

Association of Removable Partial Denture use with Oral and Systemic Health

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Abstract

Removable partial dentures (RPDs) are used to replace missing teeth to improve masticatory efficiency, enhance appearance, prevent unwanted teeth movement and/or improve phonetics. They may be chosen over fixed prosthetics for various reasons, including financial limitations, to facilitate hygiene access, or to overcome biomechanical issues associated with dental implants. The number of people with partial dentures is rising in line with increased numbers of partially dentate adults. This is thought to correlate with increased life expectancy and numbers of elders in the population, and a shift from total edentulism towards partial edentulism as oral hygiene improves. An analysis in the US highlighted the growing need for prosthodontic treatment, expected to exceed the supply available in 2020. Recent data from a global market research study, conducted in 2015, suggested approximately 19% of adults wear dentures, of whom most (60%) were partial denture wearers.

Keywords: Oral care • Systemic health

Introduction

While more people now wear RPDs, studies indicate poor patient acceptance and an increased incidence of caries and periodontal issues compared with fully dentate individuals. Understanding the reasons behind poor acceptance/hygiene could help improve outcomes, yet little is known about the psychological aspects of tooth loss and subsequent use of RPDs in daily life. Subsequently, this aspect of patient care is often overlooked. Exploring the reactions to tooth loss in 150 partially dentate people in the UK and Hong Kong demonstrated that tooth loss can majorly impact the lives of those affected. Half (49%) of participants experienced difficulty in accepting their partial tooth loss, with many reporting decreased self-confidence, restriction in dietary choice and social activities, and avoidance of close relationships. Other studies confirmed these results, showing how RPD wearers (RPDWs) experience negative quality of life effects, including avoidance of certain foods, difficulty relaxing, isolation, discomfort, nervousness, pain and distress. Emotions surrounding tooth loss may differ between populations and cultures. In London, people took longer to accept their tooth loss, whereas those in Hong Kong were more affected by food restrictions [1,2].

Since patient engagement and motivation is key to treatment success, more knowledge of the patient perspective is important. Considering the emotional and psychological needs of RPDWs by dentists is integral to help patients overcome certain issues and improve treatment outcomes. Market research surveys that collect insights from patients can provide helpful information and are undertaken by healthcare companies. Resulting data complements that from standard clinical/epidemiological studies by deepening knowledge around patient behaviours, further supporting product innovation and development. Consequently, market research surveys provide critical information that can help inform healthcare professionals (HCPs) about the potential needs of their

patients. This publication reports market research data collected and funded by GlaxoSmithKline Consumer Healthcare (GSKCH) from four surveys among denture wearers. Quantitative and qualitative methods were included; the latter used exploratory, descriptive designs and themed approaches for data analysis. Immersive ethnographic techniques were included to gather comprehensive accounts of different actions, behaviours and beliefs to enhance understanding of social practices. All surveys were conducted on behalf of GSKCH to better understand the needs, motivations and behaviours of people with RPDs. None are in the public domain [3,4].

This survey was conducted on behalf of GSKCH by a global market research company based in the UK in 2015. The research was undertaken in seven countries: the US, Japan, Malaysia, Colombia, Brazil, Poland and Italy, and included >7,000 subjects with full or RPDs. Subjects were interviewed (35-40 minutes' duration), either online or face to face; all interviews were conducted using the same questionnaire. Online interviews were undertaken among people 40-75 years of age in the US and Japan, whereas face-to-face interviews were undertaken among people 40-75 years of age in Malaysia, Colombia, Brazil, Poland and Italy [5,6].

Interviewees answered survey questions assessing demographics, denture cleansing methods, use/selection of denture cleansing products/adhesives and different questions about aspects of wearing dentures. Data collected from RPDWs and full denture wearers were analysed and compared. The RPDW group included individuals with partial dentures in the upper mouth, lower mouth, or both upper and lower mouth, but excluded subjects with full dentures in either the upper or lower mouth. This research involved focus groups and was undertaken in Canada and Japan in 2015-2016. It aimed to connect and map consumer responses across multiple different points of contact. The focus groups were held among RPDWs who were enrolled based on their response to a recruitment questionnaire to ensure articulate participants. The discussions were designed to be interactive and were directed by a skilled strategic moderator. Overall, 60 candidates were included - 30 in Canada and 30 in Japan. Four four-hour workshops were held in Canada and Japan. Two focus groups were held with RPDWs who had worn dentures for up to two years and two with RPDWs with >2 years of denture wear.

In total, 7,367 subjects were included in survey one; 3,952 were RPDWs and 3,415 were classed as full or full-plus-partial denture wearers. Overall, demographics were similar between partial and full denture wearers; most participants were >50 years of age, with an equal gender split. RPDWs' dental conditions related mainly to their remaining natural teeth; for example, plaque, tooth decay and receding gums. The desire to preserve/protect remaining natural teeth was an overarching motivator for RPDWs. Receding gums were

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a more prominent concern in the US and Japan, although it was unclear if this difference may have reflected greater awareness of gum disease in these markets. Survey one, over half (54%) of RPDWs said that losing teeth was difficult to accept. Data indicate that oral care for RPDWs is focused on preventing further tooth loss, with 76% of respondents agreeing with the statement: 'When I clean my teeth, I am mainly trying to prevent any tooth loss/further tooth loss'.

Although 42% of RPDWs said they avoid trips to the dentist unless essential, RPDWs are more likely to visit the dentist than full denture wearers due to fear of further tooth loss (27% of RPDWs visit every six months compared with 17% of full denture wearers). More RPDWs than full denture wearers (59% vs 51%) admitted to asking their dentist for advice and recommendations, but fewer RPDWs used specialist denture care products (denture cleansers and adhesives). Twenty percent of RPDWs versus 41% of full denture wearers had used a denture adhesive in the past three months; 55% of these RPDWs felt adhesives were unnecessary because they only had partial dentures. Similarly, for the use of cleansers, 39% of partial denture wearers versus 46% of full wearers had used a denture cleanser in the past three months. Many RPDWs believed their oral care routine was sufficient (59%) and that regular toothpaste was fine for their natural teeth and RPDs (54%), and that cleansers were unnecessary because they only wore partial dentures (44%) [7].

Conclusion

Survey two highlighted inadequate understanding regarding optimal care for RPDs. Respondents were only partially aware of proper denture care regimens - almost one in five (13%) reported rarely following a set cleaning routine for their RPDs and more than a third (34%) usually leave their partial dentures in their mouth for 16 hours or longer. One in four (25%) confessed to often wearing RPDs when they sleep. Survey three revealed that RPDWs want to prevent further tooth loss and feel that oral care to help prevent this should be easy. Currently, it is not perceived as easy, but rather as cumbersome, messy and infuriating. RPDWs reported having partial dentures complicates their normal oral care regime and stressed a lack of recommended guidelines.

Survey four suggested RPDWs take steps to improve their oral care regime after losing teeth. All undertake at least two additional steps compared with their pre-denture routine to protect their natural teeth from further loss. This intense focus on oral care underscores a fear that they are not doing enough, and despite their best efforts, may yet lose more teeth.

Conflict of Interest

None.

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