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'Transforming Scenarios in Removable Partial Dentures'- A Narrative Review

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ABSTRACT: Digital innovations like CAD/CAM technology, intraoral scanning, and 3D printing have revolutionized the design and fabrication of removable partial dentures (RPDs), offering superior precision, customization, and efficiency. Patient-centered care, minimally invasive approaches, evidence-based practice, and the integration of implant-assisted RPDs (IARPDs) are also driving significant changes in the landscape of RPD procedures. Faster manufacture, better fit, and increased patient satisfaction are made possible by `1`these technologies. Thanks to advances in materials science, RPDs are now more comfortable, aesthetically pleasing, and long-lasting thanks to the use of flexible resins, high-performance polymers, and other biocompatible materials. Compared to designs based on traditional metal, modern materials provide increased durability, less weight, and increased flexibility.

I. INTRODUCTION

Thanks to developments in digital technologies, treatment modalities, and materials, the field of removable partial dentures (RPDs) is going through major transformation. The following are some significant RPD trends and modifications:

II. ADVANCEMENTS IN DIGITAL TECHNOLOGY

Digital Design and Fabrication: To create RPDs, digital scanning, computer-aided design (CAD), and computer-aided manufacturing (CAM) have become indispensable tools. Digital workflows enable improved patient comfort, shorter chair times, and more accurate and personalized prosthetic design.

3D Printing: The process of producing RPD frameworks using additive manufacturing, or 3D printing, has grown in popularity. Faster production speeds, improved precision, and less material waste are some advantages of this approach.[1]

With the help of digital technology, the area of removable partial dentures (RPDs) has undergone tremendous change, improving patient happiness, efficiency, and precision. Here is an elaboration on how digital technology is changing the scenario of RPDs:

A.)Digital Imaging and Scanning
With the following many benefits, traditional impression procedures have been superseded with digital intraoral and extraoral scanners:

Accuracy and Precision: Using digital imprints, many of the mistakes made with traditional impression materials—like shrinkage and distortions—are eliminated. Models for creating RPD frameworks get more accurate as a result.

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Comfort and Efficiency: Patients can feel more at ease and less anxious during digital scanning, which also lessens the chance of gag reflex and anxiety. Additionally, it improves chairside efficiency by reducing the need for multiple impression appointments.[2]

B. Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM)
CAD Software for RPD Frameworks: RPD frameworks can be carefully designed and planned with the help of contemporary CAD software. The software can assess occlusion, mimic the framework's fit, and guarantee that the prosthesis will blend in perfectly with the patient's natural teeth.

Enhanced Customization: Using CAD technology, every part of the RPD may be tailored to the specific anatomy of the patient, enhancing both appearance and functionality.

CAM Milling and 3D Printing:Subtractive milling and additive manufacturing (3D printing) are two CAM technologies that make it possible to produce RPD frameworks quickly and precisely. These techniques improve overall consistency in prosthesis manufacture, decrease material waste, and speed up production times.[3]

C. Manufacturing Additive and 3D Printing
Revolutionising Fabrication: RPD frameworks are being produced more often using additive manufacturing, or 3D printing, which has several benefits.

Better Fit and Comfort: Highly customised and intricate RPD frameworks can be created through the layer-by-layer manufacturing process of 3D printing, which results in a more precise and comfortable fit.

Material Flexibility: Various materials can be used, such as metal alloys, plastics, and resins, to select materials that best suit the demands and preferences of individual patients.

Efficient Prototyping and Iteration: The digital workflow facilitates prompt modifications and reprinting of prototypes or final dentures, hence decreasing the duration of treatment.

D. Integration of Digital Workflows
Digital technology have made it possible for a smooth process to be followed from the first patient consultation to the delivery of the finished denture.

Digital Records and Communication: Digital scanning lowers the possibility of information loss or misunderstanding by enabling instantaneous digital records that can be readily shared with labs and other experts.

Virtual Try-Ins: This technology improves patient involvement and satisfaction by enabling clinicians and patients to see the prosthetic outcome prior to final manufacture.

E. Artificial intelligence (AI) and predictive analytics
Enhanced Treatment Scheduling: Artificial Intelligence (AI) algorithms are currently being incorporated into digital workflows to forecast treatment results, pinpoint ideal designs, and enhance clinical judgement.

Patient-Specific Design: AI can design highly customised RPD frameworks that maximise comfort and function by analysing patient-specific data, such as soft tissue shapes, occlusal forces, and bone density.[7]

F. Education and Acceptance of Patients
Digital visualisation tools: Using these technologies improves communication and visualization with patients, enabling them to comprehend their treatment options and expected results. Higher acceptance rates and levels of satisfaction with RPDs may result from this.

Augmented Reality (AR) and Virtual Reality (VR): New technologies like AR and VR are also being investigated for patient education and training, offering an immersive means for patients to see the effects of RPDs.[8]

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III. BETTER MATERIALS

High-Performance Polymers: High-performance polymers, which provide superior flexibility, biocompatibility, and aesthetics over conventional metal alloys, are becoming more and more popular. Examples of these polymers include polyamide and Poly Ether Ether Ketone (PEEK).

Nanomaterials and Composite Resins: Developments in nanotechnology have produced nanocomposite resins that provide improved strength, durability, and wear resistance. These resins are currently utilized in RPD frames and teeth.
The environment of removable partial dentures (RPDs) has undergone tremendous change due to the development and application of novel materials. These developments are producing prostheses that are stronger, more aesthetically pleasing, and biocompatible. Explanation of the main material advances affecting RPDs is provided below:

1. Superior Efficacy Polymers
A growing number of RPD frameworks are being made with high-performance polymers, like Poly Ether Ether Ketone (PEEK), polyoxymethylene (POM), and polyamide, because of their advantageous features.

Benefits: PEEK is a thermoplastic polymer with a high strength-to-weight ratio, good biocompatibility, and resistance to corrosion, wear, and chemicals. It offers an alternative to conventional cobalt-chromium (Co-Cr) alloys used in RPD frameworks that is free of metal.

Aesthetic Benefits: PEEK is more aesthetically pleasing than metallic frameworks because it is tooth-colored.

Clinical Performance: Patients find PEEK frameworks more pleasant due to their lightweight and flexibility, which also helps to minimize allergic reactions that are frequently linked to metal frameworks [10]. PEEK can serve as a viable substitute for metal alloys.

2. Flexible Resins Made of Nylon
RPDs are being made with more and more flexible nylon-based resins, including polyamide, because of their special qualities.

RPDs made of nylon have the advantages of being lightweight, flexible, and allergy-free. They fit patients with metal allergies better, don't break easily, and offer a more comfortable fit.

Aesthetic Appeal: Because nylon is semi-translucent, it can match colours more closely to the surrounding soft tissues, giving the impression that it is more natural.

Applications in Clinical Practice: Patients who need temporary or transitional prostheses or who have few remaining teeth can benefit most from these resins [11].

The advantages of employing flexible materials in particular patient populations are highlighted in this systematic study, which also examines the clinical effectiveness and patient satisfaction of nylon-based RPDs in comparison to standard acrylic resin.

3. Cutting-Edge Acrylic Resins
For RPDs, new acrylic resin formulations—such as high-impact and nanocomposite resins—with improved physical qualities have been created.

High-Impact Acrylic Resins: These resins have fillers or fibres added to them to increase their impact strength and reduce their tendency to shatter or fracture.

Nanocomposite Resins: The mechanical strength, wear resistance, and aesthetic qualities of acrylic resins are enhanced by the addition of nanoparticles (such as zirconia or silica).

Resins that are self-polymerizing and light-cured offer enhanced control over the polymerisation process and quicker setting periods. This minimises the likelihood of porosity and residual monomer release, which can trigger allergic reactions and discomfort [12].

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4. Frameworks without Metal
RPDs are undergoing a transformation due to the increasing use of metal-free materials such advanced ceramics and fiber-reinforced composites (FRCs).

a).Fiber-Reinforced Composites (FRCs):
Benefits: Fiber-reinforced composites (FRCs) are a great option for non-metallic RPD frameworks because they mix the strength of fibres (like glass) with the flexibility of polymers. Patients who are allergic to metals should use them because of their exceptional strength, flexibility, and fatigue resistance.
The aesthetic integration of FRCs with natural teeth is enhanced by their ability to be translucent and tooth-colored.

b). High-Tech Ceramics:
Applications: Because of their outstanding wear resistance and aesthetic features, ceramics are employed in certain components such as clasps and connections, but they are not generally used for RPD frameworks because of their brittleness.
In discussing the use of fiber-reinforced composites in prosthodontics, this paper highlights the materials' mechanical qualities, biocompatibility, and benefits for RPD frameworks.

5. Surface treatments and nanomaterials
Nanotechnology: By using nanotechnology to create novel dental materials, better RPDs with increased strength, durability, and antibacterial qualities have been produced.

Nano-fillers: Composite materials with nano-fillers have less polymerisation shrinkage and better mechanical qualities (such as toughness and flexural strength).

Antibacterial Nanoparticles: By incorporating silver, zinc oxide, or titanium dioxide nanoparticles into the resin matrix, antibacterial capabilities can be provided, which can reduce the production of biofilm and increase the denture's longevity.

6. Cushion materials and soft liners
a) Silicone-Based Soft Liners: These new materials offer enhanced elasticity, resilience, and compatibility with the oral tissues, making them the perfect choice for patients with mucosal problems or soft tissue compromise.

b). Viscoelastic Cushioning Materials: These materials are utilised to impart a cushioning effect to RPDs, thereby minimising trauma, uniformly dispersing masticatory pressures, and enhancing patient comfort in general.[15]

7. Enhanced Biocompatibility via Coating Technologies
a) Antimicrobial Coatings: RPD frameworks can be treated with antimicrobial coatings, like titanium dioxide or silver, to prevent bacterial colonisation and lower the risk of infection.

b). Surface Modifications: RPD frameworks' wettability, adhesion, and general biocompatibility are all improved by new surface modification techniques, which also increase patient acceptability and comfort [16].
The potential of antimicrobial coatings in dental prostheses, particularly their use in RPD frameworks for enhanced biocompatibility and decreased infection risk, is covered in this review.

IV. STRESS LESS INVASIVE PROSTHODONTICS

Minimally invasive prosthodontic methods are becoming more and more popular. Their goal is to retain as much of the natural dentition and oral tissues as possible. Flexible RPDs and metal-free frameworks are two components of this strategy that offer more visually acceptable and comfortable solutions while minimising the requirement for substantial tooth preparation.[17]

When it comes to removable partial dentures (RPDs), the minimally invasive method prioritises maintaining the majority of the natural dentition and oral tissues while yet offering prosthetic options that are both aesthetically pleasing and practical. Technological developments in materials, digital technology, biomechanics, and patient-centered care are driving this paradigm change. Here's how the minimally invasive strategy is altering the RPD treatment landscape:

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1. Maintaining the Natural Tooth Structure
A). Conservative Preparation Methods: By minimising the necessity for significant tooth alterations, such as excessive tooth preparation for rests, clasps, or guiding planes, the minimally invasive method emphasises the preservation of the remaining natural tooth structure.

B). Strictly restricting alterations to tiny, regulated regions, RPD designs now prioritise selective rest preparations, preserving the strength and integrity of the tooth.[18]

2. Employing Adaptable and Metal-Free Frameworks
A). Flexible RPDs: As a less intrusive option to conventional metal frameworks, flexible RPDs are composed of materials such as nylon-based polymers. They preserve the natural tooth structure and provide patients greater comfort because they don't require metal clasps or extensive tooth preparation.

B). Metal-Free Designs: The use of high-performance polymers in RPD frameworks, like polyetheretherketone (PEEK) and polyamide, removes the requirement for metal components, which can be more intrusive because they require a lot of fitting and preparation [19].

3. Technology for CAD/CAM and Digital Workflow
A). Computerised Scanning and CAD/CAM Manufacturing: The digital process enables accurate RPD framework design and manufacturing with little human interaction. By obviating the need for invasive retraction operations and reducing the number of traditional impressions required, digital impressions improve patient comfort during the process.

B). Precision Fit and Fewer modifications: CAD/CAM technology allows a more precise fit of the prosthesis, minimising chairside modifications and associated harm to soft tissues and natural teeth. [20]

4. Removable Partial Dentures with Implant Assistance (IARPDs)
A). Minimally Invasive Implant Placement: Implant-assisted removable partial dentures (IARPDs), which combine implants and RPDs, offer enhanced stability and retention with less substantial dentition modification required.

B). Strategic Use of Mini Implants: RPDs can be stabilised and retained better with the application of mini implants, requiring less invasive surgery. With this method, complete arch fixed prosthesis or significant bone grafts may not be necessary.[21]

5. Focus on Occlusal Harmony and Biomechanics
A). Optimised Biomechanical Designs: Contemporary RPD designs are founded on biomechanical principles that aim to reduce the amount of stress placed on the supporting structures and abutment teeth. In order to more uniformly transmit occlusal forces, this involves using specific location for connections, clasps, and rests.

B). Reduced Wear and Mobility of Teeth: These designs comply with minimally invasive principles by minimising wear and tear on the surviving natural teeth and preventing future tooth mobility or loss. This is achieved by optimising the distribution of forces.
In order to protect natural structures and reduce trauma, biomechanical concerns are emphasised in this paper's discussion of denture design principles.

6. Clinical Trials and Evidence-Based Treatment Planning for Patients
A).Treatment planning is becoming more patient-specific, taking into account things like oral anatomy, occlusal connections, and patient preferences. This leads to customised, minimally invasive treatment plans. This leads to the choice of the least invasive treatment option that nevertheless satisfies aesthetic and functional requirements.

B). Comprehensive Patient Education and Shared Decision-Making: Minimally invasive techniques prioritise patient education and shared decision-making, enabling patients to select options that correspond with their comfort levels and values.[23]
This research emphasises the value of personalised treatment plans and patient-centered care, supporting methods that reduce invasiveness while increasing patient satisfaction.

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7. Adhesive Retainer and Attachment Usage
A). Adhesive Retainers: In certain RPD designs, adhesive attachments or retainers are utilised to reduce the requirement for clasps that call for tooth preparation. Because these retainers are glued directly to the enamel, the tooth's structure is preserved.

B). Low-Profile Attachments: As an alternative to conventional clasp designs, low-profile precision attachments enable retention without requiring a lot of preparation. [24]

8. Soft Tissue Management with Minimal Invasiveness
A). Preservation of Soft Tissue: The goal of the minimally invasive approach to soft tissue management is to reduce trauma and maintain the integrity of gingival tissues.

B).Gingival-Friendly Design Features: RPD design advancements that minimise cumbersome connectors, steer clear of excessive tissue covering, and use more biocompatible materials all contribute to the maintenance of healthy soft tissues [25].
In order to preserve hard and soft tissues, lower long-term treatment costs, and enhance patient outcomes, this article highlights the significance of minimally invasive prosthetic designs.

V. EMPIRICAL RESEARCH AND PATIENT-CENTERED CARE

Patient-centered care, in which the needs, preferences, and comfort of the patient are prioritised, is becoming more and more popular. Using evidence-based practices, developing individualised treatment plans, and enhancing patient-clinician communication about the advantages and drawbacks of RPDs are all part of this.

The use of digital imaging technologies and virtual consultations is becoming commonplace in order to increase treatment acceptance, facilitate communication, and improve patient education. [26]

By emphasising personalised treatment planning, boosting patient satisfaction, and increasing clinical outcomes, Patient-Centered Care (PCC) and Evidence-Based Practice (EBP) are changing the treatment scenarios for removable partial dentures (RPDs). These methods place a strong emphasis on patient participation in decision-making, clinical decision-making based on the most up-to-date research, and customised treatment regimens based on the needs and preferences of each patient.

1. Improved Collaboration and Joint Decision-Making with Patients
a).Active Patient Participation: Shared decision-making, in which patients actively choose their treatment options based on their requirements, preferences, lifestyle, and values, is emphasised in patient-centered care. This is in contrast to the more paternalistic method wherein medical professionals make choices with little or no involvement from patients.

b). Enhanced Patient Satisfaction: Patients who participate in the decision-making process are more likely to follow care guidelines, such as timely follow-up appointments and regular denture maintenance, and to be satisfied with the results of their treatment[27].
This article explains the value of shared decision-making in clinical settings and emphasises how it may be used in prosthodontics, particularly with RPD therapies, to increase treatment plan adherence and patient satisfaction.

2. Tailored Care Plans Considering Each Patient's Requirements
Customised prosthetic designs are a key component of patient-centered treatment, as they are intended to fulfil each patient's functional, aesthetic, and psychological requirements. This entails choosing components, fastening systems, and prosthetic designs that complement the patient's unique oral circumstances, tastes, and economical constraints.

In order to make sure that the prosthesis satisfies both clinical and individual demands, factors including oral anatomy, age, dexterity, medical history, and psychological comfort are taken into account. [28] Personalised treatment plans are important in prosthodontics, and this study shows how they can be improved over a five-year period by customising RPD treatment to the individual needs of each patient.

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3. Treatment Planning with an Infusion of Evidence-Based Practice
The best available clinical research is applied in evidence-based therapy by combining patient preferences with the clinician's knowledge. This is known as section a). Using the most recent research on materials, procedures, and designs that offer the best therapeutic outcomes while taking the patient's demands into consideration is what is meant by this in RPD treatment.

Adopting New Materials and Technologies: Compared to traditional methods, EBP promotes the use of newer, more effective materials and technologies (such as CAD/CAM fabrication, digital scanning, and high-performance polymers like PEEK or flexible resin materials) that provide better durability, aesthetics, and comfort.

In order to enhance clinical decision-making in prosthodontics, including RPD therapy, this seminal study presents the fundamentals of evidence-based practice.

4. Stressing Thorough Patient Evaluations
a) Holistic Evaluation: A thorough evaluation of the patient's oral and systemic health, socioeconomic situation, psychological condition, and personal objectives is part of patient-centered care in RPD treatment. With this method, the treatment plan is guaranteed to be comprehensive and take into account all variables that could affect the result.

b). Frequent Patient Feedback and Follow-Up: Frequent feedback sessions and follow-ups enable ongoing treatment to be customised to the patient's changing demands, guaranteeing sustained prosthesis satisfaction and optimal function.[30]
In order to achieve high satisfaction levels in RPD therapies, this study highlights the significance of thorough patient assessments in prosthetic treatments. It also demonstrates the importance of thorough patient evaluation and follow-up.

5. Better Patient Education and Communication
Effective communication and education regarding RPD alternatives, benefits, limitations, care requirements, and potential problems are crucial educational interventions that enable patients to make well-informed decisions. Training on the appropriate use and upkeep of RPDs is another aspect of education that contributes to maintaining oral health and preventing problems.

Better therapeutic outcomes can be achieved by educating patients, since they are more likely to feel at ease with their therapy, which in turn reduces anxiety and improves compliance.

6. Using Techniques That Are Minimally Invasive
Less Invasive Treatment Options (a): Research has shown that minimally invasive procedures can reduce discomfort, preserve natural tooth structure, and shorten recovery times. These procedures are in line with patient-centered treatment. These objectives can be met in part by employing strategies including digital workflow integration, adhesive attachment utilisation, and selective tooth preparation.

b). Higher Acceptance Rates: RPDs are more widely accepted since patients typically favour less intrusive procedures because they are linked to less side effects, less discomfort, and faster recovery periods.[32]

7. Consistent Monitoring and Succession Planning for the Best Results
a) Continued Care and Modifications: In order to guarantee that the RPD meets the patient's requirements and expectations, patient-centered care entails routine monitoring and modifications. Based on the patient's input and the physician's findings, adjustments may be made to the fit, occlusion, or aesthetics.

b). Proactive Problem-Solving: Timely check-ups provide the prompt detection and treatment of any issues that may arise, such as gum irritation, pressure sores, or misalignments, which can enhance the results in the long run.

VI. INTEGRATION OF RPDS ASSISTED BY IMPLANTS

Implant-assisted removable partial dentures, or IARPDs, are becoming more and more common when implants and RPDs are combined. In situations where there is severe edentulism or weakened dental arches, this method enhances the retention, stability, and functionality of RPDs.

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Due to its capacity to promote retention, stability, and patient satisfaction, implant-aided removable partial dentures (IARPDs) are a substantial improvement over traditional removable partial dentures (RPDs). By addressing a number of issues, including poor retention, instability, and pain related to traditional designs, the use of strategically positioned implants improves the functional and aesthetic outcomes of conventional RPDs.

1. Better Capture and Consistency
a). Enhanced Retention with Implants: The primary means of retention for conventional RPDs are clasps, rests, and frictional contact with abutment teeth. These systems frequently fail to offer sufficient stability, particularly when there is a great deal of alveolar bone loss. In order to significantly reduce the movement of the prosthesis while in use, implants work as extra abutments that can offer substantial support and retention for the denture.

b) Decrease in Denture Displacement: Implants stop the RPD from moving, especially in cases of distal extension when the denture base rotates around the fulcrum line. In the lower arch, where traditional RPDs frequently have retention issues, this is especially advantageous.[21]
In comparison to patients with traditional RPDs, this study showed that patients with implant-retained RPDs (IARPDs) reported much higher satisfaction with stability and retention, particularly in situations involving mandibular distal extension.

2. Improved Function and Efficiency of Mastication
a). Better Masticatory Performance: IARPDs stabilise the denture while chewing, which leads to an improvement in chewing efficiency. The extra stability provided by implants lessens the denture's movement both vertically and horizontally, enhancing chewing efficiency and lowering the possibility of food impaction and discomfort in the mouth.

b). Optimal strain Distribution: By distributing occlusal stresses more fairly throughout the prosthesis and the native dentition, implants help lessen the excessive strain on any one abutment tooth or soft tissue region.†
This research shows that by offering a stable axis of retention and enhancing overall chewing efficiency, even a single midline implant can greatly improve the comfort and functionality of a mandibular denture.

3. Less Stress on Adhesion Teeth and Soft Tissues
Abutment teeth and soft tissues are preserved. Conventional RPDs can place a great deal of strain on these structures, which can cause discomfort, periodontal problems, and alveolar bone resorption. Implant integration distributes the stresses between the implants and the surrounding dentition, lessening the strain on individual abutment teeth and preventing soft tissue damage.

Resorption of the Alveolar Ridge can be slowed down or stopped by implant support. This is especially useful in situations where bone loss could be accelerated by typical RPDs because of unequal or severe loading.

In comparison to patients wearing traditional detachable prostheses, this study indicated that patients with implant-supported prostheses had less soft tissue problems and reduced bone resorption.

4. Enhanced Patient Acceptance and Comfort
Improved speech and appearance, less movement of the denture, and the removal of cumbersome connectors and palatal covers are just a few of the ways that using implants in conjunction with RPDs leads to a higher level of patient satisfaction.

Reduction of Psychological Discomfort: In comparison to traditional RPDs, IARPDs frequently have a more natural feel and appearance, which can boost patients' social confidence and psychological comfort.[36]

Because implant-retained overdentures are more comfortable and retain better than conventional dentures, this randomised clinical research found that patient satisfaction ratings were much greater with these restorations.

5. Increased Design Flexibility and Optimal Looks
a) Improved Aesthetics and Minimisation of Visible Clasps: IARPDs frequently minimise or do away with the requirement for visible metal clasps, improving the prosthesis's overall aesthetic appeal. A more understated and aesthetically pleasing design is made possible by the implants, which offer the required retention.

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b) Less Invasive Preparations May Be Necessary: The support provided by implants may also eliminate the need for extensive abutment tooth preparations, protecting natural tooth structure and allowing for a more conservative course of treatment.

6. Decrease in Prolonged Upkeep and Difficulties
a). Requirements for Long-Term Adjustments are Generally Lower for IARPDs than for Conventional RPDs. This is because the implant support stabilises retention and reduces denture movement and soft tissue irritation.

b). Lower Complication Rate: Implants operate as a solid base to assist avoid frequent problems with traditional RPDs, include denture fractures, painful spots, and damage to the teeth of the abutment.[38]

7. Adaptability in Medical Applications
a). Adaptability to Different Clinical Situations: IARPDs can be tailored to a variety of clinical situations, such as patients who have a large loss of alveolar bone, insufficient tooth support, or who are not candidates for fixed prostheses because of anatomical or economical limits.

b). Customised Treatment Plans: In both totally and partially edentulous arches, implants can be positioned strategically to support RPDs, offering a customised strategy that is tailored to the specific requirements of each patient.[39]

VII. SUMMARY

By conserving the natural tooth structure, minimizing discomfort, and quickening recovery times, minimally invasive approaches are changing the way that root canal therapy is administered. These methods are in line with patients' desires for more conservative, less invasive treatment alternatives.

Evidence-based practice and patient-centered care place a strong emphasis on using the most recent clinical research to inform treatment decisions, involving patients in the decision-making process, and creating personalised treatment plans. With the help of these developments, the paradigm for RPD operations is changing from a traditional, one-size-fits-all strategy to a more advanced, patient-centered model that puts an emphasis on functionality, comfort, accuracy, and long-term oral health. These developments hold the potential to provide better results and increased satisfaction for patients and physicians as the sector develops.

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