

## ORIGINAL RESEARCH

## Evaluation and correlation of nutritional status and emotional wellbeing in relation to dentition and prosthetic rehabilitation of community living geriatric individuals during COVID-19 pandemic

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### ABSTRACT

**Background:** COVID-19 infection has become a serious problem among rapidly growing geriatric individuals in India. During the pandemic, the availability of food and emotional support has decreased in old age homes, and this must have affected the nutritional status and emotional wellbeing of the geriatric individuals.

**Aim:** To evaluate and correlate the association between the nutritional status and emotional wellbeing of geriatric individuals during covid-19 pandemic with dentition and prosthetic rehabilitation.

**Materials and method:** The questionnaire consisted of three sections which included. Demographic data and dental status, WHO approved Mini Nutritional Assessment Short Form (MNA-SF) and WHO approved Emotional well-being five scale. We also compared the BMI of geriatric elders before 6 months of Covid-19 and during Covid-19. 112 participants were enrolled from 9 government old age homes in Tamilnadu, India. Data were collected and subjected to statistical testing. Simple frequency analysis and Chi square test were used.

**Result:** 70.5% of geriatric elders had poor emotional wellbeing and 65.1% were malnourished during this pandemic. Dentition status showed that 51.7% were completely edentulous and 74.1% were without prosthetic rehabilitation. Statistical significance results were found when comparing nutritional status & emotional wellbeing with dentition and prosthetic rehabilitation status of elders during COVID-19.

**Conclusion:** Older adults' mental health was negatively affected by the COVID-19 pandemic, whereas dentition and prosthetic rehabilitation status indirectly affect the mental health of elders through malnutrition. As a prosthodontist, who provide geriatric care, treating the elders by looking beyond the teeth, will help to improve overall wellbeing of these individuals.

**Keywords:** Covid-19, Complete Dentures, Emotional Disturbance, Geriatrics, Partial Dentures

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### INTRODUCTION

An inexplicable serious respiratory tract infection was first noticed in Wuhan City of Hubei Province of China, and the same was reported to the World Health Organization (WHO) office on December 31st, 2019. WHO announced this disease as an 'epidemic' in China. The acronym of COVID-19 is "COrona VIRUS Disease 2019".<sup>1</sup> WHO later announced the novel COVID-19 epidemic as a 'Global Pandemic' on March 11th, 2020.<sup>2</sup> Precautionary and preventive measures like self-quarantine, personnel hygiene, and social distancing have been taken by the health care system and the general public in order to reduce the rate of new infections and flatten the COVID-19 contagion

curve.<sup>3</sup> On 24th March 2020, India had announced a nationwide lockdown until 31st May 2020, during the first wave.<sup>4,5</sup>

According to a report by the Ministry for Statistics and Program implementation in 2016, India has 103.9 million elderly people above the age of 60.<sup>6</sup> With the advancement in health care facilities, these geriatric individuals are given suitable care for healthy living, leading to increased life expectancy. With ageing, there will be multiple cellular and molecular events malfunction, ultimately leading to several chronic diseases, poor socio-economic consequences together with frailty, dependence and frequent hospitalization which imposes an additional burden to the family. The increased dependency pushes them to old-age homes in both

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high- and low-income countries. At present, elderly care and needs are major challenges worldwide.<sup>7-9</sup> Nutrition and Emotional wellbeing are considered as elder's resilience against COVID-19 infection. From the literature reports, it was found that nutritional deficiency was more severe among elders, 35–65% of elderly hospitalized patients, and 25–60% of institutionalized older adults were found to be suffering from malnourishment.<sup>10</sup> In geriatric patients, impairment of cognitive skills, emotional and social factors along with physical impairment causes anorexia and exacerbates the nutritional status.<sup>11-13</sup> Depression is the most common health problem in aged individuals, the vital factors of mental health include individual lifestyle factors (e.g., physical activity), personal freedoms, social stability, financial security, nutrition which will have a significant impact on their quality of life.<sup>14</sup> Also, the stress levels in geriatric patients is very high along with the incidence of dermatological conditions such as infections, eczema.<sup>15</sup> The incidence of falls and disorders of the nervous system such as Parkinson's disease affects the mobility of the elderly and leads to depression.<sup>16</sup> The overall health of geriatric patients is also dependent on accurate prescription without polypharmacy and constant monitoring to ensure right medication consumed by the individuals.<sup>17</sup> Regrettably, many of the social consequences of the COVID-19 pandemic has affected the mental health of elderly individuals.<sup>18</sup> In addition, the lack of adequate food supply has placed a burden on normal food-related behaviors.<sup>19</sup> This is significant as good nutrition is essential for good health and well-being, particularly when the immune system is challenged.<sup>11,20</sup> Furthermore, poor oral health is associated with malnutrition among elderly people.<sup>21,22</sup> Masticatory dysfunction, induced by edentulism, affects selection of diet therefore reduces the intake of nutrients. Edentulism is common among elderly residents and they are in more need of available prosthetic treatment options.<sup>23</sup> Unlike the young adults, management of oral health among elderly people is quite dissimilar as there exists a lot of physical and mental health challenges. It is crucial for prosthodontists to rule out the Socioeconomic, physical, and psychological issues thoroughly while planning treatment for elders.<sup>24</sup> In this pandemic era, a Prosthodontist plays an essential role in upkeeping the oral health of the elderly population along with their nutritional and emotional wellbeing. The inadequate care, lack of adequate food resources, and self-quarantine conditions in old-age homes may have a drastic influence on the nutritional status and emotional wellbeing of geriatric individuals. There is limited evidence on the outcome of dentition and prosthetic rehabilitation status with nutritional & emotional wellbeing status of institutionalized geriatric individuals. It is important to consider how nutrition

and emotional wellbeing have been affected by the COVID-19 pandemic, to create an essential foundation to progress appropriate recommendations for their lifestyle modifications during this time.

In light of the above, the present cross-sectional questionnaire survey was aimed (1) To evaluate and correlate the nutritional status and emotional wellbeing of the elderly population in old age homes during COVID-19 pandemic. (2) To evaluate the association between the number of teeth with the nutritional and emotional wellbeing of the elderly population. (3) To evaluate the association between prosthetic rehabilitation with the nutritional and emotional wellbeing of the elderly population.

## MATERIALS AND METHOD

After obtaining prior permission and written consent, this cross-sectional questionnaire survey was done among 9 Government Organized Old age homes from August 2020 to October 2020 in Tamilnadu, India. Participants of this study were elders with a mean age of 63 years residing at old age homes in Tamilnadu, India. The study was approved by ethical committee of our institution (IEC/SVDCH/2110).

**Inclusion criteria:** Participants should be above 60 years of age, presenting at least 1 year in old age homes, able to understand English or Tamil and give a response to the given questionnaires. The **Exclusion Criteria:** < 1 year stay in old age homes, existence presence of infections, Orofacial motor disorders, psychiatric disorders, memory loss, diet restriction on account of systemic conditions and elderly who were not able to respond to the questionnaire. Informed consent was obtained from all participants.

The questionnaire consisted of three section which include A) Demographic data and Dental status B) Mini Nutritional Assessment Short Form (MNA-SF) C) Emotional Wellbeing Five Scale Questionnaire. A) Demographic data and Dental status include Age, Height, Weight, Gender, Number of teeth and type of prosthesis. The body weight was measured with Digital balance with 0.1Kg precision (Dominion care LCD display electronic digital weighing scale) and body height was measured with stadiometer (Shreya surgical stadiometer). BMI or Quetelet's index was calculated by Weight (Kg) divided by the square of the height (m<sup>2</sup>). BMI was classified according to the World Health Organization (WHO) criteria as score 0 - 3. Score 0 – BMI less than 19, score 1 – BMI between 19 - less than 21, score 2 – BMI between 21 - less than 23 and score 4 – BMI more than 23.<sup>25,26</sup> We were collected last 6 months BMI data from old age home record prior to covid-19. We also compared the BMI of geriatric elders before 6 months of Covid-19 and during Covid-19 Number of teeth in the oral cavity irrespective of

caries, mobility, fitting and type of prosthesis (Complete denture/ Removable Partial denture/ Fixed partial denture/ Implant supported prosthesis) worn by the person were examined by a single examiner.

**B) Nutritional Assessment:** The nutritional status of the elders was assessed using MNA-SF.<sup>25,26</sup> Studies have reported this tool to be valid and reliable to assess the status of nutrition in geriatrics.<sup>26-28</sup> This instrument eliminates the need for more invasive tests, such as blood sampling. MNA-SF consists of six elements, 1) Appetite loss, 2) Weight loss, 3) Mobility, 4) Stress/Acute disease, 5) Dementia/Depression, 6) Body Mass Index (BMI)/Calf Circumference (CC) leading to the identification of presence or absence of malnutrition. MNASF score was calculated as the sum of the scores of six questions. The maximum possible score is 14 and the elders can be grouped into 3 grades based on their score, “Well Nourished” (Score >12), “at risk of Malnutrition” (Score 8-11), “Malnourished” (Score <7).<sup>26</sup>

**C) Emotional Wellbeing Assessment:** Mental status of the elders was assessed by WHO approved emotional wellbeing five scale questionnaire. This is based on how you have been feeling over the last 2 weeks. Each scale is scored in a Likert Scale from 0 to 5. The raw score is calculated by totaling the score of 5 scales. The raw score ranges from 0 to 25, 0 representing worst possible and 25 representing best possible quality of life. To obtain a standardized percentage score ranging from 0 to 100, the raw score is multiplied by 4. It is recommended to administer the “Major Depression Inventory (International Classification of Disease, ICD-10) if the raw score is below 13 (or) if the elders has scored 0 (or) 1 to any of the 5 scales. A score below 13 indicates Poor wellbeing and is an indication for testing depression using ICD-10.<sup>29</sup> Based on the score of ICD-10, the depression is diagnosed as Mild, Moderate, Severe and Major.

**Sample size calculation:** The sample size was estimated based on the primary outcome measure which was intake of protein.<sup>3</sup> With an error of 5% and power of study 80%, the sample size was estimated to be 78. 128 inmates have participated in this study, of which 12 participants were below the age of 60 and 4 participants have not answered all the questions. These 16 participants were excluded from the study.

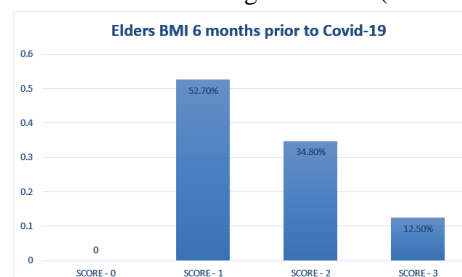
**Statistical Analysis:** All the outcome of this survey were analyzed by Simple Frequency Analysis. Chi Square Test was used to compare the categorical variables. Statistical tests were considered significant if  $P < 0.05$ . All statistical analyses were performed in SPSS (V.22.0, IBM, Chicago, USA)

## RESULTS

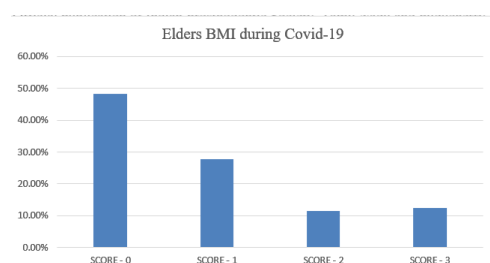
The present study reports results from 112 participants who responded to the Cross-sectional questionnaire survey.

### Comparison between BMI 6 months before Covid-19 and BMI during Covid-19 pandemic:

Graph 1 depicts elders BMI 6 months prior to Covid-19 and it was found that 52.7% were had score 1 BMI, 34.8% were had score 2 BMI and 12.5% were had score 3 BMI. Graph 2 shows elders BMI during Covid-19 pandemic and it was found that 48.2% were had score 0 BMI, 27.7% were had score 1 BMI, 11.6% were had score 2 BMI and 12.5% were had score 3 BMI. Table 1 shows comparison between BMI 6 months before Covid-19 and BMI during Covid-19 pandemic. Among elders with score 1 BMI prior to Covid-19, 62.7% were reduced to score -0, 25.4% were maintained in score -1, 8.5% were improved to score -2 and 3.4% were improved to score -3 during Covid-19 pandemic. Among elders with score 2 BMI prior to Covid-19, 43.6% were reduced to score -0, 41% were reduced to score -1, 15.4% were maintained in score -2 during Covid-19 pandemic. Among elders with score 3 BMI prior to Covid-19, 14.3% were reduced to score -2 BMI and 85.7% were maintained in score -3 BMI during Covid-19 pandemic. We found highly significant results on comparing elders BMI 6 months prior to Covid-19 and BMI during Covid-19. ( $P < 0.01$ )



Graph 1 : Elders BMI 6 months prior to Covid-19 pandemic.



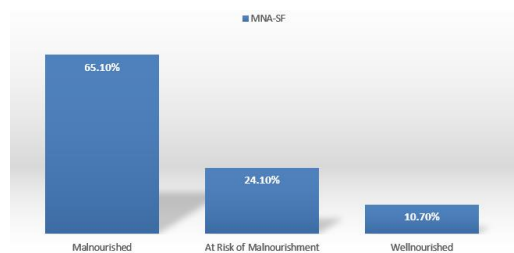
Graph 2 : Elders BMI during Covid-19 pandemic

BMI 6 months prior to 19	BMI during Covid-19				Total	
	score - 0	score - 1	score - 2	score - 3		
BMI score - 1	Count	37	15	5	2	59
% Within BMI 6 months prior to Covid-19		62.7%	25.4%	8.5%	3.4%	100%
BMI score - 1	Count	17	16	6	0	39
% Within BMI 6 months prior to Covid-19		43.6%	41%	15.4%	0%	100%
BMI score - 1	Count	0	0	2	12	14
% Within BMI 6 months prior to Covid-19		0%	0%	14.3%	85.7%	100%
BMI score - 1	Count	54	31	13	14	112
% Within BMI 6 months prior to Covid-19		48.2%	27.7%	11.6%	12.5%	100%
	P-Value					0.00

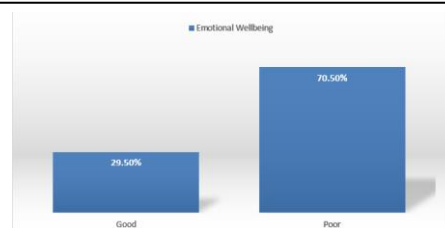
Table 1: Comparison between elders BMI 6 months prior to Covid-19 and elders BMI during Covid-19 pandemic.

**Nutritional status & Emotional wellbeing of elders during Covid-19 pandemic:**

Graph 3 depicts the Nutritional status of geriatric elders and it was found that 65.1% were “Malnourished”, 24.1% were “at risk of Malnutrition” and only 10.7% were “well nourished”. Graph 4 reflects the Emotional wellbeing of geriatric individuals and it was observed that 70.5% had poor emotional wellbeing and 29.5% had good emotional wellbeing during Covid-19 pandemic. Table 2 shows Correlation between Nutritional status & Emotional wellbeing during Covid-19 pandemic. Among “Malnourished” elders, 26% had good emotional wellbeing and 74% had poor emotional wellbeing. Among elders “at risk of malnourishment”, 22.2% had good emotional wellbeing and 77.8% had poor emotional wellbeing. Consecutively among “well-nourished” elders, 66.7% had good emotional wellbeing and 33.3% had poor emotional wellbeing. On comparing nutritional status and emotional wellbeing, we found statistically significant results during COVID-19 pandemic. ( $P < 0.05$ )



Graph 3 : Nutritional status (MNA-SF) among geriatric elders during Covid-19 pandemic



Graph 4: Emotional Wellbeing among geriatric elders during Covid-19 pandemic

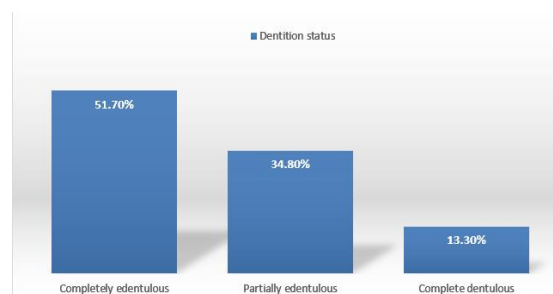
MNA-SF	Emotional Wellbeing		Total	
	Good	Poor		
Malnourished	Count	19	54	73
% Within MNA-SF		26%	74%	100%
At risk of malnourished	Count	6	21	27
% Within MNA-SF		22.2%	77.8%	100%
Well Nourished	Count	8	4	12
% Within MNA-SF		66.7%	33.3%	100%
Total	Count	33	79	112
% Within MNA-SF		29.5%	70.50%	100%
		P Value	0.01	

\*MNA-SF – Mini Nutritional Assessment Short Form.

Table 2: Correlation between Nutritional status & Emotional Wellbeing during COVID-19 pandemic.

**Nutritional status & Emotional wellbeing of elders based on dentition status:**

The dentition status of geriatric elders is shown in Graph 5, 51.7% elders were completely edentulous, 34.8% elders were partially edentulous and 13.3% elders were completely dentulous. Table 3 shows Correlation between Dentition status and Nutritional status & Emotional wellbeing. Among “completely edentulous” elders, 77.6% were “Malnourished”, 17.2% were “at risk of Malnutrition” and 5.2% were “Well nourished” and Emotional wellbeing scale revealed that 15.5% had good emotional wellbeing and 84.5% had poor emotional wellbeing. Among “partially edentulous” elders, 30.8% were “Malnourished”, 53.8% were “at risk of Malnutrition” and 15.4% were “Well nourished” and Emotional wellbeing scale revealed that 41% had good emotional wellbeing and 59% had poor emotional wellbeing. Among “completely dentulous” elders, 13.3% were “Malnourished”, 26.7% were “at risk of Malnutrition” and 60% were “Well nourished” and Emotional wellbeing scale projected that 53.3% had good emotional wellbeing and 46.7% had poor emotional wellbeing. On comparing dentition status and Nutritional status & Emotional wellbeing of geriatric individuals, statistically significant results were found. ( $P < 0.05$ )



Graph 5: Dentition status of geriatric elders



Dentition status	MNA-SF				Emotional wellbeing		
	Malnourished	At risk of Malnourishment	Well Nourished	Total	Good	Bad	Total
Completely edentulous	45	10	3	58	9	47	58
Count	77.6%	17.2%	5.2%	100%	15.5%	84.5%	100%
% Within dentition status							
Partially edentulous	12	21	6	39	16	23	39
Count	30.8%	53.8%	15.4%	100%	41%	59%	100%
% Within dentition status							
Completely dentulous	2	4	9	15	8	7	15
Count	13.3%	53.8%	60%	100%	53.3%	46.7%	100%
% Within dentition status							
Total	73	27	12	112	33	79	112
Count	65.2%	24.1%	10.7%	100%	29.5%	70.5%	100%
% Within dentition status							
			P-Value	0.00		P-Value	0.00

Table 3: Nutritional and Emotional wellbeing status of elders based on dentition status

### Nutritional status and Emotional wellbeing of elders based on their prosthetic replacement:

The prosthetic rehabilitation status of geriatric elders are shown in graph 6. 25.9% of elders have replaced their teeth with removable/ fixed prosthesis and 74.1% have no prosthetic replacement. Table 4 shows Correlation between Prosthetic rehabilitation and Nutritional status & Emotional wellbeing. Among elders “with prosthesis”, 17.4% were “Malnourished”, 51.72% were “at risk of Malnutrition” and 31.03% were “Well nourished” and Emotional wellbeing scale revealed that 62.1% had good emotional wellbeing and 37.9% had poor emotional wellbeing. Among elders “without prosthesis”, 81.9% were “Malnourished”, 14.5% were “at risk of Malnutrition” and 3.6% were “Well nourished” and Emotional wellbeing scale shows that 18.1% had good emotional wellbeing and 81.9% had poor emotional wellbeing. On correlating Prosthetic rehabilitation and Nutritional status & Emotional wellbeing, we found statistically significant results. ( $P < 0.05$ )

Prosthetic rehabilitation status	MNA-SF				Emotional wellbeing		
	Malnourished	At risk of Malnourishment	Well Nourished	Total	Good	Bad	Total
With prosthesis	5	15	9	29	18	11	29
Count	17.24%	51.72%	31.03%	100%	62.1%	37.9%	100%
% Within prosthesis status							
Without prosthesis	68	12	3	83	15	68	83
Count	81.9%	14.5%	3.6%	100%	18.1%	81.9%	100%
% Within prosthesis status							
Total	73	27	12	112	33	79	112
Count	65.2%	24.1%	10.7%	100%	29.5%	70.5%	100%
% Within prosthesis status							
			P-Value	0.00		P-Value	0.00

Table 4: Nutritional and Emotional wellbeing status of elders based on prosthetic rehabilitation status

## DISCUSSION

In this decade, COVID-19 had created a huge impact socio-economically, physically and psychologically on all of us, mainly on geriatric individuals. Since its first infection in China on 31st December 2019, the disease had spread aggressively across the world. Many countries announced national wide lockdown,

to reduce or flatten the COVID-19 contagion curve.<sup>3,30</sup> Geriatric individuals known to have several chronic diseases, Malnourishment and depression, especially in Government old age homes. The government old age homes often seen as places of loneliness and staffs are unqualified without proper training.<sup>7</sup> During this pandemic, fear of COVID-19 infection, inadequate care, lack of adequate food resources and self-quarantine conditions in government old age homes have major influence on Nutritional and Emotional wellbeing of elders. The present cross sectional questionnaire survey was aimed to evaluate and correlate the nutritional status, emotional wellbeing along with dentition & prosthetic rehabilitation status among geriatric individuals during Covid-19 pandemic.

On comparing elders BMI before and after Covid-19 pandemic, more than half of the elders had lost their BMI during this pandemic, this may be attributed to various factors like stress, fear, poor dental hygiene. This is concurrent with the significant negative effects of the COVID-19 pandemic on nutritional health in our study where 65.1% of the elders were “malnourished” and mental health where 70.5% elders had poor emotional wellbeing. Thus, in our study it is evident that COVID-19 pandemic has affected both the nutritional and emotional wellbeing of geriatric elders. Our study is in accordance with the previous study where emotional wellbeing was indirectly affected by dental health & prosthetic rehabilitation through nutritional status.<sup>31</sup> They had experienced depression, nervousness, restlessness & lack of interest towards their daily life during COVID-19 pandemic. Specifically, loneliness was associated with higher levels of depression for older adults who were living in old age home during the pandemic. Similar result was obtained from study done by Krendl AC, and Perry BL.<sup>32</sup> In studies done by Killgore et al, it was found that young and middle-aged adults were suffering from depression during the pandemic. Literature supports that COVID-19 made young, middle and old age groups to fall in depression.<sup>33</sup>

Results projected that 65.1% elders were “Malnourished”, 24.1% were “at risk of Malnutrition” and 10.7% were “well nourished” during COVID-19 pandemic. These results were consistent with the study done by Tao li et al.<sup>34</sup> Among older patients, diet plays a key role in disease prevention. Malnutrition represents a deficiency of all nutrients, and not just the calories, leading to range of health problems through impaired immune response.<sup>35</sup> Social isolation during COVID-19 pandemic could reduce the interest to consume food whereas social interaction can improve the condition.<sup>36</sup> Also, the lack of support from family especially during times of need, emotional distress of being unwanted, loneliness are

the important factors that affect nutrition of geriatric individuals.<sup>37,38</sup>

Loneliness, identified as a “geriatric giant”, is a predictor of several health outcomes linked to poor nutritional status because it affects areas such as appetite or their day-to-day activities.<sup>39,40</sup> Thus it is vital to increase social resources within the community and to have family times wherein relatives or friends eat with elders and thereby improve the nutritional status.<sup>38</sup>

Although nutritional status is influenced by factors such as age, socioeconomic status and general health, it would appear that dental status is also significant.<sup>41</sup> Dental health surveys indicate that the oral health of older population is improving with more natural teeth retained during old age.<sup>42</sup> However, factors such as xerostomia, polypharmacy and reduced manual dexterity can mean that preservation of these teeth can be challenging. Among completely edentulous elders, it was found that 77.6%, 17.2%, 5.2% were “Malnourished”, “at risk of Malnutrition”, “Well-nourished” respectively and 84.5% had poor emotional wellbeing & 15.5% had good emotional wellbeing. Edentulism and poor dental hygiene may be a possible factor for poor eating habits leading to compromised nutritional status of the elderly and this is further worsened by poor emotional wellbeing. A decrease in BMI during this pandemic might be because of lack of dental health maintenance. Decreased intake of essential nutrients has been reported to be a risk factor for decline in cognitive skills and memory loss.<sup>31</sup> Complete edentulousness may not be life threatening and yet it has been shown to have a negative effect on the quality of life of older adults.<sup>43,44</sup> This study is concurrent with a previous study that has demonstrated the association between edentulism, malnutrition and poor emotional wellbeing.<sup>31</sup>

Among elders with prosthetic rehabilitation, 17.24%, 51.72%, 31.03% were “Malnourished”, “at risk of Malnutrition”, “Well-nourished” respectively and 62.1% had good emotional wellbeing & 37.9% had poor emotional wellbeing. A study has reported the association of poor nutritional status with edentulousness.<sup>44</sup> The results of failure to replace tooth loss may be far reaching and may affect overall oral health. Replacing missing dentition with dentures will not suffice in building up the nutritional wellbeing of the elderly individual. If the denture retention is inadequate, elders may find it difficult to masticate and limit their intake of food and is a vicious cycle that affects oral health. Franks and Redegard reported that although only mild variations are present in the nutritional status of dentulous and edentulous individuals, and may not affect adults, it may not be the case in elders due to various factors such as systemic illness, and increase.<sup>45</sup> Dental professionals could aid in improving the nutritional status of edentulous

elderly patients by giving dietary advice and prosthetic rehabilitation.<sup>3</sup> This study is concurrent with the findings of similar studies demonstrating the association between prosthetic rehabilitation, nutrition and emotional wellbeing.<sup>46-51</sup> Also, the pandemic has worsened both the nutritional and emotional well-being of the geriatric individuals. The preventive measures that could be taken to improve dental and emotional health include professional counselling sessions in old age homes and regular dental screening camps and awareness camps to emphasize the importance of prosthetic rehabilitation in geriatric patients. This would definitely improve the nutritional and emotional and social well-being of geriatric patients.<sup>52</sup>

To our knowledge, our study is the first of its kind where the nutritional status and emotional wellbeing were correlated with number of teeth and prosthetic rehabilitation during Covid-19 pandemic, and we had found statistically significant results. Several important findings emerged from this study. First, older adults’ mental health was negatively affected by the COVID-19 pandemic which is concurrent with the findings of Buenaventura et al who reported similar results in Philippines,<sup>53</sup> Hayek et al who reported similar results in Middle East and North Africa.<sup>54</sup> Thus the geriatric patients experienced greater depression and loneliness than they had prior to the pandemic. Since most of the participants were having poor emotional wellbeing, they were referred to ICD-10 test to rule out depression. Second, dentition and prosthetic rehabilitation status indirectly affect the mental health of elders through malnutrition. Since, this study was conducted during COVID-19 lockdown period, not many old age homes were accessible. The sample size was low and other oral conditions such as xerostomia, pain were not evaluated. Also we did not obtain data on education and socio-economic status that may affect awareness and motivation on the importance of prosthesis. which are the limitations of the present study. Therefore, further longitudinal studies involving all the old age homes both public and private run can be included in the study post lockdown.

#### Conclusion.

Nutrition and Emotional wellbeing play a significant role towards resilience of elders. Covid-19 pandemic and its preventive measures, had direct negative impact on Nutrition and Emotional wellbeing of geriatric elders, whereas number of teeth and prosthetic rehabilitation affected the emotional wellbeing of geriatric individuals through poor nutritional status. As a Prosthodontist, who provide geriatric dental care, treating the patient appropriately to improve their dental health. By fabricating new denture and providing simple dietary advice, will help to achieve overall nutritional status of these elders. The emotional wellbeing can be improved by giving counselling

regarding COVID-19 infection and its preventive measures. By adhering the problem related to nutritional status and emotional wellbeing, there will be a positive outcome for future prosthodontic rehabilitation. It is vital for periodic assessment of nutritional status and emotional wellbeing for early diagnosis and intervention of malnutrition and depression in geriatrics.

#### CONFLICT OF INTEREST

There is no conflict of interest

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