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Oral health-related quality of life in elderly women participating in a coexistence group in southern Brazil

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Oral health and quality of life in elderly women

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Abstract

The objective of this work was to evaluate the association between quality of life with the oral health in elderly women participating in a coexistence group in Southern Brazil. Study of the descriptive type, analytical, cross-sectional approach, with women aged 60 years or more, participants of a coexistence group in a city in Southern Brazil. Data collection used the instrument Oral Health Impact Profile (OHIP-14). The study had the participation of 64 elderly women aged between 60 and 88 years old with a mean of 69.8 ± 7.31 years. The areas that presented the highest values were "Physical Pain", "Psychological Distress" and "Physical Disability". The highest averages of the total scores of the OHIP-14 occurred in individuals with lower family income and low education, who showed signs of depression, changes in taste, difficulty to feel the taste of certain foods and malnutrition. Low education, change of taste and malnutrition by the arm circumference were associated with poor quality of life arising from oral disorders.

Introduction

Oral health problems are recognized as important causes of a negative impact on daily activities, causing pain, suffering, psychological constraints and social isolation. A decreased perception of oral condition can lead to lack of daily oral care, need for dental treatment and, consequently, a poor oral health, affecting quality of life [1].

The Brazilian regions present great inequality in the utilization of dental care and in people's oral health condition if we consider the access to services. The most vulnerable groups, such as rural populations, elders and poor people,

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48   with less schooling, have the worst oral health conditions and face more

49   obstacles in the use of health services [2-3].

50   The factors associated with the non-utilization of dental services are sex,

51   race/skin color, schooling, income, health insurance, lack of self-perception of

52   oral health and absence of teeth. These factors were also associated with not

53   going to dental consultations for more than 12 months, and other predisposing

54   characteristics, such as age, social networking, and feeding difficulties by oral

55   health problems [4].

56   Therefore, the social interaction of the elderly and its influence on oral

57   health, and, consequently, on their quality of life, become important. In Brazil,

58   from the concept of active aging, Third Age coexistence groups emerged with

59   places for social gathering as well as occupation of free time with physical and

60   leisure activities among the elderly [5]. These activities provide elderly people

61   integration with a social network with a healthier lifestyle, enabling

62   improvements in health that hindered activities of daily life, thus influencing in a

63   better quality of life [6]. These groups are characterized predominantly by

64   women, following a historic trend in different Brazilian cities, although it is also

65   open to male participation [7].

66   In this sense, this study aims to assess the association between quality

67   of life with the oral health in elderly women participating in a coexistence group

68   in Southern Brazil.

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70   # Methods

71   ## Study design and sample

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72   The research was characterized as a study of the descriptive type,

73   analytical, with cross-sectional approach, involving female individuals aged 60

74   years or more, participants of a coexistence group in a city in Southern Brazil.

75   Data collection occurred in the period between November and December

76   2015, at the place of activities of the group, being held in the form of an

77   interview. The Research Ethics Committee of the Federal University of Santa

78   Maria - UFSM - approved the research under the opinion number 1,282.020. All

79   participants signed the Informed Consent Form.

Dependent and independent variables

81   The dependent variable used in this study was the instrument *Oral Health*

82   *Impact Profile - OHIP-14 -*, which lists the aspects of quality of life most affected

83   by the oral health condition [8].

84   The questionnaire consists of 14 questions, two for each one of the

85   seven dimensions of oral impact: functional limitation (difficulty in speech and in

86   the decreased sensitivity of taste); pain (sensation of pain and discomfort in the

87   act of eating); psychological distress (concern and stress that the oral condition

88   can cause); physical impairment (possible loss in food and the need to interrupt

89   meals); psychological impairment (difficulty relaxing and feeling of shame on the

90   oral condition); social disability (impact of oral condition in relations with others

91   and the difficulty performing daily activities); and impairment (person's

92   perception about the impact of the oral condition in his/her life and the inability

93   to develop his/her daily activities).

94   The questions relate to general oral health problems that people have

95   experienced in the past 12 months, with options for answers on a scale ranging

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96 from zero (never) to four (always). As each domain has two subdomains, the

97 score ranges from zero to eight in each domain. The severity is measured by

98 the sum of all scores ranging from zero to 56, since the higher the score the

99 greater is the impact of oral disorders on quality of life.

100 The independent variables used in this study were sociodemographic

101 variables (family income and schooling) and health conditions (presence of

102 depression, use of dental prosthesis, discomfort while using prosthesis, change

103 in taste, difficulty feeling the food taste and arm circumference).

Statistical analysis

105 The data were analyzed using Stata 13.0, presented descriptively for

106 sociodemographic and health characteristics, as well as the mean values of the

107 OHIP-14 scores and their respective domains. The differences between the

108 average scores of the OHIP-14, according to the sociodemographic and health

109 variables, were statistically compared by the Mann-Whitney test, adopting a

110 significance level of 5%. In this study, the scores of the OHIP-14 (outcome)

111 were considered as counting variables, and simple and multiple Poisson

112 regression models were used to verify their association with the other predictor

113 variables. The analysis resulted in the calculation of the means ratio with their

114 respective confidence intervals (RR; IC95%) as an association measure. The

115 RR corresponds to the reason of the arithmetic average of the OHIP-14

116 between different categories of the predictor variables. The construction of

117 multiple model considered as an entry criterion only the variables that had a p

118 value less than 0.20 in the simple analysis; and they remained in the final model

119 when the p value was less than 0.05 after adjustment.

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Results

122   Sixty-four elderly women participated in the study. The age ranged from

123   60 to 88 years, with an average of 69.8 ± 7.31 years. Table 1 presents the

124   sociodemographic characteristics and health conditions of the sample.

125   **Table 1. Sociodemographic characteristics and health conditions.**

Variables	N	%
Family Income (MW)*		
≤ 3 MW	41	64.06
> 3 MW	23	35.94
Education (years of study)		
≥ 5 years	52	81.25
< 5 years	12	18.75
Depression (self-reported)		
No depression	38	80.85
With depression	9	19.15
Use of prosthesis		
Yes	55	85.94
No	9	14.06
Discomfort with the prosthesis		
Yes	30	53.57
No	26	46.43
Change in taste		

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No	49	76.56
Yes	15	23.44
Difficulty feeling food taste		
No	53	84.13
Yes	10	15.87
Arm circumference		
Depletion	10	15.63
Overweight	20	31.25
Eutrophy	34	53.13

126   *MW=Minimum wage (Brazilian MW value in November 2015 = R$ 788,00 or its

127   corresponding at that time, roughly U$ 203).

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129   Table 2 shows the mean values and the variation in the scores of the

130   OHIP-14 in the sample. The values for the total scores of the OHIP-14 ranged

131   from zero to 28, with an average of 9.78 and standard deviation of 6.66. The

132   scores varied widely according to each domain, and there was no ceiling effect

133   in the answers. The areas that presented the highest values were "Physical

134   pain", "Psychological distress" and "Physical impairment".

Table 2. Descriptive analysis of the total scores and subdomains of the OHIP-14.

	Number of questions	Scores meand (SD)	Possible range	Observed range
OHIP-14 (total score)	14	9.78 (6.66)	0 – 56	0 – 28
Subdomains				
Functional limitation	2	1.05 (1.47)	0 – 8	0 – 6

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Physical pain	2	1.98 (1.41)	0 − 8	0 − 6
Psychological discomfort	2	1.83 (1.92)	0 − 8	0 − 6
Physical impairment	2	1.63 (1.53)	0 − 8	0 − 5
Psychological impairment	2	1.41 (1.45)	0 − 8	0 − 6
Social impairment	2	1.08 (1.30)	0 − 8	0 − 4
Impairment	2	0.81 (1.33)	0 − 8	0 − 4

135   There was statistically significant difference between the averages of the

136   total scores and subdomains OHIP-14 according to the health conditions

137   variables and sociodemographic characteristics (Table 3). The highest means of

138   the total scores of the OHIP-14 occurred in individuals with lower family income,

139   low educational attainment, with depressive signs, changes in taste,

140   malnutrition and with difficulty to feel the taste of certain foods. Education also

141   associated with OHIP-14 scores in the domains of psychological distress and

142   physical impairment. Similarly, changes in taste also influenced the fields of

143   functional limitation and physical impairment. There were similar results

144   regarding difficulty in feeling the taste of foods, since this variable influenced

145   negatively the domain functional limitation and psychological impairment.

146   Malnourished individuals, according to the arm circumference, also had a

147   worsening of quality of life when compared to individuals with excess weight in

148   the total scores and in the field of physical impairment.

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150 **Table 3. Means (standard deviations) of the total scores and subdomains**

151 **of the OHIP-14 according to health condition and sociodemographic**

152 **variables.**

Variables	OHIP-14	FL	PP	PD	PI	PI	SI	I
Family income (minimum wage)								
> 3 MW	8.22	0.87	1.87	1.69	1.13	1.30	0.78	0.56
	(5.48)*	(1.29)	(1.36)	(1.79)	(1.32)	(1.26)	(1.24)	(1.16)
≤ 3 MW	10.66	1.15	2.05	1.90	1.90	1.46	1.24	0.95
	(7.15)	(1.57)	(1.45)	(2.01)	(1.58)	(1.57)	(1.32)	(1.41)
Education (years of study)								
≥ 5 years	8.98	0.98	2.02	1.56	1.52	1.29	0.92	0.69
	(6.56)*	(1.46)	(1.49)	(1.89)*	(1.50)	(1.40)	(1.26)*	(1.24)
< 5 years	13.25	1.33	1.83	3.00	2.08	1.92	1.75	1.33
	(6.19)	(1.56)	(1.03)	(1.65)	(1.62)	(1.62)	(1.29)	(1.61)
Depression (self-reported)								
Yes	8.74	1.00	1.89	1.68	1.42	1.21	0.82	0.71
	(5.63)*	(1.45)	(1.41)	(1.97)	(1.52)	(1.21)	(1.06)	(1.23)
No	11.78	1.33	1.56	2.78	1.55	2.33	1.44	0.78
	(9.02)	(2.06)	(1.33)	(2.11)	(1.74)	(1.94)	(1.33)	(1.39)
Use of dental prosthesis								
Yes	8.89	0.55	2.56	1.78	1.33	1.44	0.67	0.55
	(6.60)	(0.88)	(1.24)	(1.64)	(1.32)	(1.74)	(1.41)	(1.13)
No	9.92	1.13	1.89	1.84	1.67	1.40	1.14	0.85
	(6.72)	(1.54)	(1.42)	(1.98)	(1.56)	(1.42)	(1.28)	(1.37)
Discomfort with the prosthesis								

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Yes	10.73 (7.12)	1.30 (1.66)	2.00 (1.46)	1.90 (1.83)	1.80 (1.49)	1.60 (1.45)	1.33 (1.32)	0.80 (1.40)
No	8.23 (5.95)	0.73 (1.22)	1.69 (1.35)	1.73 (2.20)	1.35 (1.65)	1.08 (1.35)	0.85 (1.22)	0.81 (1.33)
Change in taste								
No	8.43 (5.17)*	0.69 (1.17)*	1.86 (1.32)	1.73 (1.81)	1.39 (1.48)*	1.16 (1.16)	0.92 (1.13)	0.67 (1.25)
Yes	14.20 (8.98)	2.2 (1.78)	2.4 (1.64)	2.13 (2.29)	2.40 (1.45)	2.20 (2.01)	1.60 (1.68)	1.27 (1.53)
Difficulty feeling food tastes								
No	9.04 (5.90)*	0.75 (1.19)*	1.92 (1.37)	1.87 (1.94)	1.47 (1.47)	1.21 (1.31)*	1.06 (1.25)	0.75 (1.27)
Yes	13.90 (9.31)	2.7 (1.83)	2.10 (1.59)	1.80 (1.93)	2.40 (1.71)	2.40 (1.90)	1.30 (1.64)	1.20 (1.68)
Arm circumference								
Malnutrition	10.80 (6.81)	0.80 (1.14)	2.80 (1.47)	1.60 (1.58)	2.00 (1.24)	1.30 (1.64)	1.40 (1.64)	0.90 (1.28)
Overweight	7.25 (5.86)*	0.85 (1.56)	1.70 (1.52)	1.55 (1.84)	0.85 (1.27)*	1.00 (1.34)	0.65 (0.88)	0.65 (1.22)
Eutrophy	10.97 (6.82)	1.23 (1.52)	1.91 (1.26)	2.06 (2.07)	1.97 (1.60)	1.67 (1.45)	1.24 (1.37)	0.88 (1.43)

153 Source (OHIP-14: Total scores; FL: Functional limitation; PP: Physical pain; PD:

154 Psychological Distress; PI: Physical impairment; PI: Psychological impairment; SI:

155 Social impairment; I: Impairment)

156 *p value ≤ 0.05: Mann-Withney test. Arm circumference variable: p value of the

157 Kruskal-Wallis test.

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159   Table 4 presents the results of the simple and adjusted Poisson

160   regression models. The simple analysis showed that only the variables "use of

161   prosthesis and discomfort while using prosthesis" were not associated with the

162   outcome. After adjustment, the variables "educational attainment, change in

163   taste and arm circumference" remained statistically associated to the total score

164   means of the OHIP-14. For example, individuals who had less than five years of

165   study presented a OHIP-14 mean 1.67 times greater when compared to

166   individuals who had five or more years of study (RR: 1.67; 95% IC: 1.29-2.16).

167   In the same way, subjects with change of taste and malnutrition presented

168   worse levels of quality of life related to oral health (i.e. higher OHIP-14 means),

169   when compared to subjects without these changes.

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171   **Table 4. Association between health condition and sociodemographic**

172   **variables with OHIP-14 means. Simple and Adjusted Poisson Regression**

173   **Models.**

Variables	RRa (95%CI)	P	RRb (95%CI)	p
Family income (MW=minimum wage)			*	
> 3 MW	1			
≤ 3 MW	1.29 (1.09-1.53)	0.03		
Education (years of study)				
≥ 5 years	1		1	
< 5 years	1.47 (1.23-1.77)	<0.01	1.36 (1.13-1.64)	0.01
Depression			*	

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No depression	1			
With depression	1.35 (1.08-1.68)	<0.01		
Use of dental prosthesis			**	
Yes	1			
No	1.12 (0.88-1.41)	0.36		
Discomfort with the prosthesis			*	
Yes	1			
No	0.77 (0.65-1.01)	0.06		
Change in taste				
No	1		1	
Yes	1.68 (1.43-1.99)	<0.01	1.72 (1.45-2.05)	<0.01
Difficulty feeling food tastes			*	
No	1			
Yes	1.54 (1.27-1.85)	<0.01		
Arm circumference				
Malnutrition			1	
Overweight	0.67 (0.52-0.87)	<0.01	0.92 (0.74-1.14)	0.41
Eutrophy	1.01 (0.81-1.26)	0.90	0.62 (0.48-0.80)	<0.01

174   RRa: Means ratio of the non-adjusted model; RRb: Means ratio of the adjusted

175   model for all variables.

176   * Variables excluded from the final model for losing significance after

177   adjustment.

178   ** Variable use of prosthesis was not included in the multiple model for

179   presenting p>0.20 in the non-adjusted analysis.

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Discussion

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182   This study evaluated the aspects of quality of life most affected by the

183 oral health condition in elderly women participating in a coexistence group in

184 Southern Brazil. The main result of this study is that individuals with less

185 schooling (< 5 years), change in taste and malnutrition, as assessed by the arm

186 circumference, presented the worst levels of quality of life associated with oral

187 health.

188   Investigating people's perception and position on their health problems is

189 important, because it allows determining the social, cultural and economic

190 influence in their quality of life. The self-perception in oral health, assessed by

191 means of the Oral Health Impact Profile (OHIP-14) using multilevel analysis,

192 identified that individuals of the female sex, with advanced age, worst scores of

193 quality of life and social support, with bad habits, smokers and residents in low-

194 income places, were more likely to report worse self-perceived oral health [9].

195   The low schooling compromises the understanding of the concept of oral

196 health as part of overall health. In a study, the prevalence of edentulism, use,

197 need and replacement of dental prosthesis showed a precarious condition of

198 elderly respondents, although reporting a great or good perception of their oral

199 health [10].

200   Changes in taste influenced the domains of functional limitation and

201 physical impairment. More healthy oral conditions contribute to a better

202 perception of flavor, and may stimulate appetite and, consequently, increase

203 caloric intake; this can help prevent nutritional deficiency in elders and improve

204 the overall health and quality of life of these patients [11].

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205   The changes of taste among elders with physical impairment can be

206   explained by their common use of dental prostheses, which changes the

207   chewing function, decreasing the strength to crush and, with it, hindering the

208   bite of food, considering that natural teeth have no longer the same

209   performance [12]. These factors can lead the elderly person to lose his/her

210   desire to eat, chew (due to early fatigue) and pleasure while eating. Faced with

211   these situations, elders realize that chewing is no longer easy and comfortable,

212   and that there is a need to select the food type or their way to consume it.

213   According to the findings in this study, the relationship of malnutrition with

214   worse scores in OHIP-14 occurs because malnutrition in elders has an obvious

215   impact on their overall health and quality of life.

216   In this study, the sense of physical pain, psychological distress and

217   physical impairment were associated with oral disorders and, consequently, to a

218   worse quality of life. In another study, the elders that showed greater severity of

219   OHIP-14 also showed greater impairment of mental domain (depression) and

220   quality of life. Oral health, one of the components of quality of life, refers to the

221   individual's subjective experience on his/her functional, social and psychological

222   well-being [13].

223   Changes in the psychological aspect, such as depression, social isolation

224   and loneliness, weaken the elder, causing disinterest for activities of daily life

225   and affecting food consumption, which may motivate a growing disinterest in the

226   face of more consistent healthy foods, which causes, therefore, the installation

227   of inadequate dietary habits, characterized by the intake of foods with a

228   smoother texture and, at the same time, poor in nutrients. This gives the

229   appearance of nutritional deficiencies that impair the functioning of various

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230   organs, affecting their health and contributing to a worse quality of life [13].

231   All elderly patients evaluated in this study had no cognitive deficit, and

232   this may be associated to their participation in coexistence groups characterized

233   by several stimuli, motivated by the coexistence with other elderly people with

234   cognitive demands to develop their capacities. In another study, the

235   participation of the elderly population in coexistence groups has proved to be a

236   good occupational therapeutic resource for health prevention and promotion, as

237   well as a possibility of early cognitive intervention with these subjects [14].

238   Regarding the aspects related to the individual dimension, all individuals

239   in the study were female, which may represent a limitation to possible

240   inferences or generalizations for the whole population. Women are more linked

241   to the care act (personal and family), thus seeking more health services and

242   reporting more morbidities [1].

243   Another study found no statistically significant differences between men

244   and women regarding the scores obtained in the OHIP-14, and women showed

245   higher levels, especially in the dimensions of physical impairment and

246   psychological distress. This implies that, if the search was performed including

247   elderly men, the results could be different [15].

248   During several generations, women played a cultural role of responsibility

249   with family care, and, therefore, are more attentive and concerned with their oral

250   health, while, at the same time, they feel a greater need to consult their doctor

251   regarding any change, thus preventing its progression [16].

252   Elders' participation in coexistence groups is important, incorporating a

253   social network, allowing them greater satisfaction with life. The improvements

254   relate to health issues, stating that, before attending the groups, they frequently

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255 had headaches that prevented them from performing common activities of daily

256 life [6].

257 Thus, the activities offered by the groups helped the elders in this study

258 to acquire a healthier lifestyle and, consequently, improve their quality of life.

259 Among the limitations of this research, its cross-sectional design stands

260 out, not allowing establishing cause and effect relationships between associated

261 factors. Nevertheless, the presented results are valid and representative of the

262 investigated elderly population, allowing more clarification about the quality of

263 life related to elders' oral health. The assessment of quality of life is a dynamic

264 process, and possible associated factors can modify throughout time. Another

265 limitation of the study was the non-completion of clinical assessment to verify

266 the oral situation of the elderly interviewees. Such limitations are some starting

267 points for future researches to fill these gaps.

268

Conclusion

270 Low schooling, change of taste and malnutrition by the arm

271 circumference were associated with poor quality of life arising from oral

272 disorders.

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Acknowledgements

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