

Implant Supported Overdenture: Psycho-Social Advantages

Sreosee Das¹, Dr. Purnendu Bhusan², Kumari Taniya³, Abhilipsa Mangaraj⁴, Suhita Koley⁵

Kalinga Institute of Dental Sciences, Bhubaneswar, Department of Prosthodontics, Crown and Bridge

Abstract: Oral treatment that depends on changing missing teeth by method of fixed dental prosthesis is a commonly used operation to maintain oral health. Because of high predictability and prolonged success rate, researchers pay attention to implant, implant retained, and implant supported processes obtaining popularity to supplement missing teeth either single tooth or complete arc of teeth. ISO, is an alternative measure that has an operational shortcoming incorporated with the utility of classical dentures which are widely performed leading to enhancing patients satisfaction, comfort and masticatory performance. This review is intended to keenly observe the ISO from a patient satisfaction and complication perspective. Along with the advantages and the challenges associated with suitable and convenient medicinal procedures. The research also highlighted the review with the significance of oral health and quality of life, by observing distinct parameters of ISO. The main concerns regarding satisfaction, complication were revolving around appropriate oral communication, swallowing, chewing effectiveness, and post-insertion assignment. Further, oral implant treatment is specifically and particularly significant for mandible to support denture stability. Eventually, in this review it may be extracted that ISO performs well in comparison to CCD. further analysis the complication and satisfaction demographic factors like age, gender, education, lifestyle and income play vital and meaningful roles. Moreover, the suggestion is also highlighted in this review for clinical enrichment regarding prosthesis.

Keywords: Oral implant treatment, Implant Supported Overdentures, Complication associated with ISO, Patient's Satisfaction with ISO and Advantages of ISO

1. Introduction

Edentulism, a state where natural teeth are lost as well as a resorption of alveolar bone, is well-advised as a dental impairment that has several limitations on phonetic, self-esteem, mastication and perceived aesthetics [1]. It is negatively associated with psychological and social adverse impact on humans. Traditionally, complete edentulous sufferings have been rapidly rehabilitated with entire dentures, because of loss of maxillary bones, sufferers are often found restricted while experiencing a deficiency of prosthetic retention, stableness, and mastication complication which is eventually responsible for adverse oral wellness and its association with living parameters [2].

Therapeutic standard for arrangement for the rehabilitation of entire identities sufferers are "Conventional Complete Dentures" (CCD); however, in the present situation there is enhancement and rehabilitation with "Implant Supported Overdentures" (ISO), because of increasing awareness among the sufferers [3]. Oral treatment that depends on changing lost teeth by method of unchangeable dentistry prosthesis is a commonly used operation to maintain oral health. Because of high predictability and prolonged success rate, researchers pay attention to implant, implant retained, and implant supported processes obtaining popularity to supplement missing teeth either single tooth or complete arc of teeth [4].

ISO, is an alternative measure that has an operational shortcoming incorporated with the utility of classical dentures which are widely performed leading to enhancing patients satisfaction, soothe and chewing activities. Both maxillary and mandible ISO have been demonstrated as a predominating approach selected by patients for dealing with continual difficulties that embrace retention, stableness

in classical dentures, and inappropriate remainder tissue sustenance [5]. The evidence shows that average bone resorption of about 4 millimetres was used in the initial year after missing tooth and afterward it declined to 0.5 mm annually. This indicates after accomplishing five year duration of treatment, in all 5.2 millimetres of vertical bone column declined under classical treatment of dentures [6]. In this scenario oral implant treatment is specifically and particularly significant for mandible to support denture stability.

Advantages of Implant Supported Overdenture:

The approach possesses several characteristics like its effectiveness, predictivity, and reliable medication procedure, also illustrated in sites where the prosthetics are sub average and steady and with a striking gag reflex [7]. ISO supports benefits over classical denture treatment by enhancing operation and encouraging comfort level for the sufferer [8].

- It was cited that oral implant treatment supports edentulism by helping in alveolar bone conservation.
- Several incidences indicate that ISO not only improves the bone level revolving around the implant control but also improves its vertical bone height [9].
- Another advantage of implant retained overdenture involves better occlusion, improve occlusal load direction, intensify operation of occlusion and control its vertical dimension.
- ISO has preminent retention to classical dentures that support an attachment functioning like a bar, ball, magnet, and locator.
- Another beneficial utility of implant retained overdenture was its improved cumulative successive rate of around 95.4%, which was a better value rather than the satisfaction rate in mandible in comparison with maxilla [6].

- It improves retention while improving soothe and savour by alloying step-down in a palatal coverage [10].
- Significant betterment was incorporated with biting and chewing effectiveness along with oral functioning to remain stable overtime.

It is prominent to identify the prosthetically driven implant location as being most crucial for the feasibility of ISO. It promotes greater excess for dental cleanliness in comparison to fixed implant connections. The capability to conveniently take away the prosthesis is also beneficial when intervening in tooth tissues, specifically those who are generally producing high risk for oral carcinoma [12, 14].

In the present scenario, higher cases of edentulism are occurring in masses with miserable social-economic situations and there is a crucial requirement to decline the expense of reclamation with dentures [1.13]. With the intention to provide accessibility and availability of suitable medicinal assistants at an affordable price, technology and scientists worked hand on hand. Individual satisfaction with the denture relies predominantly on their capability to talk, mastication and obtain an overall appropriate appearance after accomplishing the medication. Research indicates that the impact of implants supported overdentures can lead to OHRQoL [2, 15]. Evidence also exhibited that complete denture research explored correlation among patient satisfaction and quality of life. Michaud et al., indicating that the choice of denture carriage position and the actual denture carrying perceive itself are the same to be more critical in exploring patients comfort with complete dentures. They also emphasised that patients' satisfaction correlated with prosthodontic procedures that significantly and optimistically and corporate with OHRQoL value [13].

In the usual medical situation of edentulous patients obtaining the prosthodontic procedure, a pretty number of research work is associated with medicinal domain but when it comes to satisfaction and complications very few number

of studies were explored particular theme. Thus this review is intended to keenly observe the ISO from a patient satisfaction and complication perspective. Along with the advantages and the challenges associated with suitable and convenient medicinal procedures. The research also highlighted the review with the significance of dental wellness and comfort, by observing distinct parameters of ISO.

2. Discussion

Complication associated with ISO

For each and every patient, tooth loss is responsible for preventable oral disorders. It is significant to identify the capability of patients to handle tooth implants from a distinct risk-centric viewpoint as dental implants are frequently considered as a challenge in comparison with classical and other approaches for preventing and diagnosing dysfunction [16-19]. These risks involve chronic oral hygiene and their medical conditions, specifically with respect to dental wellness and adroitness, cigarette habits, pyorrhea and other assessments of periodontal disorder. All these risk oriented parameters are incorporated to intensify the risk of implant related complications [15].

The complication correlated with ISO can be bifurcated into mechanical and biological. The most normal reason for an unsuccessful ISO was depending on the type of implant adherence mechanism and prosthesis [16]. The table describes several incidences of mechanical and biological complications and the challenges correlated with ISO. It also demonstrates possible aetiology and how they can be managed. Several clinical research exhibits three planning or minimum sustain frameworks to early resolve the challenge in order to preserve implant wellness as well as assure appropriate sustenance of the processes and conveniently satisfy patients [17, 18].

Table: Complications related with ISO (self-analysed)

Complications	Possible aetiology	Management
Loss of Retention	Worn insert Deactivated insert	Replacement of insert Activating insert with desirable force
Poor Stability	Loose abutment Ridge resorption	Tighten abutment Relining consideration
Painful fit surface	Occlusal discrepancy Either unsmooth surface or impressive error	Assess static and dynamic occlusion. Polish denture and using pressure indicating paste
Fractured Teeth	Occlusal discrepancy Inappropriate interocclusal space	Repair and adjust occlusal fit. Rebuilt retention system
Peri-implantitis	Oral hygiene Unhygienic prosthesis design Risk related to peri-implant disorders	Peri-implant oral health Oral hygiene guideline Periodontal debridement

As proclaimed by the British Society of Periodontology a standard guideline which mentioned scheduled monitoring of peri-implant to achieve oral health. This includes keenly observed four to six pocket charting at implant sites regarding their appointments, assessment for bleeding and suppuration [19]. It should be noted that initial medicinal facilities should be provided at a preliminary stage based on the available standards. The study [20] mentions that 28% of the individuals will develop peri-implantitis. For maintaining oral health, preventional measures play a crucial

role in protecting against implant disorders. In order to enhance awareness among the dysfunctioning patient need to obtain appropriate education regarding oral hygiene and dental implants. The things that should be kept in mind is achieving oral health and oral hygiene should be monitored regularly [21].

Mechanical plaque managing around long standing implant attachment can be appropriately accessed through a "tiny electric toothbrush head, single tufted brush, and interspace

brush", or employ a mixed approach for support. The utility of the interspace brush is guaranteed plaque control between the implants and the use of a bar is required to supplement the floss. Dentures require to clean teeth with a toothbrush or specific cleanliness activity twice a day to remove plaque biofilm. For supportive mechanisms chemical plaque control can be used to rinse mouth to maintain oral hygiene specifically for those who are unable to manage their hygiene with mechanical activities.

In comparison to ISO abutment strategies there is a limited number of studies that are related to mechanical complications. A researcher, Burlibasa et al., (2012) cited under the period of 5 years the successor rate of prosthodontic procedure was distinct for different components such as for magnet it was 83% for locator it was 78% for titanium matrix ball abutment the success rate was 73% and lowest for the gold matrix ball abutment which was 50% [22]. In order to identify the complications, Vere et al., (2012), illustrated that the most usual challenge was replacement of insert loosening of abutment screw re-lining of ISO and fracture of denture teeth. Other than these highlighted complications there are several other challenges like Peri-implant tissue hyperplasia [23]. The challenges that are non frequent in nature and did not come across more commonly are fracture of ISO and fracture in the screw. Easy maintainable complications that lead to unplanned knocking at the door of the dentist such as denture adjustment, loosening of implant abutment [24]. Among all other component locator attachment is frequently used scheduled for ISO as mentioned by Vere et al., (2014).

The study [17] comprehensively explores prosthetic complications with two implant retained mandibular overdentures. The finding shows that the most usual complication was revolving around wearing a Rhein, followed by bar screw losing. The outcome also highlighted that the service life of cement retained prosthesis was more prolonged in comparison to screw-retained bars.

Patient's Satisfaction with ISO

In order to identify patient satisfaction with ISO several studies utilise demographic factors like age, gender education and lifestyle to evaluate satisfaction level of oral health. One of the studies indicated that patients having higher education depicted enhanced levels of satisfaction with their prosthesis. The trend illustrates that women are not as satisfied as men counterparts even if they did not possess any difficulties [2]. In contradiction another study highlights that women have satisfaction and their OHIP score is higher in comparison to male participants. Meanwhile, several studies indicate that women are less satisfied in comparison to men toward prosthesis procedures [7, 13]. When looking for conventional approaches, it is determined that men have lower chewing capabilities in comparison to women.

Another study did not find any gender differences in their findings regarding satisfaction with dental conditions. The reason behind the difference in satisfaction was prominently because of pain and operation. In this context non surgical treatment is more preferable in female patients specifically in the elderly group. The group of people who belong to an

older age shows poor satisfaction levels because of their physical and dental conditions. The research [25] did not find any correlation between patient age and their satisfaction level. Pan et al., cited that patients who were having mandibular implant retained over dentures were found to be more satisfied in comparison to the patients who wore complete dentures. Another study also put weightage in the context and demonstrated that little improvised denture satisfaction was explored with respect to ISO in comparison with CCD. Further mandibular ISO vitality enhances retention, stability, comfort and masticatory effectiveness in comparison with CCD. The impact of oral health on satisfaction can be determined by improvement in mandibular rather than CCD, majorly because ISO demonstrates less challenges and complications instead CCD as identified by using OHIP scale [27, 28].

Sample	Followup	Outcome	Reference
15	2 Months	Enhance satisfaction with stability and masticatory	[27]
15	1 month	Chewing effectiveness improved	[28]
15	1-10 years	Highly satisfied with ISO	[1]
10	1-10 years	Prostheses improve ISO and OHRQoL	[5]
467	-	Complications with ISO lead to decreased satisfaction.	[6]
24	12 months	No difference in ISO and OHIP-14	[7]
255	6-12 month	Chewing capability and oral condition associated with satisfaction and OHQoL.	[13]
11	1-10 years	Fracture being the most common complication	[16]
52	7-12 years	High satisfaction and low discomfort	[18]
60	0-6 years	High comfort, improved satisfaction	[25]

OHQoL can be increased by enhancing the satisfaction among the patients regarding dentures as illustrated in several in-vitro research where the main concerns regarding satisfaction were oral communication, swallowing, chewing effectiveness, and post-insertion assignment [1, 2]. There are several other parameters that also play an appropriate role in exploring patient satisfaction such as technique utilised for the procedure, type of denture, physiological status of the sufferer, expectations of the individual and the stability [13, 17] Among all, the most significant and crucial interventions from patient perspective was expectation and stable mandibular denture. The individual has different perceptions regarding satisfaction, some of them wearing complete dentures, some have challenges. Some patients do not find any challenge while some fail to feel comfort after the treatment. The possible reason behind different views is the variation in the dental anatomy of individuals. Eventually the finding revealed that mandibular implants supported overdenture significantly performed better in comparison to complete dentures [5-9].

Awareness and education are also instigating components that act as a crucial role in enhancing the satisfaction level of patients. It was suggested that patients should be aware prior regarding therapy procedures covering every domain from psycho-social advantages to economic factors. It was identified that patients who did not have adequate education,

belonging from low income growth were more satisfied with the aesthetic, speech, and chewing capability of dentures [15-19]. In comparison to the contradictory study which reveals that higher education levels give higher levels of satisfaction with prostheses. The consequences reveal that there is incorporation with lower socioeconomic status and poor well-being. Patience with higher education appropriately understands more about the functioning of prosthesis implants, their advantages, loopholes, maintenance, and care. It is the responsibility of the dentist to be aware of the challenges associated with treatment and the procedure followed during therapy [13-18].

Advantages of ISO

ISO provides a distinct long term benefit in comparison to the conventional approach of replacement of lost teeth. This benefit is specifically apparent when treating individuals who did not have an appropriate number of teeth or those who lost every tooth have taken CCD. Some individuals assisted or preserved for their dentures and it is known as implant overdenture. The advantages and the benefits from a patient perspective can be classified into psycho-social, functional, and biological in nature [26].

Psycho-social benefits

The benefits that come under this criteria include improved appearance, satisfaction of the patient and life sustaining quality. Dentures that are assisted or preserved by an implant can improve a patient's overall look and be seen in their smile, talk, etc in comparison to CCD [1-6]. Because such dentures are stabilised by an implant and provide strengthening to the teeth and an optimistic aesthetic position without causing denture imposition and mobility when the oral muscles contract. The patients who went through ISO demonstrated a better satisfaction level and QoL rather than in CCD. The lifestyle of patience is usually affected by complications, pain and restlessness. Individual satisfaction with the denture depends prominently on their capability to talk, mastication and obtain an overall appropriate appearance after accomplishing the medication [25-28]. The approach possesses several characteristics like its effectiveness, predictivity, and reliable medication procedure, also exhibited in suits where the prosthetics are sub average and steady and with a striking gag reflex. ISO supports benefits over traditional denture treatment by enhancing operation and encouraging comfort level for the sufferer.

Functional benefit

Functional benefits of ISO improve the biting or chewing quality of the patient in comparison to conventional complete denture. Patient can eat anything that comes under his food choice in a broader array and it eventually impacts on its nutritional intake. Patients can eat those items that are found hard to eat, after taking the appropriate ISO procedure [26]. Traditionally, complete edentulous sufferings have been rapidly rehabilitated with entire dentures, because of loss of maxillary bones, sufferers are often found restricted while experiencing a deficiency of prosthetic retention, stability, and mastication complication which is eventually responsible for adverse oral wellness and its association with living parameters [13-18]. Significant betterment was incorporated with biting and chewing effectiveness along

with oral functioning to remain stable overtime. It is prominent to identify the prosthetically driven implant location as being most crucial for the feasibility of ISO. It promotes greater excess for dental cleanliness in comparison to fixed implant connections.

Biological Advantages

The advantages of ISO include safeguarding of remaining alveolar bone, enhancement in chewing effectiveness, retention improvement, and denture long lasting. With respect to determining the influence on mental and daily quality of life, mandibular implant retained over denture was performed significantly in comparison to CCD. It was cited that oral implant treatment supports edentulism by helping in alveolar bone conservation. Several incidences indicate that ISO not only improves the bone level revolving around the implant control but also improves its vertical bone height [3-7]. Another advantage of implant retained overdenture involves better occlusion, improve occlusal load direction, intensify operation of occlusion and control its vertical dimension. ISO has fine retention to classical dentures that support an attachment functioning like a bar, ball, magnet, and locator. Another beneficial utility of implant retained overdenture was its improved cumulative successive rate, better value rather than the satisfaction rate in mandible in comparison with maxilla [8-11]. It improves retention while improving soothe and savour by alloying step-down in a palatal coverage. The capability to conveniently eliminate the prosthesis is also beneficial when intervening in dental tissues, specifically those who are generally producing high risk for oral carcinoma [27].

3. Conclusion

In the usual medical situation of edentulous patients obtaining the prosthodontic procedure, a pretty number of research work is associated with medicinal domain but when it comes to satisfaction and complications very few number of studies were explored particular theme. Thus this review is intended to keenly observe the ISO from a patient satisfaction and complication perspective. Along with the advantages and the challenges associated with suitable and convenient medicinal procedures. The research also highlighted the review with the significance of oral health and quality of life, by observing distinct parameters of ISO. With the intention to provide accessibility and availability of suitable medicinal assistants at an affordable price, technology and scientists worked hand on hand.

ISO provides a distinct long term benefit in comparison to the conventional approach of replacement of lost teeth. This benefit is specifically apparent when treating individuals who did not have an appropriate number of teeth or those who lost every tooth have taken CCD. Patient satisfaction with the denture depends prominently on their capability to speak, chew and obtain an overall appropriate appearance after accomplishing the medication. Research indicates that the impact of implants supported overdentures can lead to OHRQoL.

Patient satisfaction plays a significant role in any therapeutic analysis except the clinical assessment. It is very crucial to intervene in the sufferer's experience which revolves around

the way patients feel comfort or discomfort with the treatment. ISO several studies utilise demographic factors like age, gender education and lifestyle to evaluate satisfaction level of oral health. Patience with higher education appropriately understands more about the functioning of prosthesis implants, their advantages, loopholes, maintenance, and care. The main concerns regarding satisfaction were oral communication, swallowing, chewing effectiveness, and post-insertion assignment. There are several other parameters that also play an appropriate role in exploring patient satisfaction such as technique utilised for the procedure, type of denture, physiological status of the sufferer, expectations of the individual and the stability of the day.

The review keenly observes the complication criteria associated with ISO and determines some of the usual causes for difficulties from a patient's perspective. The difficulties involved with chronic oral hygiene and their medical conditions, concentrates on dental wellness and adroitness, cigarette or alcohol habits, pyorrhea and other assessments of periodontal disorder. All these risk oriented parameters are incorporated to intensify the risk of implant related complications In order to identify the complications the most usual challenge was replacement of insert loosening of abutment screw re-lining of ISO and fracture of denture teeth. Other than these highlighted complications there are several other challenges like peri-implant tissue hyperplasia.

Eventually, in this review it may be extracted that ISO performs well in comparison to CCD. further analysis the complication and satisfaction demographic factors like age, gender, education, lifestyle and income play vital and meaningful roles. These parameters except the clinical factors are assisting to intervene the complications and thriving further to resolving them.

4. Suggestion

Awareness and education are vital ingredients to sustain a quality living and act as a crucial role in enhancing the satisfaction level of patients regarding ISO and prosthesis. It was suggested that patients should be aware prior regarding therapy procedures covering every domain from psychosocial advantages to economic factors. It is the responsibility of the dentist to be aware of the challenges associated with treatment and the procedure followed during therapy.

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