Review of literature
Chen et al\textsuperscript{24} (2016) conducted a cross sectional study on patients receiving obturator prostheses after maxillectomy. Totally 29 maxillectomy patients were selected, among them 16 are males & 13 are females and the selected patients were restored with obturators.

In order to evaluate the self-reported QoL and prosthesis function, two scales were considered such as Obturator Functioning Scale (OFS) and the University of Washington Quality of Life scale version 4 (UW-QoLv4).

Factors related to Patient’s age, defect size, postoperative radiotherapy (RT), neck dissection, and dentition were also used to assess the demographic and treatment variables. From 29 patients, 16 had a Brown Class 2a or smaller defect and 13 had a Brown Class 2b or larger defect. When analyzing Brown Class 2a or smaller defects, mean OFS score was found be lower compared to Brown Class 2b or larger defect.

They concluded that HRQOL in patients with obturator reconstruction, the Postoperative radiotherapy was the strongest predictor whereas the defect size only slightly influenced the obturator function but not the overall QoL.

Chen et al\textsuperscript{25} (2016) investigated the patients with unilateral maxillary defects about the obturator prostheses function. Totally 49 unilateral maxillary defects patients were selected. Of which 28 twenty eight patients were rehabilitated with three types of obturator prostheses. Among the 28 patients, 11 patients received retentive obturator prosthesis using stud attachment. Conventional retained obturator prosthesis was given 9 patients, and retentive obturator prosthesis using magnetic attachment advised for 8 patients. Obturator Functional Scale (OFS) questionnaires was used to assess the oral function. The mean OFS score was found to be 80.
They concluded that the addition of attachments to obturator prosthesis enhances retention and improves oral function of patients.

**Breeze et al**\(^{26}\) (2016) conducted a prospective study on Health-related quality of life after maxillectomy. In this study, 39 patients were assessed who were restored with obturator after maxillectomy. Oral health related assessments from all patients were analysed. From the data obturator rehabilitation and flap reconstruction were compared in the study.

The sub-group analyses were made using paired t tests and analysis of variance (ANOVA). They conclude that obturator prosthesis along with flap reconstruction was considered to be a better treatment plan in rehabilitation.

They also suggested that the size of the vertical defect and the use of postoperative Radiotherapy had no impact on HRQol.

**Seignemartin et al**\(^{27}\) (2015) conducted a retrospective cross-sectional study on Speech Predictability of Quality of Life in patients with Obturator Prosthesis after Maxillectomy. Factors such as performance status scale and salivary rate were assessed.

They concluded that partial removable prostheses had significant improvement in HRQol.

**Hussain et al**\(^{28}\) (2014) investigated on Quality of life in oral cancer patients after Provision of maxillary obturators. Totally, thirty two patients were selected in this study whose age ranges from 15-74 years. Among them; 25 patients were males and 7 were females. Before the provision of Obturator prosthesis, A Questionnaire based on Oral Health Impact Profile -14 (OHIP-14) was used and then 6 months after the Obturator provided to assess changes in QoL. Using SPSS software, data were collected and
statistical analysis was done by Wilcoxon Signed Ranks Test and results were obtained. It was finally concluded that with the provision of maxillary obturators there was markedly improvement in functional parameters such as mastication, speech and aesthetics.

Khan et al\textsuperscript{29} (2014) conducted a Cross-sectional study on subjective assessment of Obturator functioning in patients with hemimaxillectomy. Totally 50 hemimaxillectomy patients were included in the study. 2 weeks after the insertion of the obturator, a questionnaire ‘Obturator Functioning Scale’ was administered to these patients. The 5-point Likert scale was used to record the responses for the questions. And stated that the most commonly found difficulty in the patients using obturators was difficulty in chewing foods followed by dry mouth, leakage while swallowing, numb upper lip, avoidance of family and social events, dissatisfaction with looks, funny looking upper lip, difficulty in inserting the obturator, difficulty in talking in public, and so on. They stated Obturator prosthesis provides better functioning in speech and aesthetics but it was found that the mastication and swallowing were not highly efficient.

Chigurupati et al\textsuperscript{11} (2013) conducted a Retrospective, cross-sectional pilot study on Quality of life after maxillectomy and prosthetic obturator rehabilitation Study. Totally twenty three (23) rehabilitated maxillectomy patients with prosthetic obturator were selected. Three questionnaire scales were used in the study. Among the scales, the authors found significant QOL scores in obturator functioning and mental health inventory scale. It was concluded that, in patients with maxillectomy and reconstruction, radiation therapy was the most important predictors of HRQol.
Kumar et al. (2013) conducted a longitudinal study on quality of life with obturator prostheses. Totally Thirty Patients only with maxillary defects were selected. The two questionnaire scales consisting of 35 questions were used in this study. Parameters such as physical, social and mental health were considered. They concluded Obturator prosthesis is the better treatment option in improving the patients QOL.

In 2013, Mesko ME et al. studied the effectiveness of OHIP –Edent & GOHAI (Geriatric Oral Health Assessment Index) in a partial & complete denture wearers. And stated that OHIP –Edent was more sensible than GOHAI, and exceptions were Kennedys Class I & II situations. Lower complete denture patients had higher OHRQol impairment using OHIP –Edent. Individuals whose age ranges over 60 years showed underestimated OHRQol using GOHAI.

In 2012, A.M. Kreeft et al. evaluated 32 maxillectomy patients with prosthetic obturation regarding function. Outcomes were found to be in high relation to extent of the resection under Brown Maxillectomy classification, the presence of dentition and adjuvant radiotherapy history of the patients. And concluded that, oral function with obturator had similar satisfactory results with patients receiving complete denture. They also reported that oral function was not affected by Size of the defect. A positive influence on mastication and subjective outcomes was due to the presence of residual dentition.
In 2012, Pierre-Luc Michaud et al\textsuperscript{32} evaluated the denture satisfaction and oral health-related quality of life (OHRQol) in complete denture patients. 255 edentate individuals who participated in a randomised clinical trial were selected and data was collected from these elder individuals. Oral Health Impact Profile (OHIP-20) questionnaire was used to gather OHRQol ratings and Outcomes were measured prior to treatment, then 6 and 12 months after delivery of the new prostheses. It was found that there was a highly positive association exists between oral health-related quality of life and denture satisfaction. The determinants of denture satisfaction best associated with OHRQol are chewing ability and oral condition.

In 2011, Depprich et al\textsuperscript{33} investigated on Evaluation of the quality of life in patients with obturator prostheses. Standardized questionnaire was given to the patients among the patients sleeted in the study 31 patients completed the questionnaire. They concluded that QOL was affected by function of the prosthesis and physical factors such as mastication, phonetics and aesthetics. They reported the best treatment option for maxillectomy was obturator prostheses.

In 2006, Koyano K et al\textsuperscript{34} investigated the masticatory pattern by analysing the chewing performance & occlusal force in twenty (20) obturator prostheses patients with 20 dentate patients. They concluded that no significant difference was found between two groups. A poor predictor of performance was masticatory bite force. For effective masticatory performance, the presence of critical residual dentition was combined with a well-functioning obturator. The OHIP-EDENT consists of 19 statements. These statements
were derived using an item impact method. Finally found to have good measurement properties, and made it more appropriate for using in the clinical situations.

**In 2009 Irish et al**\(^3\) conducted a cross-sectional study on quality of life with forty maxillectomy prostheses patients. The correlation between The Obturator Functioning Scale (OFS) and 4 general quality of life measures were used. And stated that leaching of foods during swallowing was seen in many patients. Patients with chewing and speech problems always tend to avoid social life. These results support the findings that good obturator function and better quality of life are interrelated with each other.

**Al –Salehi et al**\(^3\) (2007) describes a case in which magnetically retained, implant supported obturator was used to restore the hemimaxillectomy defect. The oral health impact profile before and after treatment showed marked diminution. There was many adverse impacts in 2 weeks post placement and during review six months later. Hence a kind of magnetic retention was used to overcome the problems created by the zygomatic and conventional maxillary implants. And concluded that the patient’s quality of life (QoL) was improved by the provision of this prosthesis.

**Rieger et al**\(^3\) (2003) evaluated the relationship between patient satisfaction and speech outcome with Maxillary obturators. In the 20 patients after receiving a definitive obturator, Acoustical, aeromechanical, and perceptual measurements of speech were collected. Satisfaction level of the patients with their obturator was measured with the Obturator Functioning Scale (OFS), later.
It was revealed that lower speech intelligibility outcomes were related to overall poorer perception of speech function on the OFS whereas poorer aeromechanical speech results were associated with patient-reported avoidance of social events. Background patient characteristics were also significantly related to several responses.

**Rogers et al.** (2003) conducted a cross sectional study on health-related quality of life in maxillectomy and to compare obturation and free flap reconstruction. Totally, 39 patients underwent maxillectomy for malignant pathology. Out of the 28 patients, 10 underwent obturation and 18 underwent free tissue reconstruction. In order to test aspects of health-related quality of life and function, eight questionnaires were used. After testing the aspects it was revealed that there was no major difference between two groups. Obturator patients have more self-conscious with their appearance and upper anterior teeth, hence less satisfied with their upper dentures, and its function due to pain and soreness in their mouth.

**Allen et al.** (2001) investigated the oral health outcomes of three different treatment groups using the OHIP and their levels of denture satisfaction. After three months of treatment, new conventional dentures had a more significant impact on OHRQOL when compared to conventional complete dentures. There was overall improvements in their OHRQOL scores. The requested subjects and subjects who received implants also reported similar results. The Oral Health Impact Profile for Edentulous subjects (OHIP-Edent) (Allen and Locker, 2002).

A new subset of 19-OHIP statements specifically for edentulous patients was developed. The item impact method is used to select items which are more relevant to
patients with Edentulism. There are five categories of response per item are 1) never, 2) hardly ever, 3) occasionally, 4) fairly often and 5) very often. And scored from 0 for never to 4 for very often, with lower scores representing a better OHRQOL. The reliability and validity was also tested.

**Kornblith A et al**\(^{20}\) (1996) studied the Quality of Life in Patients receiving Obturator Prosthesis on forty seven patients with maxillectomy with or without obturator. The telephone interview was conducted among the patients out of which 94% had some soft palate resection and 66% partially edentulous. In order to measure the quality of life in maxillectomy patients, five scales were used. They concluded that the extent of the defect was the most important in obturator functioning.

**Chalian V et al**\(^{40}\) (1974) studied the Speech Intelligibility of six completely edentulous Acquired Maxillary Defects with or without obturator. And found that Mean intelligibility without obturator ranged from 58-62% and Mean intelligibility with obturator ranged from 92-98%. Hence, concluded that for all type of speech stimuli, obturator prosthesis was highly intelligible.

**Brown et al**\(^{41}\) (2000) Conducted a study on quality of life among 16 patients with class 1 and 2a defects and 14 patients with class 2b plus defects. 8 Patient having class I and II a defects had reconstruction and 8 restored with obturator. In class 2b plus category only 11had reconstruction surgery and rest of the 3 were given obturator. The cumulative score between class 1 and 2a defects and class 2b plus was compared.
It was found that significantly lower cumulative score was seen between the categories. The masticatory and speech score were lower in extensive defects. They conclude that rehabilitation is more difficult in extensive defects.

Nesrin Sahin et al\textsuperscript{42} (2005) have described the fabrication of cast metal guidance flange prostheses with maxillary and mandibular removable partial dentures having buccal guidance flanges on the non-defect side. During function it engages with each other. For controlling mandibular deviation and to coordinate masticatory movements, the supporting flanges are fabricated on the defect side of both the maxillary and mandibular frameworks.

Chalian et al\textsuperscript{43} (1971) have described the fabrication of a guide flange prosthesis with maxillary and mandibular cast removable partial dentures. The frameworks of cast partial dentures are designed to limit the mandibular deviation and to be in contact during function. An inverted u shaped lower flange slides against an upper horizontal bar on the non-defect side and with limited vertical movement during mastication.