

**OBESITY LEVEL PREDICTION BASED ON APRIORI ALGORITHM ASSOCIATION  
RULE MINING**

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Being overweight and obesity are ongoing severe health problems in the world. According to health experts, people who maintain a normal BMI index can live healthy life. However, the obese population is considered a vulnerable group to COVID-19. Using association rule mining with Weka software tried out to define some rules for the major causes of obesity and overweight. The dataset used here was the “Estimation of obesity levels based on eating habits and physical condition”, which has been collected from Mexico, Peru and Colombia. This dataset contains 17 attributes and 2,111 records. Here, data preprocessing was done first, and for the data discretization part, numeric attributes were converted to nominal. Then used Apriori Algorithm for mining association rules and tested with different parameter settings. After going through each of the separate rules, some common rules that caused type III obesity can be identified, where females have a higher risk of causing obesity rather than males. A woman with an overweight history in her family has a higher probability of having Type III obesity. Moreover, if such a person has a habit of frequently eating high-caloric foods, she has a high risk of getting obese. Moreover, if a person eats high-caloric foods and eats any food between meals, it is advisable to monitor calorie consumption. Furthermore, if a person uses public transport daily, that person is living under the threat of obesity because of a lack of exercise. Finally, these obesity level prediction rules can apply to modern-day life to avoid obesity and have a healthy life.

**Keywords:** Apriori, Association, Covid, Obesity, Overweight