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Predictive Modeling of Dental Pain Using Neural Network

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Abstract. The mouth is a part of the body for ingesting food that is the most basic foundation and important part. The dental pain predicted by the neural network model. As a result of making a predictive modeling, the fitness of the predictive modeling of dental pain factors was 80.0%. As for the people who are likely to experience dental pain predicted by the neural network model, preventive measures including proper eating habits, education on oral hygiene, and stress release must precede any dental treatment

Keywords: Dental pain, Neural network, Oral health

Introduction

Oral diseases may hinder people from living a healthy life by causing obstacles in the nutrition supply of the human body. Nevertheless, the reality is that oral diseases have been dealt lightly due to the misconception that they have little direct relevance to human life. However, the mouth is a part of the body for ingesting food that is the most basic foundation and important part in maintaining and improving health, thus it can be said that the mouth is the foundation in maintaining health. This study aims at the found out the eating habits and recognition factors of people who are currently suffering from dental pain, and made a predictive modeling.

Methods

The oral health condition for maintaining and improving oral health has been examined and analyzed through a questionnaire and the groups were divided based on the presence and the absence of dental pain. The dental pain predicted by the neural network model.

Results

As for the number of tooth brushing per one day, 62.4% replied three times a day, and for the time of brushing, 76.4% replied after meals. 66.4% of the survey participants received an education on tooth brushing, and 36.3% used dental floss and 17.3% used tooth picks. As for the toothbrush exchanging, 75.5% changed every 2~3 months, and 37.6% had dental scaling experience. Currently, 18.5% of the participants replied to having some type of discomfort in their mouth. The people suffering from dental pain tend to change their toothbrushes less often than the group that doesn't have dental pain. Input parameter was selected as eating habits, exercise and oral habits. Input layer 131 neurons, hidden layer 6 neurons, output layer 1 neuron. As a result of making a predictive modeling, the fitness of the predictive modeling of dental pain factors was 80.0%.

Conclusion

As for the people who are likely to experience dental pain predicted by the neural network model, preventive measures including proper eating habits, education on oral hygiene, and stress release must precede any dental treatment

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