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Research Article

**INTERDEPENDENCE OF CANDIDA GROWTH AMONG  
MALES AND FEMALES IN THE PERSPECTIVE OF USE OF  
COMPLETE DENTURES ALL DAY LONG AND NIGHT**<sup>1</sup>Anam Samreen, <sup>2</sup>Dr Noor Nasir Rajpoot, <sup>3</sup>Dr Nimra Jamil<sup>1</sup>DHQ Teaching Hospital Dera Ghazi Khan<sup>2</sup>Sir Ganga Ram Hospital, Lahore<sup>3</sup>Shalimar Hospital, Lahore

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**Abstract:**

**Background:** The factors associated with infection in oral candida are countless. This infection is mainly caused by bad prosthetic cleanliness. **Objective:** The goal of current research study was to assess that how oral candida growth is influenced by wearing false teeth all over night and gender. **Patients and Methods:** The present research was organized at Sir Ganga Ram Hospital, Lahore (October 2017 to August 2019). Total patients enrolled for this research were forty. The males and females were in equal number i.e. 20. These patients were between fifty to sixty-five years of age and complete denture wearer for first time. Those patients were not selected for the study who were found with smoking habit, diabetes and with the record of treatment with radiotherapy and chemotherapy in the previous six months. For the assemblage of sample, the method used was oral rinse on some time in a day. In this method, each patient was given ten milliliter of sterile saline in a sterile container that was disposable. They were asked to rinse for the time period of sixty seconds. Quantitative and qualitative growth of candida was examined and Gram stain, microscopy and colony count were measured after sending the sample to Microbiology section of pathology department of the hospital. **Results:** It is concluded by the results that candida growth is increased by overnight denture wearing. It was also observed that after one month of wearing complete denture, the dissimilarity in candida growth in females was valuable. **Conclusion:** It is concluded that dentures should be removed during night, as in case of eyeglasses. In this way, denture stomatitis will be avoided. Moreover, information should be provided about oral cleanliness to common people, especially to females.

**Keywords:** Denture, Candida and Sterile Container.**Corresponding author:**Anam Samreen,  
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## INTRODUCTION:

In wearing denture, the frequently formed disorder is denture stomatitis which is related to candida. The pattern and quality of the life of a person is affected by complete edentulism. The infection can be caused by the alternation in the oral microbial flora. For working and aesthetic recovery of edentulous patients, the use of a dental prosthesis is crucial. In this world, there observed an increase in the number of aged people [1]. In 2020, it is considered that 37.9 million people will need denture [2]. The layer of microbes along with their metabolites were referred as denture plaque. The make-up of denture plaque and dental plaque is almost identical. The only difference is that number of candida species is high [3]. *Candida albicans* is a fungus similar to yeast. Gastrointestinal tract, female genital tract and oral cavity of healthy people are the sites where this fungus exists [4, 5]. Oral candidiasis such as denture induced stomatitis or oral thrush may be the result of denture plaque having candida. The incidence of infection in aged people who were medicated or immune-compromised, is high [3, 6]. The incidence of candida growth is increased from 60% to 100% in people wearing false teeth. Re-infection of the palate occurs if the denture surface is not smooth and regular [7, 8]. Infection becomes serious if prosthesis cleanliness is not maintained properly [9]. Denture stomatitis is defined as pathological response of the dental containing mucosa due to trauma from ill fitting denture. There occurs problem in the denture stomatitis associated with candida if candida is present in the abrasion [10]. In people wearing false teeth the frequently occurring issue is oral candidiasis in shape of candida associated denture stomatitis. The major factor responsible for this is *Candida albicans* [11, 12]. The goal of current study was to assess that how oral candida growth is influenced by wearing false teeth all over the night and gender.

## PATIENTS AND METHODS:

The present research was organized at Sir Ganga Ram Hospital, Lahore (October 2017 to August 2019). Total patients enrolled for this research were forty. The males and females were in equal number i.e. 20. Purposive, non-probability sampling method was used for selection of patients. All the selected patients completed the inclusion standards.

**Inclusion Criteria:** The patients selected for this study were using false teeth for the first time. The age bracket of these patients was between 50 – 65 years.

**Exclusion Criteria:** Those patients were not selected for the study who were found with smoking habit, diabetes and with the record of treatment with audiopathy and chemotherapy in previous six months.

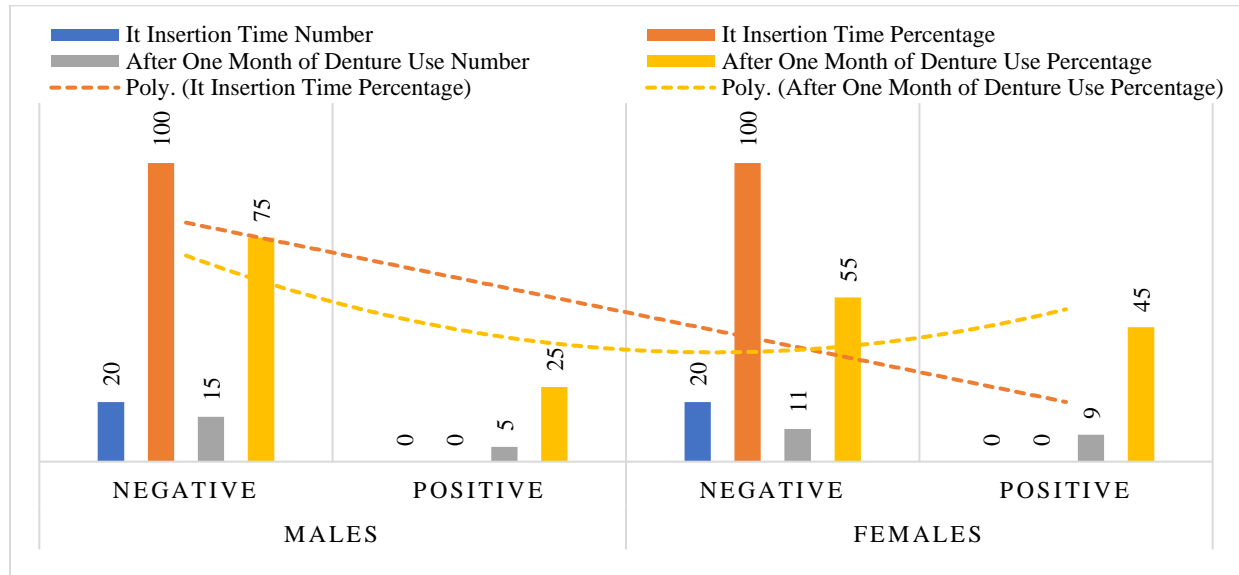
For the assemblage of sample, the method used was oral rinse on same time a day. In this method, each patient was given ten milliliters of sterile saline in a sterile container that was disposable. They were asked to rinse for the time period of sixty seconds. To reduce the effects of meals, brushing and diurnal variation, rinse was assembled in sterile container. On same day, between 1 am and 10 am, the sample was gathered. The time for centrifugation was ten minutes of rinse at 1700 g. One ml of saline was mixed after disposing the supernatant. *Candida albicans* was detected in the microbiology laboratory. Sample was checked directly and Sabouraud's media was used for its growth. The increase in growth was also checked. *Candida* was detected through microscopy. In order to attest the identification, germ tube test was also carried out. SPSS was used for data assessment and entry. The value of P was considered significant i.e.  $< 0.05$ .

## RESULTS:

Total patients enrolled for this research were one hundred. Females and males were in equal number i.e. 20. These patients were between fifty to sixty-five years of age and complete denture wearer for first time. The patients selected for this research were in the age bracket of 60 – 64 years. The candida count was zero in all the patients at the time of fitting. 14 (35%) patients were found with positive results after one month. However, candida count was zero in 26 (65%). After one month, the variations found was valuably higher ( $P = 0.0001$ ). As illustrated in the tabular data, as compare to male, the dissimilarity in candida measure in females was remarkably higher after one month of wearing complete dentures. The patients who wore denture in day as well as at night, showed higher candida growth. The females who were positive for candida growth after use of false teeth for one month, were 9 out of 20 females. Of these, 7 (77%) females were using false teeth in day and at night. On the other hand, negative results i.e. no candida growth; were observed in 11 (55%) females. Five males showed positive results. The false teeth were used in the day and at night by 4 (80%) males.

**Table:** Comparison of Males and Females for Candida Growth

Candida Growth		It Insertion Time		After One Month of Denture Use		P-Value
		Number	Percentage	Number	Percentage	
Males	Negative	20	100	15	75	0.063
	Positive	0	0	5	25	
Females	Negative	20	100	11	55	0.004
	Positive	0	0	9	45	

**DISCUSSION:**

The outcomes of our research are in agreement with the hypothesis that after the use of complete denture for thirty days, the changes observed in the candida measure is significant. As compare to males, females in our research showed higher oral carriage of candida count. Various other studies showed similar results [13, 14]. The results of the study conducted by Alkumru and Beydemir [15] were also same. The reason is that due to the hormonal alterations and iron deficiency anemia, the burden of candida is more in females. The greater number of females were in age where there is high incidence of menopause [13]. As compare to females, males showed more candida carriage according to research organized by department [16]. The research conducted by Kolak and Arikan [17] also produced the same outcomes. The factor that is associated with higher count in males in smoking. The results of current study illustrated that more candida infections are observed in patients who used their complete dentures day and night. In females, there observed more use of complete denture in day and night. So, the candida carriage measure is

also high in females. It may be due to the cosmetic reasons. In patients with denture stomatitis, regular wearing of dentures is frequently noticed [18]. The immediate changes occur on the candida growth by wearing denture all night.

**CONCLUSION:**

It is concluded by the results that denture stomatitis is mainly caused by high growth of candida in saliva after complete denture provision. Information about the associated factors of oral infection is crucial for people and public health commonly. Moreover, dentures should be removed during night, as in case of eyeglasses. In this way, denture stomatitis will be avoided. Moreover, information should be provided regarding oral cleanliness to common people especially to females.

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