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Research Article

**A DESCRIPTIVE RESEARCH TO DETERMINE THE
OCCURRENCE OF COMPLICATIONS RELATED WITH THE
WEARING OF PARTIAL REMOVABLE DENTAL
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Lahore, ³Incharge Health officer BHU 706GB, Kamalia.****Article Received:** July 2019**Accepted:** August 2019**Published:** September 2019**Abstract:**

Objective: The aim of this study was to assess the occurrence of general complications associated with the wearing of a partial removable dental prosthesis (Polymethylmethacrylate Heat Cure Acrylic Resin).

Patients and Methods: The design of this research was descriptive which was carried out in the timeframe of July 2018 to May 2019 at Mayo Hospital, Lahore. We used structured proforma to gather information related to 110 patients through radiographic assessment and interviews. We documented data related to different complications, dental arch prosthesis location, gender and age.

Results: The majority of patients were in the age bracket of (21 – 60) years and they were males. The maxillary right arch was mostly affected due to complications. Generally, there was loss of retention, mucosal changes, loss of support, pain and loss of stability with respective 56%, 35%, 31%, 29% and 26%. Least reported complications included speech-related issues (16%), appearance related issues (8%) and prosthesis design issues causing dissatisfaction (4%).

Conclusion: Most of the anomalies were associated with loss of stability, retention and support after wearing dentures which needs proper material and wearing guidelines in order to prevent possibilities of complications among such patients.

Keywords: Removable Partial Dentures (RPDs), Removable Dental Prosthesis (RDP), Anomalies and Complications.

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INTRODUCTION:

Partial RDP is an element of Prosthodontics which is helpful for the partially edentulous subjects for appropriate provision of preservation and restitution of oral functions, well-being, look and sooth with natural teeth restoration and by replacing missing teeth through artificial approaches [1]. RDP is simple to perform and helps in the replacement of natural teeth. This simple approach has been utilized (13% – 29%) [2]. Researchers also focus on this approach as it has been effective for the restoration of general oral health of the patients [2].

It is important to opt for better treatment options for the successful construction of partial dentures. Mechanical and biological principles are used to construct and design the prosthesis for longer functioning with the maintenance of oral health. Remaining tissues and teeth are not damaged through careful execution of prosthetic treatment [3].

At present, RDPs replacement in oral cavity influences the existing situation of the environment. Numerous complications are related to RDPs wearing such as abutment teeth alteration, accumulation of plaque, excessive force on abutment teeth, gingival recession, gingival inflammation and oral mucosal lesion [4 – 5]. Various authors have also related oral lesions with RDPs wearing. Oral mucosal lesions occurrence is more in those who wear RDPs than non-wearers [6 – 7]. Dentures may also predispose to various mucosal lesions which include inflammatory traumatic ulcers, candidiasis or reactive hyperplasia's ulcers. The occurrence of denture-related hyperplasia, denture-induced stomatitis and angular cheilitis is more among those who use dentures and it is even higher among males [8].

Various etiological factors include defective denture, trauma, denture age, denture hygiene, xerostomia and continuous denture wearing are also reported among patients [7, 9]. Design of the partial RDPs is of great importance to avoid possible complications and problems. The accurate design supports tissues and

prevents rotary movements [10]. RDPs are fragile and prone to self-injuries as well [11]. Complications related to RDPs have been studied by various authors and related failures have also been discussed in different series [12, 13]. Cost and inconvenience are high in case of complications. Locally relevant data documentation can be helpful to reduce complications and to benefit treatment planning.

METHODOLOGY:

The design of this research was descriptive which was carried out in the timeframe of July 2018 to May 2019 at Mayo Hospital, Lahore. We used structured proforma to gather information related to 110 patients through radiographic assessment and interviews. We documented data related to different complications, dental arch prosthesis location, gender and age. We did not include patients who presented difficulties while handling dentures, rheumatoid patients, neurological patients, dexterity patients and mentally handicapped patients. Patients were included after taking their informed consent. A detailed history of the patients was also documented before including in the research sample. Patients also underwent radiographic and intraoral assessment. Questionnaire regarding demographic detail and complications was also completed by every patient. Outcomes were analyzed in SPSS software.

RESULTS:

The majority of patients were in the age bracket of (21 – 60) years and they were males. The maxillary right arch was mostly affected due to complications. Generally, there was loss of retention, mucosal changes, loss of support, pain and loss of stability with respective 56%, 35%, 31%, 29% and 26%. Least reported complications included speech-related issues (16%), appearance related issues (8%) and prosthesis design issues causing dissatisfaction (4%). Detailed outcomes analysis about age versus complications, gender distribution, age distribution, arch distribution and site of arch are given in the tabular and graphical presentation.

Table – I: Age Groups Versus Complications

Complications/ Age Group	15 - 20 Years		21 - 40 Years		41 - 60 Years		> 61 Years	
	No	%	No	%	No	%	No	%
Retention Loss	0	0.0	19	17.3	39	39.0	4	3.6
Stability Loss	0	0.0	23	20.9	6	5.5	0	0.0
Support Loss	0	0.0	24	21.8	10	9.1	0	0.0
Pain (Yes)	0	0.0	14	12.7	18	16.4	0	0.0

Mucosal changes (Yes)	0	0.0	11	10	24	21.8	3	2.7
Design of Prosthesis (Nonsatisfaction)	0	0.0	4	3.6	0	0.0	0	0.0
Appearance problems (Yes)	0	0.0	5	4.5	4	3.6	0	0.0
Speech problems (Yes)	0	0.0	5	4.5	12	10.9	1	0.9

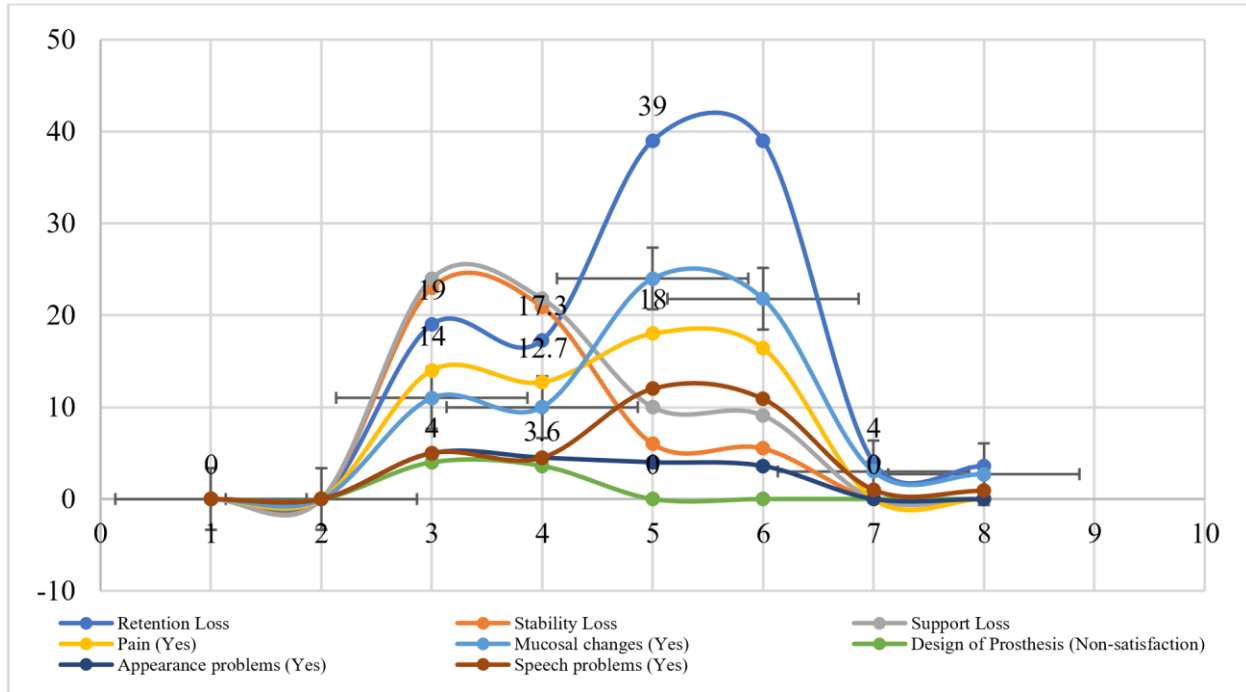


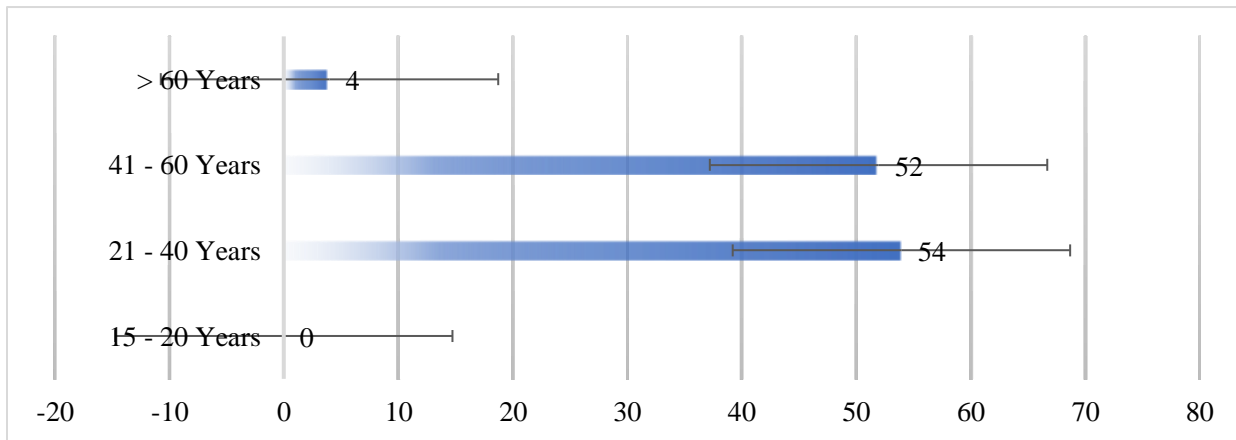
Table – II: Gender Distribution

Gender	Percentage
Male	43.0
Female	57.0



Table – III: Age Distribution

Age	Occurrence
15 - 20 Years	0
21 - 40 Years	54
41 - 60 Years	52
> 60 Years	4

**Table – IV:** Distribution of Arch

Arch	Number	Percentage
Lower	57	52
Upper	53	48

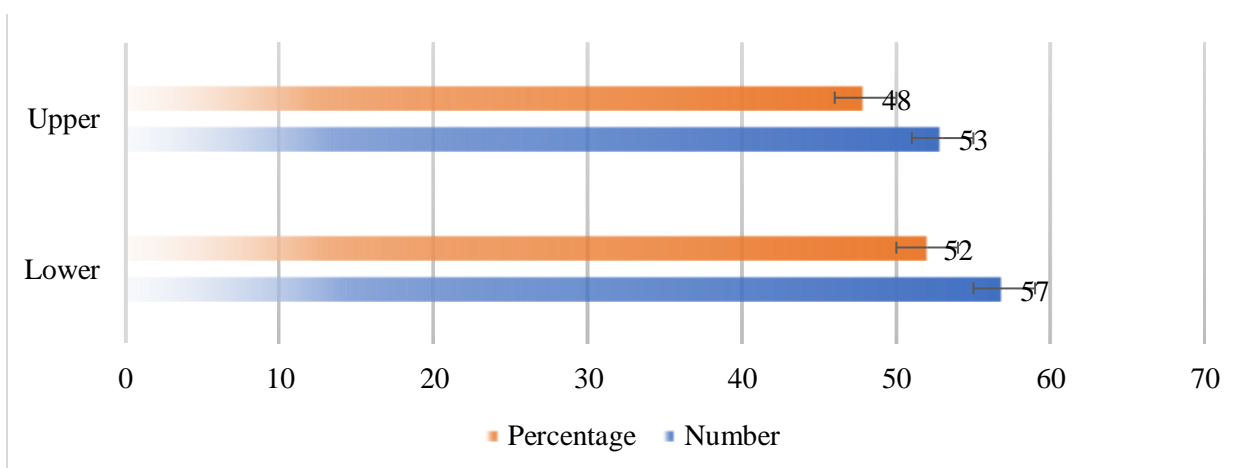
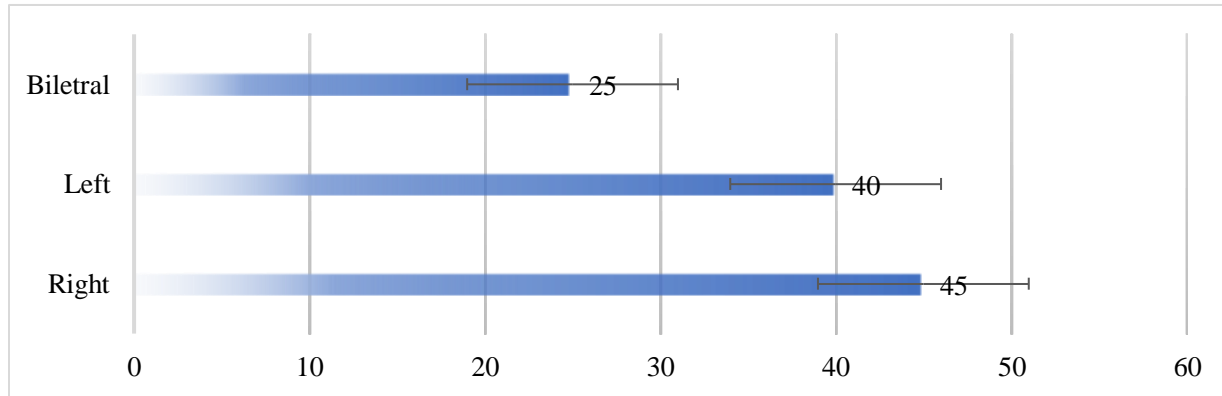


Table – V: Site of Arch

Site of Arch	Occurrence
Right	45
Left	40
Bilateral	25



DISCUSSION:

RDPs help partially edentulous subjects for proper maintenance and restoration of oral functions along with natural teeth replacement, appearance, comfort and tissue support [1]. Numerous complications are related to RDPs wearing such as abutment teeth alteration, accumulation of plaque, excessive force on abutment teeth, gingival recession, gingival inflammation and oral mucosal lesion [4 – 5]. Various authors have also related oral lesions with RDPs wearing. Oral mucosal lesions occurrence is more in those who wear RDPs than non-wearers [6 – 7].

Generally, there was loss of retention, mucosal changes, loss of support, pain and loss of stability with respective 56%, 35%, 31%, 29% and 26%. Least reported complications included speech-related issues (16%), appearance related issues (8%) and prosthesis design issues causing dissatisfaction (4%). Another series also reported a higher incidence of RDP related complications (55%) back in 2012 [14]. The even higher onset of 65% has also been reported in another research [15]. The possible reasons behind higher proportions of complications may relate with denture design, its fitting, poor retention, support and stability loss due to resorbed alveolar ridge.

Patients also reported the onset of pain. We presented pain in 29% of denture wearers which has also been

sighted in other series conducted on the use of RDPs [16]. The possible reason behind pain associates with denture loosening, pressure contribution to the resorption of bone among denture wearers [17]. Phonetic and speech-related issues were reported among 16% patients. This issue is scarcely handled in literary evidence. Another series reported a bit lower rate of speech-related issues among patients using dentures [15]. It is difficult to prove the association of use of dentures with speech-related issues as various other factors also count in speech-related issues such as age, tooth loss etc. [13].

About 35% of RDPs users also complained about mucosal lesions which were frequent in nature. These outcomes are almost similar to two other series where the overall prevalence of mucosal lesions was 45% [18, 19]. We can explain the onset of oral mucosal lesions through poorly fitting dentures, traumatic occlusal contact or poor oral hygienic maintenance. Oral mucosal lesions may also relate with poor socioeconomic background, poor handling of dentures and poor oral hygienic maintenance.

CONCLUSION:

Patients experienced 44% retention loss, 35% mucosal changes, 31% support loss, 29% pain and 26% stability loss. Related complications were 16% speech problems, 8% appearance problems and 4%

nonsatisfaction because of the prosthesis design. Therefore, a design must be made by keeping both complications and anomalies. Patients should also be briefed in detail about the use and care of RDPs. The outcomes clearly suggest that most of the anomalies were associated with loss of stability, retention and support after wearing dentures which needs proper material and wearing guidelines in order to prevent possibilities of complications among such patients.

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