Chapter 1

Introduction

1.1 Background

An individual's diet plays a fundamental role in maintaining health and preventing disease by determining nutritional intake. The state resulting from the balance between nutrient intake and the body's requirements, reflecting overall health, is known as nutritional status (Fernández-Lázaro & Jesús Seco Calvo, 2023). This condition is comprehensively evaluated through a combination of anthropometric indicators (BMI assessment), body composition analysis, and dietary intake assessments. Any imbalance in nutritional status, ranging from undernutrition to overnutrition, can cause physiological changes that alter metabolism, hormonal regulation, and overall bodily functions. These systemic modifications can subsequently influence how the body responds to dietary stimuli and regulates food-related behaviors, producing both beneficial and adverse metabolic outcomes (Dinda Fauziah Hasanah & Anastu Regita Nareswara, 2025; Papadopoulou et al., 2023). To fully understand the specific mechanisms driving these behavioral and sensory changes, detailed evaluation of an individual's physical makeup is required (Basty et al., 2026).

Body composition assessment provides a more detailed understanding of an individual's physiological condition, such as the balance between fat mass and lean muscle, beyond general health indicators. Unlike basic anthropometric measurements, it is evaluated by assessing the precise distribution of adipose tissue and lean mass across the body. Differences in body composition, particularly excess adiposity or low body fat levels, have been associated with alterations in metabolic and hormonal processes (Marra et al., 2019; Zhan et al., 2024). These physiological changes may influence sensory function, including taste perception, by affecting mechanisms involved in signal transmission and sensitivity to taste stimuli. As a result, individuals with different body composition profiles may experience variations in their perception of taste, which could subsequently impact their food

preferences and dietary behaviors (Harnischfeger & Dando, 2025). Among the various taste modalities affected by these physiological changes, the perception of saltiness is particularly important to investigate due to its direct link to sodium consumption and overall health (Bigiani, 2020).

Saltiness taste perception can become a factor in influencing dietary choices and sodium consumption. Individuals vary in their ability to detect and perceive salt, which may affect their preference for salty foods, overall macronutrients, and sodium intake. Reduced sensitivity to saltiness may lead individuals to consume higher levels of sodium to achieve a desired taste intensity, potentially increasing the risk of adverse health outcomes (Bigiani, 2020; Bobowski, 2015). In addition to physiological factors, behavioral aspects such as knowledge, attitudes, and practices (KAP) regarding sodium intake also play an important role in shaping dietary habits. Individuals with greater awareness and positive attitudes toward sodium reduction may adopt healthier consumption practices, regardless of their sensory sensitivity (Haron et al., 2021). While existing literature has independently examined the impact of adiposity on taste thresholds or the role of cognitive awareness in dietary habits, few studies have integrated these physiological and behavioral variables (Aksoy Canyolu & Özben Sadıç, 2025; Dalrymple et al., 2019). However, the interaction between nutritional status, salty sensory sensitivity, and KAP toward sodium intake remains insufficiently explored. Therefore, this study aims to evaluate the relationships among salt taste sensory sensitivity, body composition parameters, dietary intake, and behavioral practices regarding salt consumption among Indonesian adults of reproductive age.

1.2 Objective

The primary objective of this study is to evaluate the relationships among salt taste sensory sensitivity, body composition parameters, dietary intake, and behavioral practices regarding salt consumption among Indonesian adults of reproductive age. To achieve this goal, the specific sub-objectives of this study are:

1. To evaluate and compare salt taste sensory sensitivity across different nutritional statuses.
2. To examine the relationship between salt taste sensory sensitivity, macronutrient intake, and sodium intake across different nutritional statuses (BMI), assessed using a 24-hour dietary recall.
3. To investigate the relationship between salt taste sensory sensitivity and specific body composition parameters measured using bioelectrical impedance analysis (BIA).
4. To determine the association between dietary sodium intake and the cognitive and behavioral domains of knowledge, attitudes, and practices (KAP) related to salt consumption.

1.3 Hypothesis

$H0_1$ (Null Hypothesis): There are no significant associations among salt taste sensory sensitivity, body composition parameters, dietary intake, and knowledge, attitudes, and practices related to salt consumption in Indonesian adults of reproductive age.

$H1_1$ (Alternative Hypothesis): There are significant associations among salt taste sensory sensitivity, body composition parameters, dietary intake, and knowledge, attitudes, and practices related to salt consumption in Indonesian adults of reproductive age.