans and sense of agency (30). In this view, patient autonomy cannot be separated from beneficence, but is rather integral to define what benefits the patient (30).

Cohen discerned three models in how respect for patient autonomy and beneficence may interact (31). In the discrete model these two principles embody two distinct obligations,

therefore one must be ranked over the other in general or specific to the case to avoid conflict. By contrast, the underlying idea of the semi-discrete model is that one principle can mitigate the fulfilment of the other, and a final decision is the total of the values added by each component. Therefore, this model covers the spectrum between the extremes (hard paternalism and a fully libertarian approach). (31) In the non-discrete model, the patient's autonomy and beneficence are conceptually dependent on each other, a position similar to Bester's philosophy (30,31).

More practice-oriented philosophies vary in the degree of priority they attribute to patient autonomy. For example, in Rubin's collaborative model, the physician interviews the patient about their goals and suggests a treatment plan that fulfils those goals (32). Conversely, according to the philosophy of Wilkinson, a patient's current set of values cannot account for granting a request that harms the patient, as the patient's values may change (33). Similarly, Chen and Das argue that the theoretical ideal of patient autonomy is rarely feasible in a clinical situation, and the routinized practices of surgeons narrowing treatment options to a reasonable range is ethically justified (34).

Despite Childress's critique that the theoretical frameworks such as virtue ethics, that describe the character of the actor rather than the action itself are difficult to apply (15), the use of ethical principles in real-life ethical dilemmas often also yield unclear resolutions, or resolutions open to multiple interpretations. For example, Goodman and Houk claim that healthy-limb amputation in case of Body Integrity Identity Disorder (BIID) and physician aid in dying are both misapplications of the principle of respect for patient autonomy in addition to disregarding beneficence and nonmaleficence, while others likewise adhering to the principles of Beauchamp and Childress believe that it indeed benefits the patients if such procedures are a result of their autonomous decision (24,35–37). Furthermore, Kovács compares healthy limb amputation in BIID (rare psychological condition characterized by the desire to amputate limbs perceived as not belonging to the body) to gender-affirming surgery (38). The similarity of both procedures is the mutilation of the body and the consequential irreversible loss of function (loss of the limb's function after limb amputation and infertility after gender-affirming surgery), however they are performed with the intent to psychologically benefit the patient. The study contends that due to this ethical analogy among the two procedures, there is a logical inconsistency in the relatively low acceptance of healthy limb

amputation in BIID among bioethicists compared to the relatively high acceptance of gender-affirming surgery (38).

1.4. Empirical bioethics

As established in the previous subsection, bioethics faces the challenge of avoiding excessive theorization and detachment from real-life practice. The recognition of this issue led to the creation of the translational bioethics movement, inspired by the translational medicine approach to transfer innovation "from the (researcher's) bench to the (patient's) bedside". With this goal in mind, the translational perspective in bioethics can be described with pragmatism (narrowing ethical discourse to meaningful situations) and hermeneutics (researchers learning from stakeholders). (54–56) Although this movement is still in its early stages and therefore lacks well-proven pathways, it is based on empirical bioethics, an emerging, yet likewise relatively recent development in the discipline of bioethics (39–41). A 2018 review presented an 18.1% prevalence of empirical studies in bioethics journals, with an approximately similar distribution of quantitative and qualitative methods. Most common methods were surveys and interviews, and the majority of data were collected in Western Europe. Roughly one third of the studies targeted healthcare professionals, and 13% targeted patients. Predominant topics included informed consent, end-of-life care, ethical theory, medical communication and ethics education. (39)

The primary argument of proponents for empirical bioethics is that not considering empirical data would eclipse personal, cultural and social realities, which inherently shape both the theories of bioethicists and the real-world application of theories (42–44). In fact, it is a well-established notion in social sciences, that empirical data informs theory development, and theory informs the design of empirical research (45), and sociological studies have proven valuable for bioethics in exposing the dynamics of ethics on personal, institutional or societal levels (14,43). Therefore, the initial step in bioethical argumentation is to establish accurate scientific facts before applying ethical concepts and values (9), and if bioethics is to serve as a bridge between biological facts and philosophical reflection, it is reasonable to conclude that bioethics should extend its scope to consider sociological and anthropological facts.

Despite the dynamic interaction of empirical data and theory in other scientific disciplines, bioethicists are cautious due to Hume's widely recognized is-ought law, which holds that descriptive claims (what *is*) cannot prescribe normative claims (what *ought* to be (46–49)). This concern is reinforced by Moore's naturalistic fallacy argument, the idea that moral goodness cannot be described with natural properties, and by the fact-value distinction, which asserts that a scientific discourse and an evaluative discourse are mutually exclusive (49). However, advocates of empirical bioethics downplay the significance of these fallacies, as scientific facts are indeed shaped by the field's values unless one recognizes the existence of an "Archimedean point" (perspective of objective truth), ethical theory is heavily influenced by empirical data or at the very least by the philosopher's rationale regarding society, and the idea of what *can* be would conceptually connect what *is* and what *ought* to be (50).

Kon distinguished the following categories of empirical studies which may contribute to bioethical theory: Lay of the land studies, Ideal versus reality studies, Improving care studies and Changing ethical norms studies (47). Lay of the land studies seek to describe existing practices and perspectives. Thus, this type of research helps most in identifying points where intervention or further research is necessary, to inform a stakeholder how similar stakeholders responded in a comparable case, or to inform one stakeholder group of the viewpoints of another stakeholder group (e.g., medical professionals and patients). Ideal versus reality studies utilize a normative ethical premise, seek to determine how closely practice aligns with this premise, and are often used to showcase that change is necessary in a certain domain. Improving care studies aim to test novel interventions identified as necessary in prior research, however a caveat is the substantial use of resources, which may not yield proportionate improvements in effectiveness. Finally, Changing ethical norms studies is an umbrella term for normative, philosophical studies which base their argumentation on prior empirical research in either one of the three previous categories. (47)

In another viewpoint on the contribution of empirical research in bioethics, Huxtable and Ives categorized three distinct roles: mapping, framing and shaping the ethical landscape (51). In this metaphor, mapping is the process of a primarily literature-focused exploration of what has been addressed and what remains unexplored. Framing refers to a deeper exploration of areas that could not be mapped accurately, or where mapping

revealed the need for further investigation. Generally, framing involves collecting and analyzing data on experiences and judgements of relevant stakeholders to determine where change is possible or required, or whether further research is needed. (51) Shaping the terrain, akin to Changing ethical norms studies, draws on the findings of previous research. (47,51).

Both previously described applications of empirical studies in bioethics concur on the interconnectedness of data and theory, yet they do not specify how to overcome Hume's is-ought law and the related fallacies (i.e., how changing ethical norms is justified based on collected data or how shaping the terrain is executed once mapped and framed) (47,51). A systematic review conducted in 2015 revealed merely 33 publications on methods that incorporate empirical data in bioethical theory development. The review distinguished dialogical approaches, where stakeholders and researchers collaboratively reach a conclusion that resolves an ethical problem, and consultative approaches, where researchers are "thinkers" who use the results of prior investigation. Consultative approaches were most prevalent, with reflective equilibrium as the comparatively most frequent method in this category (52). To put it briefly, reflective equilibrium consists of the iterative steps of forming moral judgements, identifying paramount ethical principles and theories, assessing the discrepancy between judgements and principles or theories, revising principles and theories, prioritizing principles. For a more detailed discussion of reflective equilibrium in a non-bioethical context, nonetheless with applicability to bioethics, please see: (53).

1.5. Oral health and orofacial esthetics

The World Health Organization (WHO) recognizes health in the context of function defined by sociocultural norms, as in the three-layered model of disease consequences. In this model *impairment* is the anomaly in structure, physiological function or psychological function, *disability* is the everyday behavior the individual with an impairment is constrained in carrying out, and *handicap* is the cultural, interpersonal, financial or environmental effect of an impairment or disability (54). It is noteworthy, that this model listed edentulism both with and without wearing prostheses as an impairment (54). Health is defined by the WHO as the state of physiological,

psychological and social well-being (55), while some argue for the inclusion of spiritual well-being (56). A similar theory was accepted by the Fédération Dentaire Internationale (FDI), defining oral health as a component of overall health, in which the craniofacial complex's functions (phonation, olfaction, gustation, mastication, deglutition, smiling, touching, conveying emotions) are carried out by the individual with confidence, while without pain, discomfort or disease (57). In addition, this theory recognizes factors driving oral health (biological, e.g., genetical traits, social and physical environment, health behavior, access to oral care), and moderating factors of oral health embedded in individual experiences and sociocultural impact (57).

Thus, while dentistry is etymologically derived from the Latin word *dens*, meaning tooth, the dentition should be understood at minimum as part of the masticatory system (58) and the broader craniofacial complex (57), with proven connections to a myriad of systemic conditions (59), and crucial roles in psychosocial function (57). However, beyond the physical functions listed in the FDI's oral health definition associated with significant psychosocial functions, orofacial esthetics may also be an independent factor contributing to general well-being, or a factor supplementing the confident execution of said functions. In a meta-analysis by Langlois et al. the perception of esthetic appearance was relatively consistent across cultures, age groups and sexes, and a more esthetic appearance could be linked to general better treatment by others, higher academic success, higher occupational success, higher popularity, a larger number of romantic and erotic experience, higher self-confidence and improved physical and mental health (60). When considering orofacial esthetics, a British study revealed correlation between one's tooth color and other's perception of their social skills, intelligence, psychological adjustment, satisfaction with interpersonal relationships and attractiveness, with images portraying individuals with whitened teeth receiving the most favorable scores, and images portraying individuals with decayed teeth receiving the least favorable scores (61). An Israeli study reinforced this finding by demonstrating that images portraying individuals with decayed teeth were perceived by others to possess poorer professional skills (success, education, intelligence, management abilities) and social skills (interestingness, truthfulness, pleasant personality, considerate personality, interpersonal warmness) (62). Furthermore, a study conducted among Chinese students in the United Kingdom indicated a link between no

decayed teeth, greater perceived self-esteem, and greater perceived intelligence, yet no association between decayed teeth and greater perceived popularity (63).

The importance of orofacial esthetics is recognized both by the wider public and by the dental profession. An American questionnaire showed that 37.3% of lay participants were dissatisfied with their dental appearance with tooth color being the primary reason, 13.8% have deliberately covered their dentition when smiling, and 13.1% have undergone tooth bleaching (64). On the other hand a survey of Quebecois dentists reported a frequency of tooth bleaching on three occasions a month on average (65), and a conceptual article by Spear and Kokich claimed that esthetical considerations including tooth inclination, arrangement, contour, shade, and gingival levels have become inevitable in treatment planning in contemporary dentistry (66).

In spite of the coherence among the aforementioned studies defining oral esthetics in terms of flawless (though often artificially improved) appearances as the mainstream view in Western society (67), certain trends within society may amend or overrule these ideas. As such, members of the hip hop subculture may favor the use of gold grills or gold artificial teeth (68), while others chose to adorn their teeth with dental jewelry (69), or undergo procedures as lip augmentation (70) or oral piercing (71). Additionally, diverse forms of oral modification are practiced in non-Western cultures, which are not always associated with esthetics, but occasionally to local identity, initiation rites, religious ceremonies, or perceived health benefits. Some of these body modifications are comparable to those observed in Western cultures, as the ndonya, a lip piercing fabricated out of wood by the Makonde people in Tanzania (72). However, oral modifications such as tooth coloring, removal of dental hard tissue and tooth extraction are also common. Unlike Western esthetic standards preferring white teeth, tooth blackening is conducted to distinguish humans from animals (e.g., dogs in Malaysia), or by the Jivaro people in Peru and Ecuador as it is believed to promote caries prevention, and in various parts of Southeast Asia as a symbol of maturation. (73)

Removing dental hard tissue creates shapes that convey symbolic meaning in several cultural contexts. For example, in native cultures in the Amazon Valley sharp maxillary central incisors represent the resemblance to piranha fish, thereby imitating a feared animal and expressing esthetic preference. In a similar manner, tooth sharpening is performed among Mentawai females in their puberty to appear more esthetic, and across

Cameroon, Congo, Guinea, Democratic Republic of the Congo and Uganda to achieve resemblance to crocodiles' dentition. (73) Apart from sharpening, a further type of dental mutilation is filing. In Bali, the maxillary six anterior teeth are filed to a uniform height supervised by Hindu priests. This ritual is rooted in the belief that these six teeth embody six sins (anger, lust, greed, lack of self-control, foolishness and jealousy), thus aligning the teeth's vertical dimension aids in combatting these sins (74).

As the previously described interventions, ritual and esthetic tooth extractions generally affect the anterior region of the dentition, often following culturally specific extraction patterns (73). The Maasai people of Tanzania and Kenya attribute benefits to tooth extraction for children, as they observed that bovine calves, which do not have canine teeth, do not suffer from the febrile and gastrointestinal illnesses that often affect human children. As a result, they traditionally believe that evil spirits reside in the canine tooth buds. Another theory explaining their practices extracting children's anterior teeth is that in case of trismus in tetanus, anterior teeth may impede breathing, which can be prevented by tooth extraction. (73,75,76) A study carried out in Northern Tanzania in 2016 reported an 18.1% prevalence of at least one missing mandibular incisor in adolescents (76), indicating that this remained a prevailing practice in the 21st century. An example of primarily esthetic tooth extraction is the Cape Flats Smile, a decades olds trend in the Cape Flats area of Cape Town, South Africa. A study published in 2007 observed that 41% of residents in a neighborhood in Cape Flats exhibited missing anterior teeth, with the most common tooth loss pattern being the absence of the four maxillary incisors. Participants' average age of undergoing tooth extraction was 16.8 years for males and 17.9 years for females. The most common reasons for extracting anterior teeth were peer pressure and fashion, followed by medical indication and identification with the gangster subculture. (73)

1.6. The Central Practice Values of Dentistry

A conceptual study by Alt-Epping and Nauck identified common sources of bioethical conflict if patients' wishes were not medically indicated, opposed medical goals, or were futile (77). Akin to this concept, Witter et al. provided illustrative cases of ethical dilemmas in dentistry with two types of disagreement between the dentist and patient in

treatment planning: intervention perceived as futile by the patient (e.g., dentist advising orthodontics despite patient's satisfaction with their dentition and facial profile) and intervention perceived as futile by the dentist (e.g., patient requesting radiographic imagery if it is cost-free, violating the "as low as reasonable" rule of radiography) (78). Ozar et al. described three models describing how patients' wishes may impact clinical decision-making for dentists: guild model (dentists are a member of a professional community who possess the knowledge to decide what benefits patients), agent model (dentists are employed by the patient to use their expertise in fulfilling the patient's goals), commercial model (dentists and patients are competitors in a marketplace, where treatment is the result of a mutual agreement), interactive model (dentists and patients are equal partners, however the dentist utilizes their expertise to serve the patient's oral health rather than competing with the patient) (79). Ozar et al. argue for that the latter model is ethical and propose the Central Practice Values (CPVs) of dentistry aligning with the interactive model as a guide to resolve ethical conflicts. (79) In its initial form published in 1988, the proposed hierarchy of values was as follows: 1) Life and health, 2) Appropriate and pain-free oral functioning 3) Preferred practice values (of dentists, which may vary and evolve), 4) Patient autonomy 5) Esthetic values 6) Cost 7) External factors (patient's lifestyle, social environment, social justice in resource distribution, public welfare and security, dentist's extraclinical responsibilities) (80). The most recent revision published in 2018 asserted the following hierarchy of values: 1) The Patient's Life and General Health, 2) The Patient's Oral Health (described as proper and pain-free function), 3) The Patient's Autonomy, 4) The Dentist's Preferred Patterns of Practice (preferences in dental chair, office layout, medication, instruments, materials, treatment philosophy, collaboration with staff), 5) Esthetic Values (dentist's interpretation of society's esthetic norms), 6) Efficiency in the Use of Professional Resources (namely dentist's expertise, time, energy, and physical resources) (79). Thus, a notable change is the ranking of patient autonomy above the value related to the dentist's personal preferences. The authors posited that the reason patient autonomy may not be prioritized over life, general and oral health is the obligation to do no harm. (79)

Rule and Veatch claimed that the CPVs do not serve their intended purpose (81). Their critique consists of challenging the individual ethical values and challenging the framework. They amend the concept of oral health and oral function with the notion that

it is a subjective concept influenced by the patient's age, general health, needs, perception of pain and possibilities of disease prevention. Furthermore, they asserted that in its current form, the CPVs does not account for the psychosocial health aspects of esthetics. They also questioned whether efficiency could be taken as an ethical value in and of itself, rather than a means to fulfil an ethics value. Subsequently, they raised the concern that this particular hierarchy of values reflects the perspective of its creators, while there is no indication of its acceptance within the dental community or the broader public. (81)

This discrepancy between the CPVs and real-life dental practice is indicated by studies conducted in Brazil, Afghanistan and the United Kingdom showing that patient request accounted as the primary factor for 0.5-7.5% of tooth extractions (79,82–85). Thus, it is plausible that tooth extraction is relatively frequently carried out lacking clear medical indication or being a medically suboptimal treatment option prioritizing patient autonomy.

2. Objectives

The objective of this thesis was to explore the ethical dilemma between patient autonomy and oral health in dentistry. With this aim in mind, the thesis sought to answer the following questions: What types of cases, judgments, and underlying ethical principles are present in the literature addressing the conflict between patient autonomy and oral health in dentistry? How and through the application of which principles dentists act in cases where a patient's request contradicts medical necessity? How and through the application of which principles patients make decisions when their choices do not align with medical necessity?

3. Methods

3.1. Review of relevant literature

Literature on the ethical conflict around patient autonomy and oral health was investigated with a scoping review published in BMC Medical Ethics (86). We opted for a scoping review, as this approach is described suitable for mapping a field, identifying what is available, clarifying concepts, and discover gaps (87).

Our sample consisted of search results carried out on the 28th of May 2023. As bioethics bridges philosophy and medicine, we used two databases incorporating a wide array of scientific disciplines (Scopus and Web of Science) and a database with specific focus on life sciences and medicine (PubMed) (88–90). We used the search terms *dent* AND ethic* AND autonomy AND health* and set all searches to only include articles written in English (with further settings in Scopus to refine search results to the publication stage *final* and source type *journal*, and in Web of Science to refine search results to document type *article* and *review article.)* Our search results are available at the project's public repository from Scopus[1], Web of Science[2], and PubMed[3]. After removing duplicates, two raters screened the articles at two levels. To ensure a balanced perspective between medical and social sciences (given the nature of bioethics) screening and subsequent data analysis were conducted by a medical anthropologist and the author of this thesis, a dentist. First, we removed publications to which reliable long-term access is not guaranteed via a DOI. Subsequently, titles and abstracts were screened employing the criteria that an abstract is available, the study discusses an intervention involving the oral cavity, the study discusses the inclusion of those undergoing the procedure in decision-making, and legal constraints are not present in providing informed consent (as in the case of minors). The researchers were instructed to screen the full text if a decision about inclusion could not be reached through the title and abstract. Screening results were triangulated among the two researchers and discrepancies were eliminated through social moderation.

Following the study selection process, we developed a coding scheme. The parent and grandparent codes (highest level of abstraction) were developed deductively, and were

[1] https://osf.io/qjfp7
[2] https://osf.io/w5vd9
[3] https://osf.io/ytksd

concepts that are suitable for Reflective Equilibrium (53), namely: *Case* (a context in which oral health and patient autonomy conflict), *Judgement* (the decision achieved in a case) and *Principle* (propositions, rules or ideas explaining a judgement). Parent and grandparent codes also aided data segmentation, as separate text files were created for each of these three codes, to which the article segments representing the respective code was extracted to. The researchers carried out free, inductive coding for each text file with the Interface for the Reproducible Open Coding Kit[4] (91). The researchers triangulated their codes and created a common tentative codebook. With this codebook, the researchers individually coded the text files with the instruction to make necessary modifications in the codebook (create new codes or modify definitions of existing codes). After another process of triangulation, the researchers repeated the test-coding with the novel codebook to approve it for final coding, which was performed by the author of this thesis. The codebook listing the grandparent, parent and child codes, their definitions and examples are presented in Tables 1, 2 and 3.

Table 1. Codebook of grandparent code Case in the scoping review.

Grandparent code	**Parent code**	**Child code**	**Definition**	**Example(s)**
Case *A situation where the decision of an individual concerning a procedure targeting their oral cavity or surrounding tissues is described to be not (the most)*	Case nature *The reason for or circumstances of the patient's request*	Sociocultural	Request for intervention due to adaptation of sociocultural norms (e.g., esthetic ideals, rituals, local identity)	Cosmetic preferences oppose bodily integrity; Nuer people's local rituals involving tooth extraction
		Personal experience	Request based on personal reasons	Dental care phobia;

[4] https://i.rock.science/

beneficent for the integrity or function of the oral cavity			as opposed to sociocultural norms	Disorders of self-perception
		Authority	Intervention is proposed by the government, a practitioner, patient's relatives, etc.	Artificial water fluoridation
		Not specified 1	The presence of the case with no details describing the circumstances or reasons	General descriptions of cases
	Procedure *The procedure (treatment or intervention alternative) in a case*	Extraction	Patient request for tooth removal	Patient requests the removal of all their teeth
		Prevention	Intervention aiming to prevent oral disease from developing or aggravating. The aim to prevent more invasive treatment.	Artificial water fluoridation; Oral hygienic care for geriatric patient
		Not specified 2	The presence of the case with no details of the procedure	General descriptions

Table 2. Codebook of parent code Judgement in the scoping review.

Parent code	Child code	Definition	Example(s)
Judgement *A decision that has been made in a case*	Beneficial option	Decision that does not align with the patient's request	A practitioner does not fulfil the patient's request to remove all their teeth
	Respecting autonomy	Allowing individuals to choose a desired option and granting their request	Claiming the caveat emptor principle; Arguing for patient autonomy
	No definitive decision	Postponing the decision	Referring patient with an irrational request to psychiatric consultation; Persuading the patient to opt for a different treatment alternative

Table 3. Codebook of parent code Principle in the scoping review.

Parent code	Child code	Definition	Example(s)
Principle *Ideas, rules, propositions which explain the judgement(s)*	Professional imperative	Recognizing the standards, customs or habits stemming from "the profession" or from academia	Describing not medically indicated decisions and "excuses"; Not considering non-scientific opinions; Comparing cosmetic dentistry to hair salons

	Standard care	Standards recognized by both the wider public and the profession, including the given sociocultural or legal environment	Legal reasons for a certain course of action; Avoiding action due to fear of legal backlash.
	Impact	The impact of an intervention is weighed to determine whether it is ethically acceptable	Emphasizing that tooth extraction is irreversible; Comparing oral epidemiology in areas with and without artificial water fluoridation; Advocating minimally invasive treatment
	Patient needs	References to any type of benefit for the patient; Emphasis to do no harm; Acts of paternalism	Unethicality of extracting teeth when medically not indicated; Claiming that the ethicality of an action is based on the diagnosis
	Plurality	Acknowledging alternative moral systems, ideals, habits; Including plurality of groups and individuals	Comparing ritual tooth extraction performed by the Nuer people to tooth extraction performed prior to orthodontic

			interventions in Western societies; Locality Rule in the USA; Claiming that if one dentist refuses extraction, a different dentist will grant the patient's request
	Individual decision-making	Acknowledging individual freedom of choice, individual responsibility for health, or body identity	Emphasizing patient autonomy; Claiming tooth loss to be the individuals' responsibility; Describing the oral cavity as an intimate area

The coded dataset was synthesized via thematic analysis, for which the author of this thesis reviewed the dataset to identify code patterns to create theme drafts, and refining them with constant comparison (92). Themes were created within the parent and grandparent codes *Case*, *Judgement* and *Principle*, as well as across these higher-level codes. The themes were validated by the researchers through social moderation.

3.2. Narratives of dentists and patients

To explore the dentist and lay insights of the researched ethical dilemma, we adhered to a constructivist paradigm to accommodate the alternative narratives and employed the Interpretative Phenomenological Approach (IPA). IPA has three pillars: *phenomenology* (which can be further divided into descriptive and interpretative phenomenology), *hermeneutics* and *idiography*.

Phenomenology is the study of lived experience. When describing other's lived experience, the researchers should detach themselves from their own previous experience (e.g., the knowledge gained from previous cases in the research) and revisit the phenomenon under investigation rather than instantaneously ordering them in a pre-determined classification system. The interpretative function of phenomenology acknowledges that the interpreter is inherently influenced by their own perspective, a phenomenon is experienced differently by the researcher and the participant, and meaning is constantly evolving for both the researcher and the participants. (93)

Hermeneutics addresses the theory of interpreting phenomena. This aspect of IPA confirms that while interpretation should aim for objectivity (grammatical interpretation), the researcher's individuality is an attribute of the interpretation (psychological interpretation). Thus, when analyzing the data, the researcher is carrying out a "work of art" in making meaning based on what the participants articulated, and beyond what they articulated. This involves engagement with the data with one's preconceptions, allowing this engagement to bring preconceptions to surface and allowing the data to shape the preconceptions. (93)

The third pillar of IPA, idiography refers to the researcher's relation to the particular cases in the study. This involves a comprehensive systematic analysis of the data, in which a smaller study sample is selected to discover flaws in prior theory and / or create a tentative theory, which is then tested on another study sample and modified accordingly. In the view of IPA, development of the theory with further cases will always be possible, although claims that a thorough analysis of particular cases yields to generalizable conclusions. (93)

In the following, the thesis elaborates the implementation of IPA for our research (94).

The study sampled dentists and laypersons (patients) living in Hungary, since the respect for patient autonomy involves both groups. We utilized non-proportional quota sampling. In the dentist subsample, quotas were based on leadership experience and sex. Leadership experience was determined as leadership of a private clinic with subordinate dentists, leadership of a university unit, dental officers, associate leaders of public dental care, leadership experience in the Dental Department of the Hungarian Medical Chamber or leadership experience in the Council or Department of Dental and Oral Diseases of the Professional Medical Board. We implemented the stratum sex due to Carol Gilligan's

theory claiming that masculine and feminine perceptions of moral judgement is often different (20). Patients were stratified based on sex and age, as previous literature found connection between these factors and satisfaction with one's orofacial esthetics (95,96). The inclusion criteria for dentists were having completed accredited specialty training, having a minimum of 10 years professional experience, and having gained professional experience in the private and public sector. Dentists who did not meet all the inclusion criteria were excluded from the research. The inclusion criterion for patients was experience with any of the following scenarios: refusing a treatment plan provided by a dentist or requesting an intervention without corresponding medical diagnosis. Patients were excluded if they were legally impaired (e.g., minors), if they possessed qualifications related to dentistry (dentists, dental assistants, dental hygienists, dental technicians, maxillofacial surgeons). Dentists were recruited via publicly available contact information, and snowball sampling to include further dentists and patients eligible for the research after their treatment plan was completed. Final sample sizes were determined with theoretical saturation. We collected data via a self-developed sociodemographic survey and semi-structured interviews between March 2023 and November 2024. Two parallel interview guides were developed for the two subsamples, each covering the following topics: 1) Ranking the CPVs and reflecting on their utility (79), 2) Personal experience with the challenge of respecting patient autonomy in dentistry, 3) Reflecting on a case from literature of a 35 year old female patient who refuses an exhaustive treatment plan (including endodontic, periodontic and restorative treatments) to save teeth with good and questionable prognosis, who instead requests the extraction of the compromised teeth (81), 4) Evaluating dental interventions that only serve esthetic enhancement 5) Patient trust in dentists and patient attitude seeking prosthodontic treatment from dental technicians. The English translation of our data collection tools is accessible at our public repository[5]. The interviews and the responses to the sociodemographic survey questions were audio-recorded and transcribed verbatim by the author of this thesis. During transcription, names of persons (except the author of this thesis), names of clinics, names of institutes and departments, names of organizations, and information referring to location (e.g., the county supervised by a chief dental officer) were anonymized, thereby remaining unknown to other researchers in the project.

[5] https://osf.io/wk2yp

Codes were developed through a guided-inductive process. Once again, to ensure a balanced perspective between medical and social sciences (given the nature of bioethics) coding was conducted by an anthropologist and the author of this thesis, a dentist. The two coders individually coded sentences of 10% of the data with the Interface for Reproducible Open Coding Kit (iROCK)[6]. A codebook created from the CPVs was used, supplemented with an "Other" code to identify constructs not listed in the CPVs. The coders were instructed to modify the code labels, code definitions, and disaggregate the "Other" code as necessary. The coders triangulated their results to establish a tentative code structure, which was deductively tested using another 10% of the data. Following further rounds of triangulation and testing, the coders agreed on a final codebook, presented in Table 4.

Table 4. Codebook of patient and dentist narratives displaying the codes' relation to the Central Practice Values.

Code name and label	Central Practice Value	Definition	Example
Well-being [[Wellbeing]]	Patient's life and general health	Physical, mental or social well-being	A treatment outcome boosting the patient's confidence
Medical indication [[Indication]]	Patient's oral health	Appropriate and pain-free function of the oral cavity and surrounding tissues	Extracting a carious wisdom tooth that could potentially cause further issues
Patient autonomy [[PatAut]]	Patient autonomy	Treatment decisions made based on patient's own beliefs, goals, and values;	Dentist allowing the patient to choose an esthetic intervention
Esthetics [[Esthetics]]	Esthetic values	Esthetic standards of individuals or the wider community	Patient requesting replacing amalgam fillings due to their color

[6] https://i.rock.science

Beneficence [[Beneficence]]	Other (Novel code)	Desire to fulfil "what is in best interest" of the patient; Desire to preserve the patient's health or bodily integrity	Dentist persuading the patient with an abscess to give consent to a tooth extraction
Professional autonomy [[ProfAut]]	Other (Novel code)	Considering the dentist's personal set of values, practice patterns; The dentist's personal responsibilities	Dentist rejecting patient request due to personal convictions
Laws and rules [[Law]]	Other (Novel code)	Choosing a course of action in accordance with the laws governing dental practice; Including reference to quackery	Dentist carrying out a patient request if they sign a form
Feasibility [[Feasible]]	Other (Novel code)	Weighing the constraints of a desired treatment outcome; What is realistic; What is modern or outdated	Patient acknowledging that modern medicine provides opportunities to treat teeth instead of extracting teeth
Informing [[Inform]]	Other (Novel code)	Decision made based on access to information; Informing patients without the intent to convince them; Patient desire to be fully informed	Patient rejecting an intervention based on possible risks outlined by the dentists
Patient comfort [[Comfort]]	Other (Novel code)	Minimizing the number of sessions, time spent at	Patient experiencing emotional distress

		the dental office, fear (of the treatment, not of dentists in general), or inconvenience prior, during or after the intervention	caused by an intervention
Finance [[Finance]]	Other (Novel code)	Decision based on financial considerations	Patient assuming any treatment is possible if one can afford it
Plurality [[Plurality]]	Other (Novel code)	Acknowledgement of multiple moral systems; Including: Dentist and patient viewpoints, cultural differences	Dentist stating that if they decline a patient's request, another dentist will likely agree to perform the treatment
Needs [[Needs]]	Other (Novel code)	Morality of an intervention differs on the specific circumstance in which it occurs	Dentist fulfilling esthetic requests for a bride's wedding
Health attitude [[Attitude]]	Other (Novel code)	Evaluating the feasibility of a treatment based on oral hygiene or regular check-ups	Dentist recommending a different treatment strategy to a patient with insufficient oral hygiene
Prestige [[Prestige]]	Other (Novel code)	Confidence towards the dentist or medicine as a whole; Public perception of dentistry and medicine	Patient stating that the choice of dentist is a matter of confidence
Triangulation [[Tri]]	Other (Novel code)	Weighing others' opinions	Patient requesting an intervention because it

			was promoted or undergone by a celebrity
Personal experience [[Exp]]	Other (Novel code)	Decisions informed by prior events where participants were directly involved or had observed others	Patient expressing greater trust in younger dentists after experiencing issues with a filling placed by an older dentist
Minimally invasive [[Minimal]]	Other (Novel code)	Opting for the alternative that involves less damage to tissues or structures	Dentist prioritizing preventive interventions

For data analysis, we employed Epistemic Network Analysis (ENA), a unified qualitative-quantitative method that quantifies the co-occurrences of qualitative codes. ENA demands a tabularized dataset, for which purpose we segmented data by sentence (one line of data) with the Reproducible Open Coding Kit {rock} R package[7], which assigned each line of data a unique identifier (UID, utterance identifier). The rows of the tabularized dataset were the lines of data and their UIDs, the columns were the unique identifier of the participant (case identifier), the sociodemographic variables and the codes. In the latter two categories 0 represented the lack of the variable or code and 1 represented the presence of the variable or code. Table 5 shows the tabularized dataset simplified with two lines of data translated to English by the author of the thesis. ENA[8] used the table to create a matrix of pairwise code co-occurrences within the selected data segment (conversation). In our settings, the conversation was each individual interview (case), in which code co-occurrences were determined in a moving stanza window consisting of two lines of data, meaning that codes co-occurred, if they appeared in the same sentence or the subsequent sentences. This matrix is represented by vectors in a high-dimensional space (each vector matching each possible pair of code co-occurrence).

[7] https://rock.science
[8] https://www.epistemicnetwork.org

As the vectors consist of different amounts of data, they are normalized by being divided by their own length, thereby matching the relative frequency of each code co-occurrence. Furthermore, as the visualization is necessarily two-dimensional, the vectors are reduced dimensionally via means rotation along the X axis and singular value decomposition along the Y axis.

Table 5. Simplified tabularized dataset with illustrative examples of lines of data.

Line of data (Utterance)	**Case ID**	**Subsample**	**Sex**	**Feasibility**	**Indication**	**Attitude**
[[uid=7xzrxxb6]] We cannot say, especially in case of endodontic interventions, that it is 100 percent that this tooth will remain until the end of their life.	Case1	dentist	female	1	0	0
[[uid=7xzrxxbl]] And indeed in many cases we experience that the tooth with a crown lasts longer than without preparation, because they don't clean their teeth.	Case1	dentist	female	0	1	1

ENA offers two types of data models, epistemic networks and projection space. Epistemic networks consist of nodes (representing codes) and edges connecting the nodes (representing the co-occurrence of codes). The size of the nodes corresponds to the relative frequency of co-occurrences with other codes, while the thickness and saturation of network edges quantify the relative frequency of the specific code co-occurrence. Epistemic networks can be generated for every level of data segmentation, however for our aims we analyzed mean epistemic networks of the subsamples (dentists and patients). The projection space encompasses the entire dataset, in which circles (plotted points) represent the networks of each conversation (in our case each individual interview), and squares represent units (mean groupings of conversations, in our case dentists and patients). In this visualization, the locations of nodes and plotted points are mutually

informative. Firstly, the proximity between networks indicates similarity between code co-occurrence patterns, and proximity between networks and codes indicates the code's co-occurrences to be more specific for that network. Secondly, the position of networks and codes along the X axis (determined by means rotation) is informative on the difference between group means, whereas the position of networks and codes along the Y axis (determined by singular value decomposition) is informative on the differences within the group. The units are surrounded by their 95% confidence interval depicted with dashed lines. Furthermore, the projection space contains a subtracted network, which is computed by subtracting the weight of connections in the mean epistemic network of unit from the equivalent connections in the mean epistemic network of the other unit. For a more detailed elaboration of ENA, please see: (91,97–100).

In the following sections, codes and themes will be presented in italics. Interview excerpts, translated to English by the author, will be displayed in italics and enclosed within quotation marks.

The study obtained ethics approval from the Medical Research Council's Scientific Research Ethics Committee (Egészségügyi Tudományos Tanács Tudományos és Kutatásetikai Bizottság). Reference number for the approval is BMEÜ/3278- 1 /2022/EKU.

4. Results

4.1. Review of relevant literature

4.1.1. Attributes of the dataset

While our search results yielded a total of 286 publications, after screening them, we included 11 publications. The selection of studies is illustrated in Figure 1 adopting the template of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) (101).

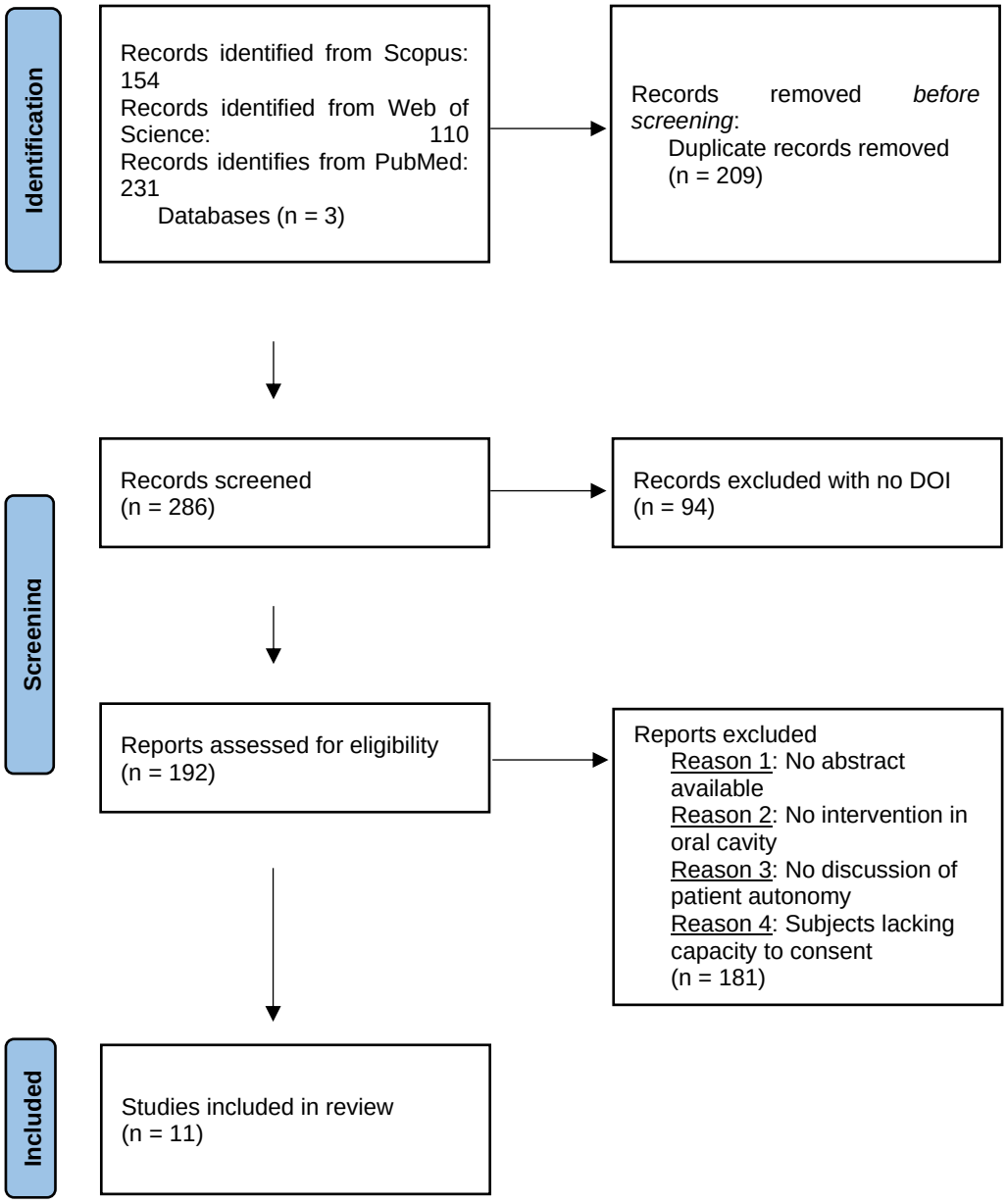

Figure 1. Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flowchart depicting the study selection. (Own figure created with the template of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (101)*)*

The publications included in the scoping review were published between 1988 and 2022. Eight publications appeared in dental journals (four of which were published in The Journal of the American Dental Association), while the other three publications appeared in a bioethical journal, an agricultural ethical journal and a geriatric nursing journal. Six publications were theoretical, meaning that they did not collect and analyze empirical data. The five empirical studies included three studies collecting data from dentists (102–104), one study collecting data from nurses (105), and one study collected data from patients (106). Attributes of the included publication is listed in Table 6.

Table 6. Attributes of publications included in the scoping review.

DOI	Journal	Year of publi-cation	Study design	Relevant ethical dilemma	Resolution of the ethical dilemma
10.14219/jada.archive.1988.0040	The Journal of the American Dental Association	1988	Theoretical	Patients' esthetic ideals conflict with dentists' professional standards	Carrying out interventions only in adherence to professional standards of care
10.1111/j.1754-4505.1995.tb00482.x	Special Care in Dentistry	1995	Empirical (qualitative)	Dentists reporting experiencing conflict between patient autonomy and dilemmas	Some dentists adhere to an "autonomy model", while other dentists adhere to a

				between nonmaleficence and patient autonomy	"beneficence model"
10.14219/jada.archive.1997.0235	The Journal of the American Dental Association	1997	Theoretical	Patient with periodontitis requesting extraction of all teeth and fabrication of complete dentures due to sensitivity and dissatisfaction with appearance	No definitive resolution of the ethical dilemma
10.1111/j.1834-7819.2002.tb00336.x	Australian Dental Journal	2002	Empirical (quantitative)	Granting (unspecified) patient request if the dentist disagrees with the request	Majority of dentists believed the request should not be granted
10.1038/sj.bdj.2010.769	British Dental Journal	2010	Theoretical	Patients requesting medically not indicated esthetic interventions	Patients should be able to make informed requests, while dentists

					may refuse them
10.14219/jada.archive.2010.0139	The Journal of the American Dental Association	2010	Theoretical	Various scenarios of patients requesting tooth extraction without medical indication	Focusing on the patient's motivation without granting their request; No definitive answer for patients with body integrity identity disorder
10.1093/phe/phs016	Public Health Ethics	2012	Theoretical	Artificial water fluoridation	The added beneficial value of artificial water fluoridation does not ethically justify the procedure
10.1007/s10806-017-9658-7	Journal of Agricultural and Environmental Ethics	2017	Theoretical	Artificial water fluoridation	Consuming fluoridated water should remain a personal choice

10.1111/opn.12189	International Journal of Older People Nursing	2018	Empirical (qualitative)	Geriatric patients often refuse aid with oral health routine	Coercion is not acceptable
10.4103/jiaphd.jiaphd_8_20	Journal of Indian Association of Public Health Dentistry	2021	Empirical (quantitative)	Following prescribed (unspecified) treatment plans when in disagreement with the practitioner	Majority of patients deemed that following the prescribed treatment plan is necessary
10.1016/j.adaj.2022.01.008	The Journal of the American Dental Association	2022	Empirical (quantitative)	Patient request for tooth extraction without medical indication	Majority of dentists granted the patients' requests.

4.1.2. Themes

Themes are listed in Table 7.

4.1.2.1. Themes within Case

Autonomous requests for extraction is characterized by the patient asking for tooth extraction despite what their dentist believes to be the optimal solution. In these cases, the source of the conflict lies in differing interpretations of beneficence, as patients' and dentists' views diverge on what constitutes the patient's best interest. The sources discussed hypothetical cases, in which patients' motivations included tooth extraction as a simple alternative of more comprehensive treatment in all sources (102,107,108), as

replacing sensitive and esthetically unsatisfying teeth with an esthetic restoration (107). Broers et al. describe further cases, in which patients may be motivated by financial reasons, fear of dental treatment (thus requesting a rapid solution), cultural reasons (e.g., ritualistic tooth extractions or Cape Flats smile) and mental disorders with possible orofacial manifestations, as somatoform pain disorder, body dysmorphic disorder, and BIID (108).

Health promotion considered cases where patients undergo primary dental prevention, specifically, through the government imposing artificial water fluoridation denying the population the choice to access non-fluoridated municipal water (109,110), or relatives of geriatric patients requesting carrying out oral hygiene routines by coercion (105).

4.1.2.2. Themes within Judgement

Reviewing options meant both options (granting or rejecting the patient's request deemed harmful from a professional perspective) were evaluated, indicating the lack of a universally accepted and/or straightforward resolution of the researched ethical dilemma. This theme occurred as data collected from dentists (102) or patients (106) was aggregated, as the views within the sample were not homogenous. Furthermore, this approach was also present in theoretical articles, representing the authors' argumentation (108,111).

First, do no harm argued against granting harmful patient requests, rather implementing strategies as further elaborating the possible negatives outcomes and postponing treatment to allowing the possibility that the patient may reconsider. If such strategies were not feasible, based on this theme to decision was to decline the patient's request. (104,107)

4.1.2.3. Themes within Principle

Shared decision-making recognized beneficence as the obligation to preserve the dentition, and patient autonomy as the patient's involvement in this pursuit. Thus, while both principles are recognized, the theme was more paternalistic, as it prioritized beneficence over patient autonomy. (103,107,108,110,111)

Limits for autonomy employed a less paternalistic approach than Shared decision-making. Although both themes shared the core of prioritizing the preservation of the dentition, it did allow granting the patient's requests within theoretical boundaries, such as the invasiveness and reversibility of the procedure, the sustainability of the treatment outcome, and potential risks associated with the procedure. (104,107,109–111)

4.1.2.4. Themes across parent and grandparent codes

Professional ideals over society's ideals referred to cases, where the patient's requests adhered to certain societal standards conflicting medical standards. Furthermore, although the patient's views were weighed, the sources argued against granting the patient's request. (104,107,108,111) Examples include esthetic dentistry (107) and ritual tooth extractions among the Nuer and Dinka peoples in South Sudan (108).

Autonomy in need for prevention encompassed the cases of the theme *Health promotion* with the normative evaluation of these cases that patients should not be provided preventive care if they do not request it (105,109,110). The source investigating coercion of geriatric patients also highlights another aspect of patient autonomy than the duty to obtain (informed) consent for medical procedures, that the oral cavity is an especially private and intimate region (105).

Table 7. Themes within grandparent and parent codes and overarching grandparent and parent codes.

Parent or grandparent code of theme	**Theme**	**Code co-occurrences constituting the theme**	**Relevant publication DOIs**
Case	Autonomous request for extraction	Personal Experience, Extraction	10.1016/j.adaj.2022.01.008 10.1038/sj.bdj.2010.769 10.14219/jada.archive.1997.0235
	Health promotion	Authority, Prevention	10.1093/phe/phs016 10.1007/s10806-017-9658-7 10.1111/opn.12189

Judgement	Reviewing options	Beneficial option, Respecting autonomy	10.1111/j.1834-7819.2002.tb00336.x 10.1038/sj.bdj.2010.769 10.14219/jada.archive.2010.0139 10.4103/jiaphd.jiaphd_8_20
	First, do no harm	Beneficial option, No definitive decision	10.14219/jada.archive.1997.0235 10.1016/j.adaj.2022.01.008
Principle	Shared decision-making	Patient needs, Individual decision-making	10.1111/j.1754-4505.1995.tb00482.x 10.14219/jada.archive.1997.0235 10.14219/jada.archive.2010.0139 10.1038/sj.bdj.2010.769 10.1007/s10806-017-9658-7
	Limit for autonomy	Individual decision-making, Impact	10.1016/j.adaj.2022.01.008 10.14219/jada.archive.1997.0235 10.1093/phe/phs016 10.1007/s10806-017-9658-7 10.1038/sj.bdj.2010.769
All parent codes	Professional ideals over society's ideals	Sociocultural (Case), Beneficial option (Judgement), Patient needs (Principle), Individual decision-making (Principle)	10.1016/j.adaj.2022.01.008 10.14219/jada.archive.1997.0235 10.14219/jada.archive.2010.0139 10.1038/sj.bdj.2010.769

	Autonomy in need for prevention	Authority (Case), Prevention (Case), Respecting Autonomy (Judgement) and Individual decision-making (Principle)	10.1111/opn.12189 10.1093/phe/phs016 10.1007/s10806-017-9658-7

4.2. Narratives of dentists and patients

4.2.1. Attributes of the dataset

Our sample consisted of 14 dentists and 10 patients. The mean age of the dentist subsample was 48.5 (ranging from 35 to 74), while the mean age of the patient subsample was 45.5 (ranging from 28 to 78). Interventions advised by dentists but refused by patients were extraction of asymptomatic teeth and fabrication of (removable) dental prosthesis. Patient requests without corresponding medical diagnosis were tooth preparation for a crown for esthetic reasons, replacing amalgam fillings with more esthetic composite resin fillings, vital tooth bleaching and reducing the vertical dimension of maxillary central incisors and canines. Further attributes of the sample are summarized in Table 8. As dentists in leadership roles could become identifiable when attributes are aligned, therefore the author of this thesis intentionally avoided reporting the attributes of individual participants. To maintain consistency, and since our research objectives are describing groups rather than individuals, the same approach was applied for the entire sample.

Table 8. Summary of participant attributes.

Subsample	*Attribute*	*Categories within an attribute*	*Number of participants (including overlaps)*
Dentists	Sex assigned at birth	Male	N=8
		Female	N=6
	Specialty training	Prosthodontics and / or Prosthodontics and conservative dentistry	N=11
		Dental and oral diseases	N=7
		Oral implantology	N=7
		Dentoalveolar surgery	N=3
		Periodontology	N=1
		Orthodontics	N=1
	Leadership experience	University clinic	N=6
		Private clinic overseeing subordinate dentists	N=5
		Professional organization (total)	N=7
		Professional organization (dental officer)	N=5
		Professional organization (associate leaders of public care)	N=2

		Professional organization (leadership in the Dental Department of the Hungarian Medical Chamber)	N=2
		Professional organization (leadership in the Council or Department of Dental and Oral Diseases of the Professional Medical Board)	N=1
		No leadership experience	N=4
Patients	Sex assigned at birth	Male	N=4
		Female	N=6
	Age group	Below 35 years old	N=4
		35 to 65 years old	N=4
		Above 65 years old	N=2
	Highest level of education	Tertiary	N=8
		Secondary	N=1
		Primary	N=1
	Self-assessed financial status	Monthly income sufficient to frequently save money	N=4
		Monthly income sufficient to	N=5

		occasionally save money	
		Monthly income usually not sufficient to save money	N=0
		Did not answer	N=1
	Decisions contradicting medical indication	Refusal of an intervention	N=7
		Request for an intervention	N=3

4.2.2. Mean epistemic network of dentists

Figure 2 depicts the mean epistemic network of dentist narratives. The codes in the network with the highest relative frequencies of co-occurrence were *Medical indication, and Patient autonomy,* with further significant codes including *Esthetics*, *Informing* and *Finance.* Although the network was densely connected, the strongest connections were observable between *Informing* and *Patient autonomy* and between *Medical indication* and *Esthetics.*

The co-occurrence of *Informing* and *Patient autonomy* indicated that dentists offer patients the opportunity to make informed decisions about their oral health, for which dentists are willing to provide information mitigating the asymmetry in expertise and knowledge. This reflects the act of empowering patients, which also implies transferring a portion of responsibility to them. As a dentist remarked, "*I don't think cosmetic dentistry is the real problem of dentistry, but if the patient wants that, they know the consequences, the advantages, the disadvantages, in that case we may carry it out.*" A further comment was "*I give them all the information and they can choose what their heart desires".* On the other hand, the co-occurrence of *Medical indication* and *Esthetics* suggested that dentists preferred performing interventions that are beneficent for the patient's oral functions (primarily physical functions). However, they recognized that the compromise in physical function is often accompanied by an impairment in esthetic appearance, which

may be more significant for the patient. Thus, in these cases the same intervention enhances both oral health and esthetic appearance. This concept is illustrated by the following quote from a dentist, "*Esthetics arise, since teeth move away in a fan-like position [after tooth extraction, the teeth may occupy the edentulous space, creating gaps, metaphorically as a handheld fan is unfolded] and the patient won't be able to apply [masticatory] forces, can't use them normally and can't eat."* In a comment of another dentist opting for both an esthetically and functionally optimal solution, "*So if the patient would like an all-on-four type prosthesis [fixed prosthesis anchored of four dental implants] it is easily the case that with the all-on-four type prosthesis, we cannot restore facial harmony, so we cause an esthetic complication (...) wearing a traditional [removable] complete denture [that restores bone loss with artificial gingiva] would be satisfactory.*"

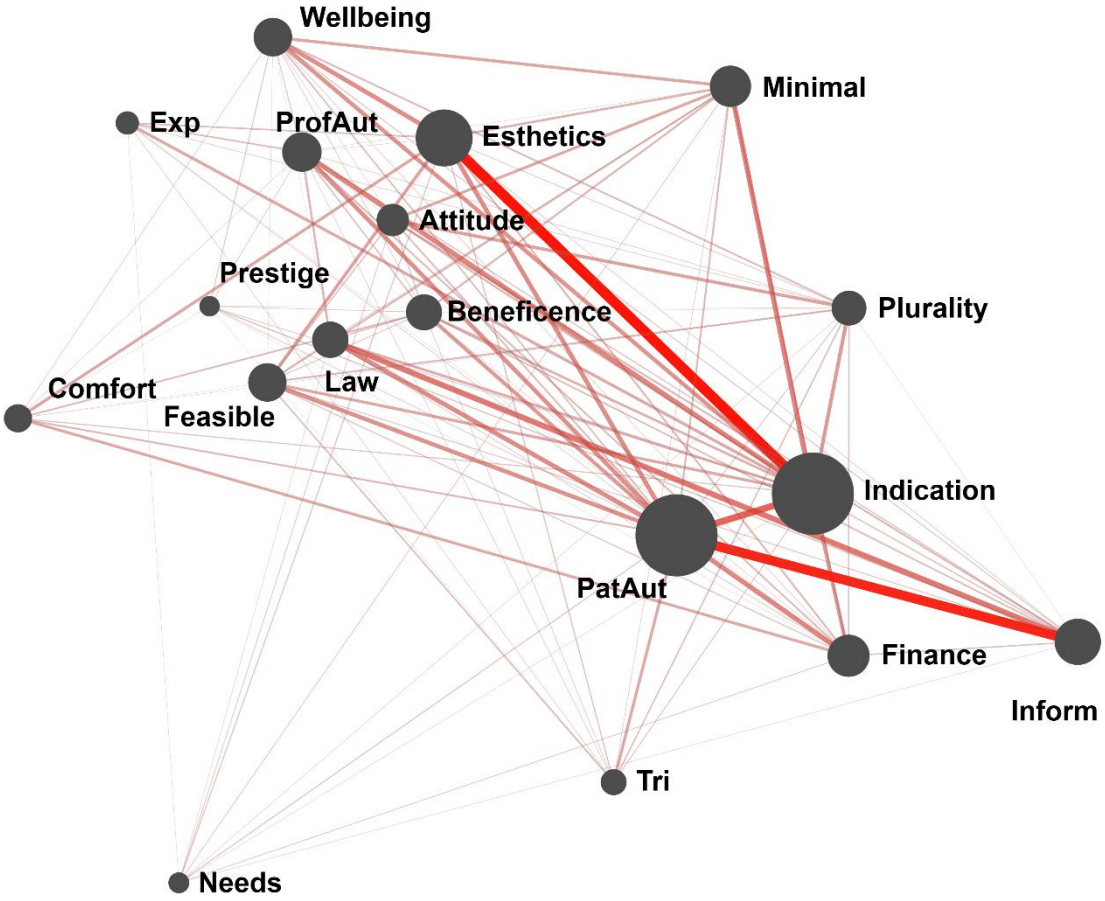

Figure 2. Mean epistemic network of the dentist subsample. Codes are represented by the nodes of the network (black circles). The size of each node reflects the relative frequency of the code's co-occurrences with other codes. The relative frequency of co-occurrence

between specific pairs of codes is indicated by the thickness and saturation of the edges (lines) between nodes. (Own figure.)

4.2.3. Mean epistemic network of patients

Figure 3 depicts the mean epistemic network of the patient subsample. The network was densely connected akin to the dentist's mean epistemic network, however the most significant nodes (*Esthetics, Comfort, Finance, Patient autonomy, Informing)* are not as predominant as the largest nodes of the dentist network. On the other hand, a handful of codes, such as *Law, Plurality, Health attitude,* or *Professional autonomy* exhibited insignificant relative frequency of co-occurrences. The strongest connections were displayed between *Medical indication* and *Comfort, Comfort* and *Personal experience, Esthetics* and *Needs* and between *Esthetics* and *Well-being*.

The co-occurrence of *Medical indication* and *Comfort* indicated the request for dental intervention associated with discomfort. For instance, a patient elaborating the reason for refusing extraction of a wisdom tooth proposed by the dentist said, "*The upside would be obviously that my teeth are crowded, that I know, and I see, I feel that it is harder to clean in between, but I am not convinced that I don't know, that the state of my teeth would be different (…) or I don't have any pain.*" Another patient commented the following on trusting a dentist, "*After all, let's say that I go to the dental office with a toothache, if it is properly diagnosed, and a solution is suggested for the problem, and if it works, that obviously works like a good letter of recommendation (…)*."

Comfort and *Personal experience* on the other hand signified patient's willingness to engage in dental treatment based on discomfort related to their oral cavity in their previous experience. Experiencing the discomfort being resolved at the dentist shifted patient views to potentially undergo further interventions, as a patient who refused the extraction of a tooth, however posited the following counterargument to their choice, "*I am scared, I've had so much toothache [in the past], the whole thing has hurt so much."*

Another patient recalled an occasion when they perceived their autonomy to be restricted, as "*I have a missing tooth, and for example that was a tooth extraction where I had no choice really, because when a person's tooth hurt, it drives them crazy [and the dentist did not offer a solution to save the tooth]".*

The co-occurrence of *Esthetics* and *Needs* implied different esthetic standards for various situations. Nonetheless, patients did not consider themselves to be in situations warranting enhanced orofacial esthetics at the time of the interviews. For example, a patient stated when asked about tooth bleaching, "*I am very much satisfied [esthetically] after getting tartar removed, but if let's say at a very-very old age, perhaps my teeth are like ugly yellow."* Another patient posited their young age to be a contraindication for esthetic veneers and crowns as follows, "*I would love to have a smile so beautiful, but a current state is not worth it (...) So to have a beautiful smile in the present, and when I'm old I can't bite an apple".*

Conversely, in the co-occurrence of *Esthetics* and *Well-being* patients linked orofacial appearance to both physical and psychosocial well-being. A patient described a newly received dental bridge as "*it gave me an extra present for my life, it is beautiful".* Another patient noted, "*These two [esthetics and health] are related, because if it is healthy, then it looks good and should look good."*

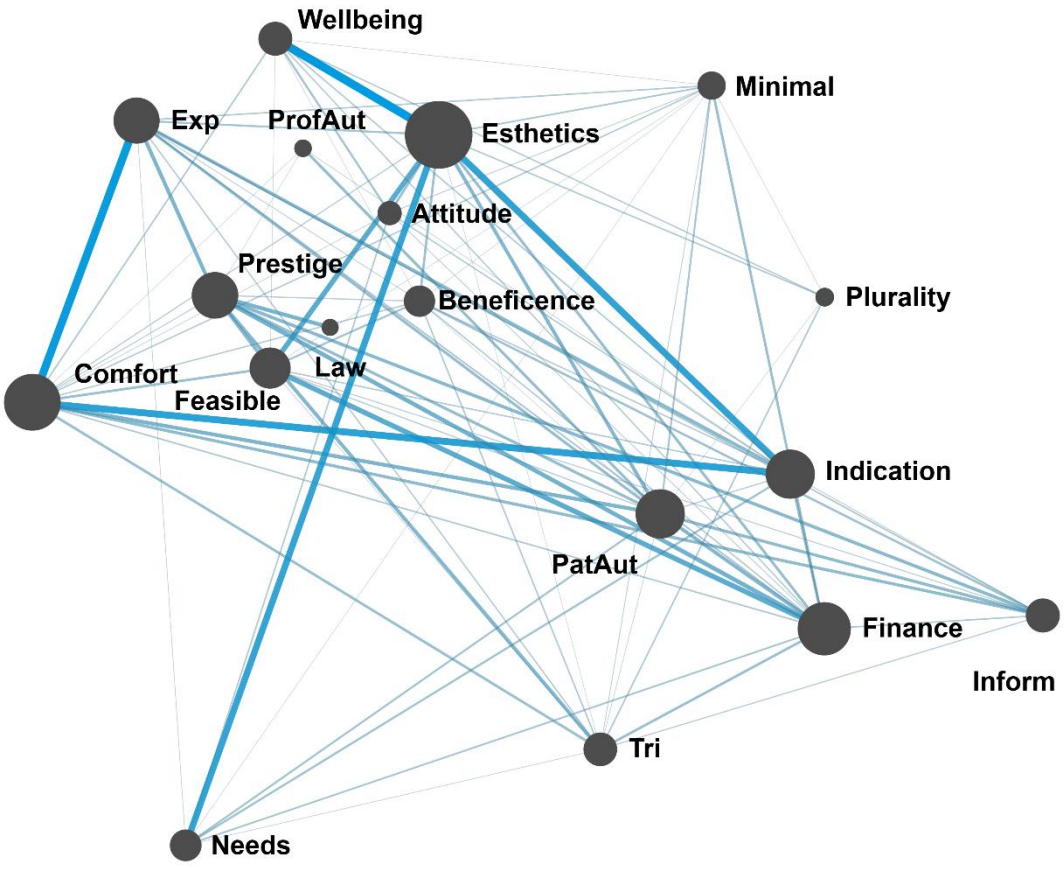

Figure 3. Mean epistemic network of patients. Codes are represented by the nodes of the network (black circles). The size of each node reflects the relative frequency of the code's

co-occurrences with other codes. The relative frequency of co-occurrence between specific pairs of codes is indicated by the thickness and saturation of the edges (lines) between nodes. (Own figure.)

4.2.4. Projection space of the entire dataset

Figure 4 displays the ENA projection space, providing analytical gaze at all participants in one visualization. The means of the dentist and patient subsamples along with the individual interviews of both subsamples were positioned distant from one another, indicating a clear difference in code co-occurrence patterns. In addition, the tighter confidence interval surrounding the mean of the dentist subsample suggested dentist narratives were more likely similar. For the dentist subsample, the location of nodes signified firstly the codes *Patient autonomy, Informing, Medical indication, Plurality* and *Minimally invasive* to be most typical in the co-occurrence patterns, secondly the greatest division along the codes *Triangulation, Finance* and *Informing* one hand, and *Minimally Invasive* on the other hand. Conversely, for the patient subsample, the figure demonstrated firstly, that the codes *Needs, Comfort, Prestige, Personal experience,* and *Well-being* to be typical in code co-occurrence patterns, secondly the greatest division along the codes *Needs* one hand and *Well-being* and *Esthetics* on the other hand. The subtracted network was consistent with prior findings about the relative strength of specific connections in each network, demonstrating the magnitude of difference in those connection strengths. However, the subtracted network also showed the connection between *Medical indication* and *Minimally invasive* and between *Informing* and *Laws and rules* to be connections characterizing dentists' narratives, although not being identified among the strongest connections in the dentist mean epistemic network.

The co-occurrence of *Medical indication* and *Minimally invasive* implied that dentists favored treatment alternatives that cause less harm but may be sufficient in a certain clinical situation. When discussing the case of a patient opting for the extraction of their teeth instead of comprehensive treatment, a dentist argued, "*in the first steps let's just look at the most necessary interventions, carry them out, see how satisfied the patient is, and then slowly but surely, if they would still like that, we can extract those teeth, but I believe that extracting teeth without medical indication in an exodontist way is not right."*

Another dentist contended when discussing crowns as a solution for orthodontic or esthetic issues, "*In this case (…) for the quality of life of the patient there are more favorable solutions, and I would guide them to go this route (…) like for example braces or veneers, or if necessary, tooth bleaching may also help, or direct veneers, so I would always guide them towards the minimally invasive solution."*

The co-occurrence of *Informing* and *Laws and rules* referred to the transfer of not only moral but also legal responsibility to the patient, achieved through adequate information and documentation confirming that the information was communicated. For instance, a dentist describing patient complaints stated, "*If we don't inform the patient, (…) then it is a problem (…) and the patient will press charges against the dentist (…) and if the patient bases their claims on not receiving information, and this is not what they wanted, then it is a problem if it wasn't documented."* On another account, when discussing request for tooth extraction, a dentist declared, "*I would let the patient sign the form, that they received all information and wishes the removal of those teeth*."

Figure 4. Epistemic Network Analysis projection space displaying individual network locations for each participant (colored circles) in the dentist (red) and patient (blue) subsamples, as well as mean epistemic network locations for both subsamples (colored squares). Dashed lines around the means denote the 95% confidence intervals on each dimension. Subtracted graph of mean patient and dentist networks (center); black circles represent codes, red edges (lines) and blue edges signify higher frequency of code co-occurrences in dentist and patient narratives, respectively. (Own figure.)

5. Discussion

5.1. The objectives and results of the thesis within bioethics

Modern bioethics most commonly relies on ethical principles, especially on the framework of prima facie principles articulated by Beauchamp and Childress (24,42). Despite the consensus to adhere to these principles, how they guide clinical decision-making is often subject to divergent interpretations (42). This issue is also present in dentistry. While major bioethical themes such as beginning-of-life and end-of-life care receive less attention in everyday dental practice, the topics of granting patient requests, esthetic interventions and bodily integrity are particularly relevant in this field. This thesis aimed to explore the conflict between patient autonomy and medical necessity in the context of dentistry. Adjacent to the traditional approach in bioethics to apply philosophical reasoning to biological (primarily medical) phenomena, this project aligned with the emerging field of empirical bioethics. For this purpose, the designs of both studies operationalized bioethical concepts and constructs to be used in explorative empirical research. In addition, we did not adhere to the approach of hierarchization, rather examined the interactions of these constructs (as also advised by Beauchamp and Childress (24)). In the empirical bioethics model of Huxtable and Ives, the two studies reported in this thesis mapped the research topic with reviewing current literature and framed it via exploring dentist and patient experiences and opinions (51).

5.2. Discussion of the review of relevant literature

In the scoping review, we included 11 journal articles, indicating that the topic of patient autonomy and paternalism in dentistry is not well-researched. This finding suggested possible major gaps in literature, as the matter of patient autonomy and paternalism is one of the cornerstones of bioethics in non-dental contexts (3). Furthermore, as most of the reviewed articles were published in dental journals, a bias may exist toward reporting the moral stances from the dental profession's perspective.

The most frequently discussed case in the scoping review was tooth extraction on patient request. Non-bioethical empirical studies also call attention to this issue, as patient request is reported as a significant reason in deciding to extract teeth (82–85). In addition,

requesting tooth extraction may exemplify the concern raised by Kovács, that procedures where bodily mutilation is accompanied by psychosocial benefit despite the loss of function are judged inconsistently (38). For instance, one source mentioned patients with BIID wishing the extraction of their teeth, which was the condition (although generally associated with the request for healthy limb amputation) mentioned in the article of Kovács (38,107,108). It is important to highlight that due to the irreversible nature of the procedure, Wilkinson's argument remains relevant, that patient's values and goals may change following intervention, as when the motivation for the request is immediate pain relief or the fear of increased number and duration of dental sessions with uncertain prognosis (33,108).

The majority of the reviewed sources were more paternalistic, relying on the principles related to the patient's medical needs (as in the theme *Professional ideals over society's ideals*), sociocultural and legal environment, and standards raised by experts. However, patient autonomy was widely recognized, firstly, as even the sources taking a paternalistic stance usually considered patient autonomy, secondly as patient autonomy (represented by the code *Individual decision-making)* was the guiding principle when paternalism was not supported, as apparent in the theme *Autonomy in need for prevention.* A common feature of all sources where the patient's autonomy was addressed, was that autonomy did not define nor shape what benefits the patients, as it does in Bester's model or in Cohen's semi-discrete and non-discrete models (30,31). Instead, patient autonomy was treated as an isolated concept. Nevertheless, other principles that oppose paternalism were occasionally mentioned alongside patient autonomy, as *Plurality* (referring to the subjective nature of morality), or *Impact* (although depending on the context, as minimal harm or risk was regarded as morally acceptable).

5.3. Discussion of the narratives of dentists and patients

As codes describing narratives of dentists and patients were developed, we modified and expanded the CPVs of Ozar et al. to reflect the two stakeholder groups (patients and dentist) (79). Previous empirical bioethics researches most commonly limited their scope to the practitioners (39), even though ethical dilemmas usually involve more stakeholder groups. However, a research strategy to test and augment an existing theory is not

unprecedented in bioethics, as for example Lipworth and Little applied the principles of Beauchamp and Childress in pharmaceutical ethics, and found patient autonomy to be of minimal significance, while identifying new ethical principles (the interest of the pharmaceutical firm and the interest of society) (112). We implemented the following adjustments to the CPVs (79): The patient's life and general health was not defined by the authors (79), thus since reference to the patient's life did not emerge in the interviews, we did not include this aspect in our final codebook, nonetheless we adopted the WHO's biopsychosocial health definition and renamed the code *Well-being* (55). Furthermore, we modified the definition of esthetics to any interpretation of what is esthetic, as the participants never mentioned the dentist's duty to advocate for society's esthetic ideals against individual patients' esthetic ideals. With this modification, even though esthetic ideals uncommon in Western societies (e.g., the Cape Flats Smile) were explicitly not mentioned by participants, our code definition would hypothetically recognize all alternatives of esthetic appearance. Definitions of oral health (*Medical indication)* and patient autonomy were not modified significantly. We endorsed the view of Rule and Veatch that the patient's state, needs and prevention influenced oral health, yet in our framework these notions are separate constructs in the definitions of additional codes (81). Preferred practice patterns and efficiency were excluded, as they did not occur in the narratives. *Professional autonomy* could overlap with the dentist's preferred practice patterns, although in the dentist narratives *Professional autonomy* referred to the dentist's personal values and responsibilities, while the preferred practice patterns was a more practical consideration (79). In addition, the original CPVs published in 1988 included cost which resembled our *Finance* code (80). Nonetheless, the *Other* code was disaggregated to a diverse array of novel codes, implying that Ozar et al.'s theory captured only a fraction of constructs that drive decision-making, even in the specific ethical issue under investigation (79).

Both patient and dentist narratives were densely connected despite the relatively small stanza window in which the code co-occurrences were computed (i.e., two codes were considered co-occurring if they appeared within the same two-sentence span). This confirms that both stakeholder groups had deep insights into the ethical dilemma. The dentist network was dominated by the codes representing the core of the research's topic, *Medical indication* and *Patient autonomy.* The strongest connections of these two codes

provides two diverse resolutions of the ethical dilemma, as *Patient autonomy* and *Informing* referred to empowering patients to make informed decisions, while *Medical indication* and *Esthetics* referred to channeling interventions enhancing esthetic appearance to serve oral health. A previous theory delineated by the author of this thesis described four possible exhaustive treatment strategies dentists could follow (meaning treatment plans that do not focus on a single issue) which could either aim to fulfil patient request, thereby prioritize esthetics, aim to achieve a textbook-based ideal, aim to achieve sufficient oral function or aim to preserve the dentition and surrounding tissues (113). The caveat of this study was akin to the caveat of a high proportion of bioethical theory, including the CPVs, that it did not reflect on real-world practices supported by empirical data (42,79). Namely, the dentists' narratives rarely linked patient autonomy to esthetic outcomes, as it was the case in the aforementioned study (113). Furthermore, the results did not clearly indicate whether the oral function is more textbook-based than suited for the patient's oral status and needs (thus creating conditions for overtreatment (113)), however the code including the notion of preserving anatomical structures (*Minimally invasive)* was a medium-frequency code.

The patient network contained codes with a significantly lower frequency of relative co-occurrences (*Laws and rules, Plurality, Professional autonomy, Health attitude),* highlighting the concerns only occasionally expressed by patients. Furthermore, the frequent co-occurrence of *Medical indication* with *Comfort* (referring to treatment need based on perceived state) and *Comfort* with *Personal experience* (referring to existing or possible changes in perceived state) in the patient network suggested that patients' reasoning relied much less on concepts employed in bioethics and medicine. This notion was further amplified by the fact that *Patient autonomy* and *Informing* were not among the most significant nodes in the network, thus patients' primary concerns were not their right to make decisions regarding their own health or to be fully informed about outcomes and alternatives. Further research would be required to determine whether this phenomenon is as prevalent in other cultural contexts, or is a manifestation of the higher acceptance of paternalism in post-socialist countries (114). Nevertheless, these results indicated that if practitioners retain commitment to the ethical obligation to ensure patients make informed and autonomous decisions, it becomes increasingly essential to explore patients' goals and values. For instance, as the results suggested, the ideas related

to *Comfort* are often especially meaningful for patients. One possible approach to embrace patients' autonomy who are less conscious about their autonomy would be Rubin's collaborative model (32), although such engagement with the patient may be time-consuming, which Calladine et al. identified as a common shortcoming in dental practice (115). Furthermore, while in the narratives of general practitioners in a study of Asscher's et al., granting patient requests was described as a means of gaining patients' trust, our results suggested a modification of this view: trust appears to be built more on unspoken, subjective patient experiences rather than on explicitly articulated demands (116).

On the other hand, the co-occurrence between *Esthetics* and *Well-being* corresponded to the widely recognized paradigm in medical research that appearance influences psychosocial well-being. In addition, it reinforced the experience of dentists articulated under the co-occurrence of *Esthetics* and *Medical indication*, that patients associate esthetic concerns with health. However, from dentists' perspective esthetic appearance was primarily linked to oral health (hence the definition of *Medical indication*), whereas patients tended to associate with overall health (hence the definition of *Well-being*). Some scholars argue that esthetic ideals are raised artificially by out consumerist society, granting these requests only exacerbates the societal pressure to conform to increasingly demanding standards of appearance, thus interventions should target the psychological aspects driving such desires, encouraging people to accept their bodies (77). This ethical query is comparable to the case of healthy limb amputation in individuals with BIID, though in that case, a key argument for the intervention is that the psychological condition is not effectively treatable (38). Consequently, if individual dentists or higher-level stakeholders campaigned against the rising esthetic standards, they must not overlook this finding that esthetics shape patients' understanding of health. Therefore, the intended message should not result in a neglect of oral health and decline in dental visits.

In the projection space of all interviews, dentists' narratives appeared more closely clustered, outlining a shared domain in their professional experience. The position of networks and nodes reiterated the finding that dentists' concerns more frequently revolved around concepts often discussed in bioethics (e.g., patient autonomy or the affordability of treatments), while patients' concerns were often more subjected to their sense of comfort and previous experiences. The exception from the previous observation

were *Esthetics* and *Well-being,* although *Well-being* served as a point of division within the subsample. Given the subjective nature of the perception of *Well-being*, *Esthetics*, *Comfort*, and *Needs* (another code that revealed divisions), the findings suggest that a procedural resolution of the researched conflict is more likely acceptable to patients. This implies that the process of resolving the dilemma is prescribed, not a universally applicable resolution. The dentist subsample was divided along ensuring minimal harm is done or ensuring the conditions of the treatment to be appropriate (e.g., patient information and cost). Accordingly, Ozar et al.'s argument that the duty to do no harm justifies the lower ranking of patient autonomy was not uniformly supported by dentists (79).

When addressing health, both dentists and patients emphasized various aspects of individual health. However, novel theories, as the One Health Approach regard individual health intertwined with the community and with the ecosystem (117,118). Despite the novelty of this theory, it is not foreign to bioethics, as the initial purpose of bioethics was to provide philosophy for environmental protection for the sake of humanity's benefit (2). Furthermore, though not inclusive of the natural environment, advocates of communitarian bioethics have criticized individualism in Beauchamp's and Childress's principlist philosophy, in which patients are never morally wrong when making autonomous choices that affect their health (moral debates discuss whether it is moral for the practitioner to carry out these choices), and the meaning of beneficence and nonmaleficence is usually not expanded to include the community (21). As the healthcare sector is one of the main emitters of carbon-dioxide (119), recent bioethical debates, including a paper by the author of this thesis, have discussed the alignment of patient health, environmental sustainability and patient autonomy (120–125). Further exploration of sustainable attitudes and behaviors in dentistry was conducted by the author of this thesis. For further details, please see the project's public repository [9].

5.4. Limitations

A limitation of this thesis is that it mapped and framed a topic that has been a focal point in bioethics, but not within the context of dentistry. Thus, the scoping review was

[9] https://osf.io/472r6

conducted with a relatively low sample size despite the search terms being formulated in a broad way. Furthermore, as the majority of included sources were articles in dental journals, the results may show bias towards the professional perspective. Another limitation pertaining to the aforementioned issue is that the reported studies were descriptive and not prescriptive, meaning that the moral opinions of scholars, dentists or patients do not inherently reflect ethical justification. In addition, as the interviews were conducted in Hungary, these results are most relevant in the Hungarian context. For example, the relative insignificance of the *Finance* code among patients may be attributed to the availability of most dental procedures in public care. Further limitations are due to the characteristics of the methods, namely thematic analysis employed in the scoping review and ENA employed in the analysis of patient and dentist narratives. Both methods involved the identification of qualitative codes in the data and interpreting the meaning of the data via the constellations of codes. ENA creates quantitative networks of code co-occurrences, thereby facilitating this task, especially when comparing stakeholder groups. Furthermore, as the interpretation of data is supported by quantitative networks, the results offer greater transparency, are more open to scrutiny, and demonstrate a higher level of scientific rigor, features that are present to a lesser degree in thematic analysis. However, as ENA currently lacks hypergraph capacity, it computes networks based on code pairs and does not indicate the frequency of codes in isolation nor higher-order constellations (code triads, code quads, etc.), while thematic analysis retains the flexibility to capture such relationships. In the scoping review, we coded larger segments of text, thereby foregoing the quantification of relative frequencies in favor of including higher-order code constellations, although higher-level constellations were only present in the themes across parent and grandparent codes. In the sentence-by-sentence coding of interviews, where the aim was to compare stakeholder groups, the creation of quantitative models, even if limited to code pairs, appeared more analytically relevant. In addition, a limitation of both approaches is that through the systematic evaluation of data providers, results potentially obscured nuances that may have emerged in granular, case-level approach.

6. Conclusions

This thesis contributed to the study of dental ethics, an under-researched field within bioethics. The findings revealed discrepancies among prevailing ethical theory, journal articles, dentist perspectives and patient perspectives. Consequently, the development of a single, universally adaptable solution to resolve the ethical dilemma between patient autonomy and oral health appears unlikely. Nonetheless, the thesis identified patient and dentist concerns, which enable a better understanding of the alternative co-existing moral realities. If further exploration were to be extended into the normative domain, it would require a paradigm shift away from the current constructivist approach to exclude what is morally unacceptable or suboptimal.

7. Summary

Bioethics is a discipline bridging biology and ethical philosophy, including medical ethics. Contemporary medical ethics most commonly relies on principlism, with patient autonomy receiving significantly increased attention in recent decades. However, this approach may eclipse real-life practices and prove inconsistent when solving ethical challenges. Therefore, a novel trend in bioethics is to uptake sociological and anthropological empirical data to shape existing theory. The topic of this thesis was dentistry, a field concerned with functions such as speaking, chewing, or conveying emotions. The research objective was to explore the ethical dilemma between patient autonomy and oral health in dentistry.

We explored relevant cases, judgements and principles in literature with a scoping review. This involved developing subcodes of these categories inductively, and synthesizing data via thematic analysis. Subsequently, we investigated patient and dentist narratives using semi-structured interviews. We developed a codebook with a guided-inductive approach and modelled the code co-occurrences with Epistemic Network Analysis.

The scoping review included articles predominantly published in dental journals. Most common cases were requests for tooth extraction and disease prevention. The majority of the sources took a paternalistic stance despite weighing patient autonomy, with notable exceptions linked to discussing disease prevention. In the interviews, dentist narratives were characterized by preferring interventions fulfilling both esthetic and medical needs, along with informing patients to empower autonomous decision-making. On the other hand, patients linked the sense of comfort to previous experience and to the state of their oral health. Furthermore, they often defined their oral health via esthetic appearance, while also acknowledging that esthetic standards vary for different individuals.

This thesis operationalized bioethical theory for explorative research. The scoping review revealed that the ideals in relevant literature contradict current practices, as patient wishes have been reported as a factor driving decision-making in dentistry. Furthermore, our results indicate that dentists applied similar concepts to those used in bioethics, while patients' narratives were more subjective and grounded in personal perspectives. Thus, even though our project contributed to the understanding of the ethical dilemma with presenting various moral realities, a universally acceptable resolution of the ethical dilemma appears unlikely.

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9. Bibliography of the candidate's publications

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Kovács SD, Jeney A, Zörgő S. Mapping the Conflict Between Oral Health and Patient Autonomy in Dentistry: A Unified Qualitative-Quantitative Study. Int Dent J. 2026 Feb 1;76(1):104012.

Candidate's conference presentations related to the thesis:

Kovács SD. The Conflict Between Patient Autonomy and Oral Health in Dentistry. PhD Scientific Days; 2024 Jul 9-10; Budapest, Hungary.

Kovács SD. Pioneering a Novel, Unified, Quantitative-Qualitative Method for Heightened Rigor in Bioethical Dilemmas. EACME (European Association of Centres for Medical Ethics) 2024 annual conference; 2024 Sep 12-16; Halle, Germany.

Kovács SD. Contemporary Bioethical Dilemmas in Dentistry: Patient Autonomy, Medical Necessity and Sustainability. PhD Scientific Days; 2025 Jul 7-9; Budapest, Hungary.

Kovács SD, Zörgő S. The conflict between the respect for patient autonomy and oral health in the narratives of Hungarian dentists and patients. 37th ESPMH (European Society for Philosophy and Healthcare) Conference; 2025 Aug 13-16; Manchester, United Kingdom.

Candidate's publications not related to the thesis:

Kovács SD, Mulholland K, Condon L, Koncz Z, Zörgő S. Interaction of Diagnostic Criteria in the Narratives of Patients with Borderline Personality Disorder. In: Arastoopour Irgens G, Knight S, editors. Advances in Quantitative Ethnography. Cham: Springer Nature Switzerland; 2023. p. 316–29.

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Kovács SD, Zörgő S. Exploring Sustainable Practices in Dentistry. International Conference of PhD Students and Young Doctors; 2024 Dec 11; Targu Mures, Romania.

Candidate's conference poster not related to the thesis:

Kovács SD, Demeter T, Thị Quỳnh Bùi M, Zörgő S. 17th. Dentists' Attitudes in Adopting Sustainable Practices in Hungarian Private and Public Clinics. World Conference in Bioethics, Medical Ethics and Health Law; 2025. Nov 24-26; Ljubljana, Slovenia.

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