Oral-Health Related Quality of Life, Sleep and Pain with Temporomandibular Disorder Treatment

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Abstract

Objective: This study examined the difference between oral-health related quality of life (OHRQoL), sleep quantity and facial pain in adults with and without the Temporomandibular disorder (TMD) treatment.

Methods: Participants were recruited from three clinics in Southwest Florida and included those who received treatment for TMD and those who did not. Oral Health Impact Profile- 14 was used to assess OHRQoL. Independent samples Mann-Whitney U Test, F statistics and Chi square were performed to examine the difference between the treatment/ non treatment groups on OHRQoL, facial pain in the last 6 months and optimal sleep (7-8 hours every day).

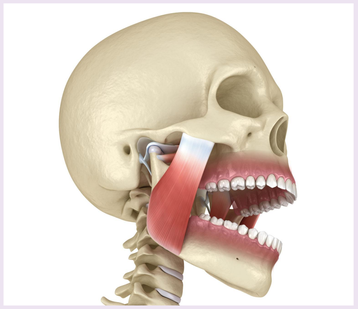
Results: The sample consisted of 75 adults with an average of 54±19; 75% (n=49) were female and 35% (n=26) male. 83% (n=62) identified as White with 9% (n= 7) Asian and 8% (n=6) Hispanic. 76% (n=57) received treatment for TMD and 24% (n=18) did not receive treatment. The Mann-Whitney U test suggested a significant difference in the overall OHRQoL for adults who received treatment (Mean Rank 45.9) to those who did not (Mean Ranl 12.72). Additionally, adults who received TMD treatment had higher OHRQoL (z= 5.651, p> 0.001) but significantly experienced pain on a greater number of days (69.5±52.1) as compared to non-treatment group (0.83±2.4) in the last 6 months (F = 0.29, p < 0.001). However, treatment group achieved optimal sleep (7-8 hours) as compared to the other group (χ^2 = 4.06, p= 0.044)

Conclusion: The findings suggest TMD patients suffering from frequent orofacial pain have improved OHRQoL when they seek treatment.

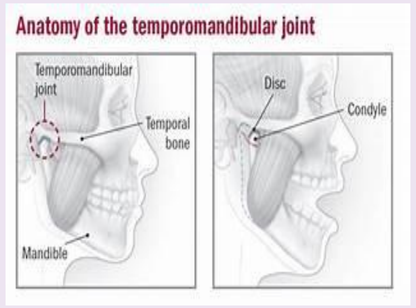
Introduction

Background:
Temporomandibular joint disorder (TMD) affects millions of adults and is linked to symptoms such as jaw pain, restricted movement, and facial discomfort[1,2]. Sleep disturbances are common in individuals with TMD[3], but the connection between TMD and sleep quality and oral health-related quality of life (OHRQoL) has not been fully explored. Prior studies suggest that OHRQoL assessments like the Oral Health Impact Profile-14 (OHIP-14) provide reliable insights into the impact of oral health conditions[4].

Research Focus:
This study investigates the relationship between TMD, sleep quality, pain severity, and OHRQoL.



Credit: Alex-mit (2020). The Temporomandibular joints and muscles. istock by Getty images



Harvard Health Publishing (2014)

Methods

- Seventy-five (75) adults diagnosed with TMD were recruited from three clinics in Southwest Florida and 57 patients received treatment for TMD.
- Participants were 18 years and older, and those with other significant health conditions were excluded.
- OHRQoL was assessed by using the Oral Health Impact Profile-14 (OHIP-14)[4], a 14-item questionnaire examining the impact of oral health on quality of life.
- Facial pain was measured by the number of days that participants experienced pain within the past six months
- Sleep quantity was assessed by asking participants if they got 7-8 hours of sleep every night. Participants completed surveys either in person (n=35) or online (n=40), providing demographic information and responses to the OHIP-14, pain frequency, and sleep duration questions.
- Descriptive statistics summarized demographic variables. Mann Whitney U tests, independent samples t-test, and chi- square tests were used to compare the treatment and non-treatment groups on OHRQoL, facial pain, and sleep quantity. Significance level (α) was set at 0.05.

Results

Figure 1
Sample characteristics (In percentages)

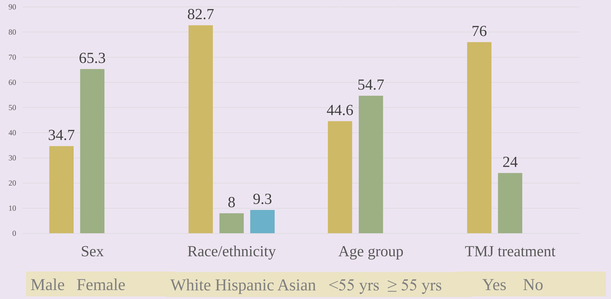
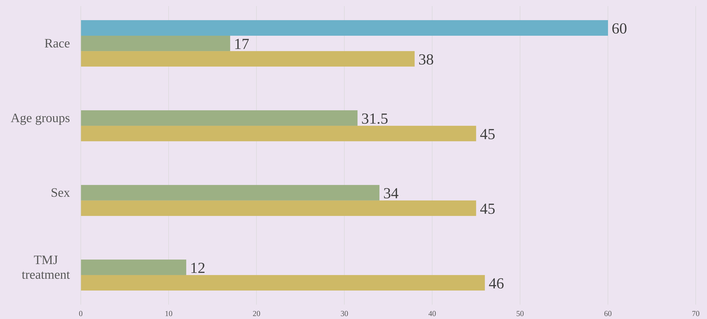


Figure 2: OHRQoL across TMJ treatment and demographics



Z scores based on Kruskal Wallis and Mann-Whitney U test significant for all variables at alpha=0.05

Table 1: Number of days in pain in the last 180 days (6 MONTHS)

	N	Mean (SD)	F statistics/ t test P value
TMJ Treatment			
Yes	55	72.1 ± 51.6	5.8 (<0.001)*
No	18	0.83± 2.41	
Sex			
Male	25	69.5± 50	1.78 (0.87)
Female	48	46.7 ±55.1	
Age			
Below 55 years	31	66±53	1.48 (0.144)
55 years and above	41	46.7±54.3	
Race			
White	60	56.8 ± 54.7	4.02 (0.022)*
Hispanic	6	1.5± 2.1	
Asian	7	80±46.6	

Table 2:Optimal sleep by TMJ treatment and demographic variables

Variable	TMJ Treatment	Optimal Sleep Yes	Optimal Sleep No	Chi square (df) *P* value
Sex				
Male	Yes	15 (71.4)	6 (28.6)	
	No	03 (30)	1 (70)	
				0.003 (1)
Female	Yes	38 (80)	7(20)	0.959
	No	7 (50	7 (50)	
Age				
Below 55 years	Yes	15 (57.7)	11 (42.3)	
	No	3 (42.9)	04 (57.1)	8.18 (1)
				0.004*
55 years and above	Yes	27 (93.1)	02 (6.9)	
	No	7 (63.6)	04 (36.4)	
Race				
White	Yes	39 (81.3)	9 (18.8)	
	No	08 (61.5)	5 (38.5)	
Hispanic	Yes	1 (100)	0 (0)	5.14 (2)
	No	2 (40)	3 (60)	0.078
Asian	Yes	3 (42.9)	4 (57.1)	
	No	0	0	

*p significant at alpha=.05

Discussion and Conclusion

The study found that individuals who received TMD treatment reported improved OHRQoL and were most likely to achieve optimal sleep (7- 8 hours) compared to those who did not receive treatment. However, the treatment group also experienced more frequent facial pain, possibly due to temporary effects of the treatment process. In conclusion, while TMD treatment improved quality of life and sleep, it was also associated with increased pain, suggesting a need for better pain management strategies. Further research is needed to understand the relationship between treatment and pain frequency and to optimize long-term treatment outcomes.

References

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