

# Nutrition Literacy and the Consumption of Unhealthy Fats & Sugar-Sweetened Beverages Among University Students in the UAE.



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# Overview.

1 Introduction

2 Problem

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8 Discussion

9 Conclusion

9 Recommendation



# Introduction

## Ultra-Processed Foods



High in Fat



Diabetes



Obesity

## Sugar-sweetened Beverages

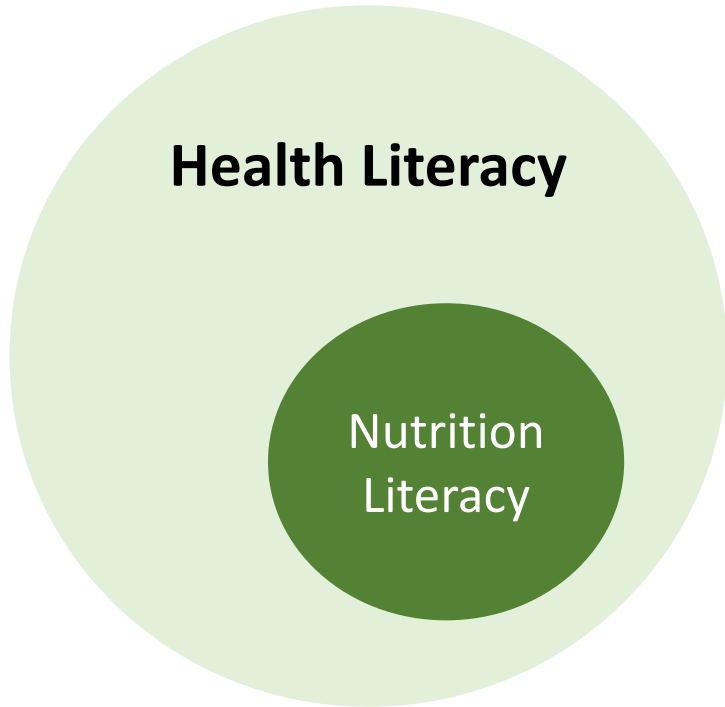


High in Sugar



Coronary Heart Disease<sup>5</sup>

# Introduction



## **i** Health Literacy

“Knowledge, motivation, and competencies that enable a person to identify, evaluate, and apply health information to make health-related decisions” (Kindig et al., 2004).

## **i** Nutrition Literacy

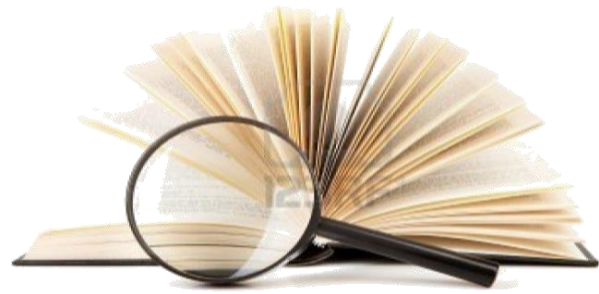
Obtaining, processing, and understanding basic nutrition information => Appropriate Nutrition Decision (Mohsen et al., 2022).

# Why this study?

1 In the UAE, 67.9 % of adults are overweight, while 27.8 percent are obese.<sup>1</sup>

2 Young adulthood is marked with unhealthy eating behaviors.<sup>2</sup>

3 College students in the UAE were reported to have low nutrition knowledge.<sup>3</sup>



# Literature Review

## Turkey

## Taiwan

Nutrition literacy score was positively correlated with healthy eating habit (Kalkan, 2019, Liao et al., 2019).

## Lebanon

## USA

Nutrition literacy is not sufficient to mold healthy eating behaviors (Taleb & Itani, 2021; Shach, 2020).

## USA

## UAE

Nutrition knowledge improved dietary habits and reduced intake of fat (Yahia et al., 2016, AlBlooshi et al., 2022)

## Iran

Healthy eating index was positively correlated with skill domain, but not with the knowledge domain of nutrition literacy (Ashoori et al., 2023).

# Objective

1

To assess the current nutrition literacy of the university students in the UAE.



2

To identify the determinants affecting the level of their nutrition literacy.

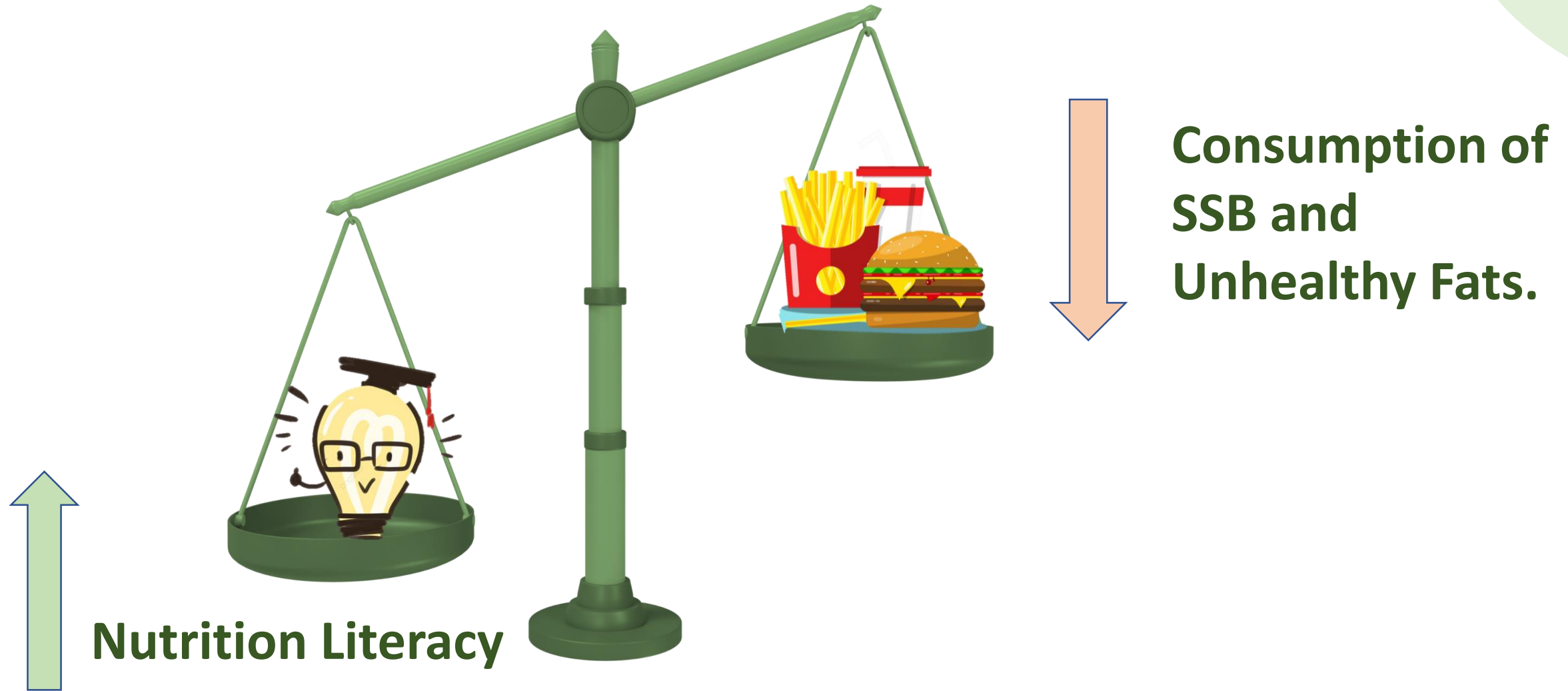
3

To examine association of nutrition literacy with consumption of unhealthy fats and SSB.

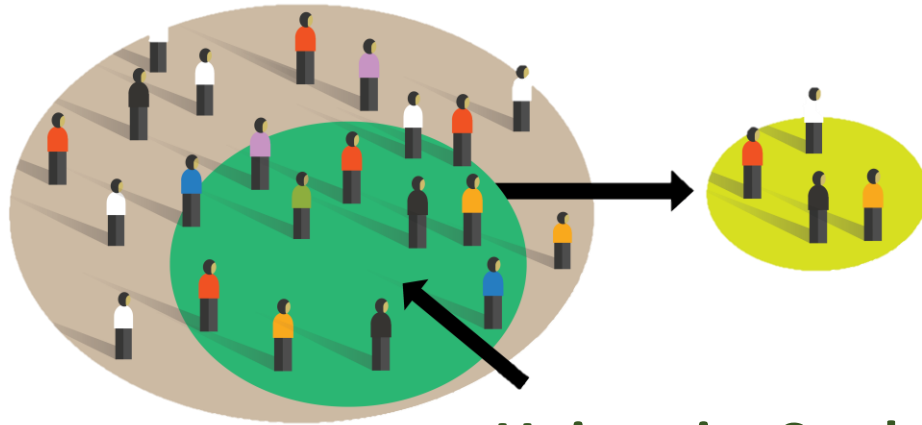




# Hypothesis



# Population



409 Participants  
(18 – 30 Years old)

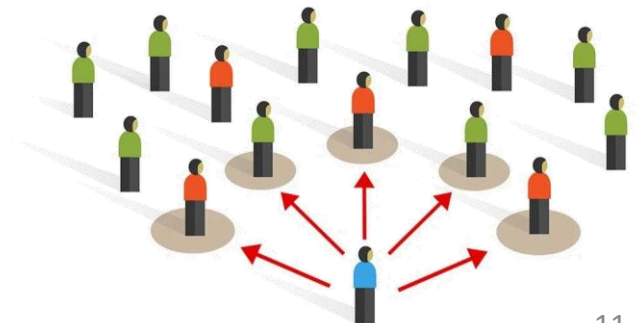
University Students in the UAE



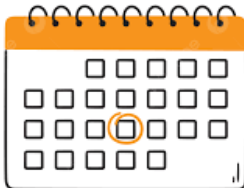
## Snowball Sampling



## Convenience Sampling



# Research Design



Sep 2023 – Nov 2023

Nutrition Literacy Questionnaire 2

How often do you agree with the statements below? \*

	Never	Rarely	Sometimes	Often	Always
I can assess whether information about nutrition in the media is reliable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I discuss information about nutrition with experts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I follow nutritional advice from experts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I base my diet on the latest scientific knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Back    Next    Clear form

Arabic  
N = 167

English  
N = 263

1 Demographics

2 Nutrition Literacy Scale<sup>1</sup>

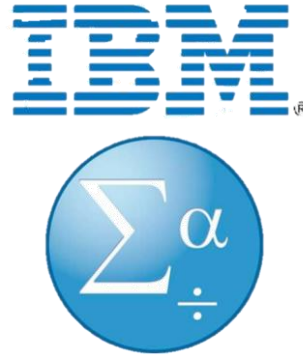
3 Block Rapid Food Screener<sup>2</sup>

4 Beverage Intake Questionnaire<sup>3</sup>

58 Question Items

Online Self-Administered Survey

# Ethical Clearance & Analysis



P value  $< 0.05$

Descriptive Statistics

Independent T-test

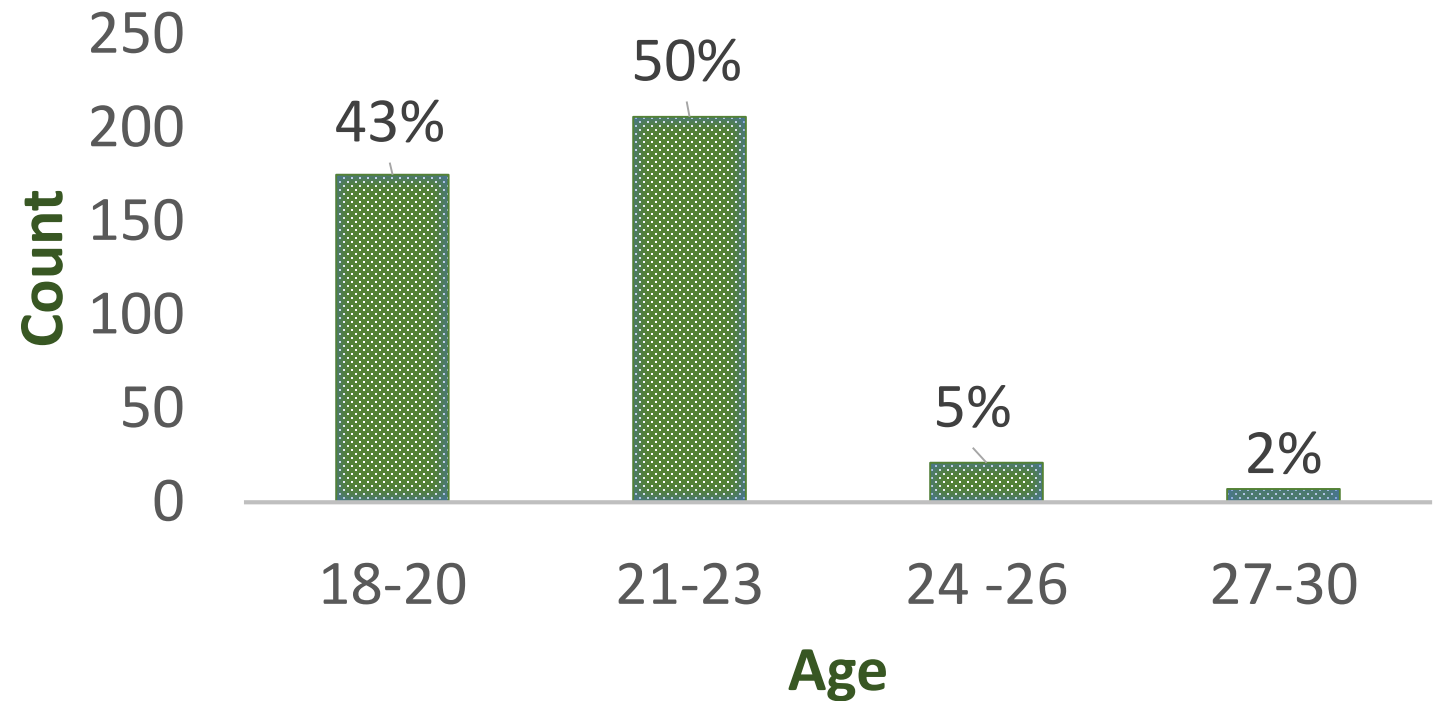
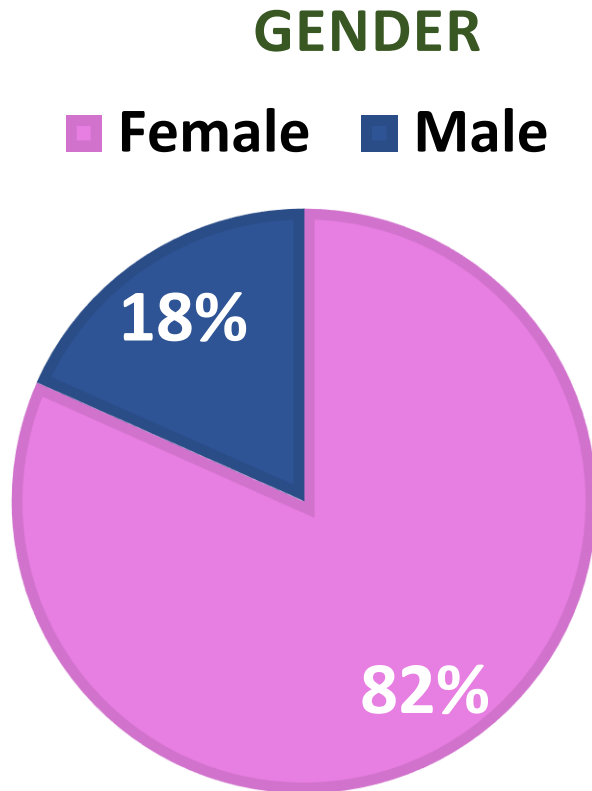
Chi-square Test



**APPROVED**

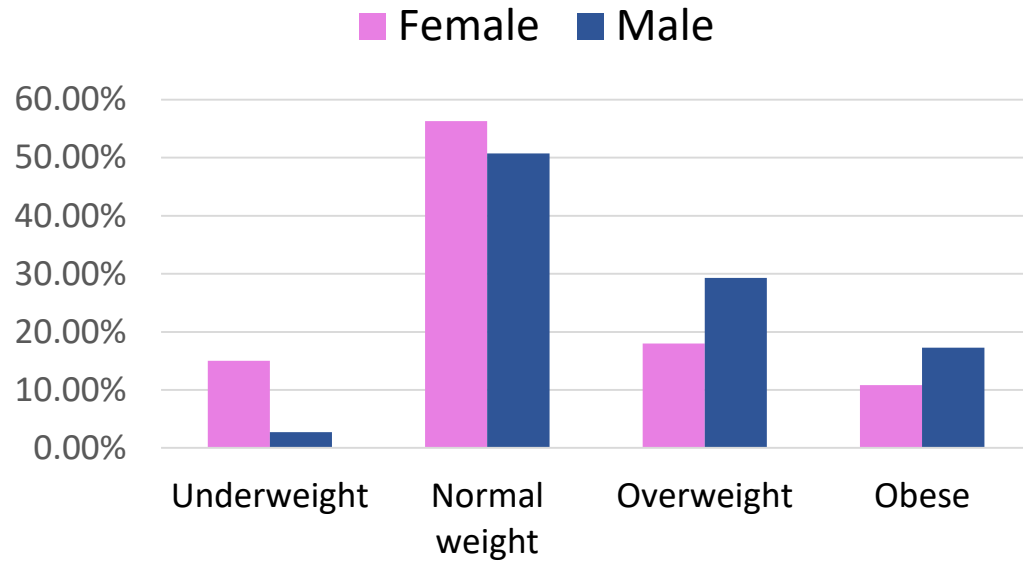
Zayed University  
Research Office

# Descriptive Results

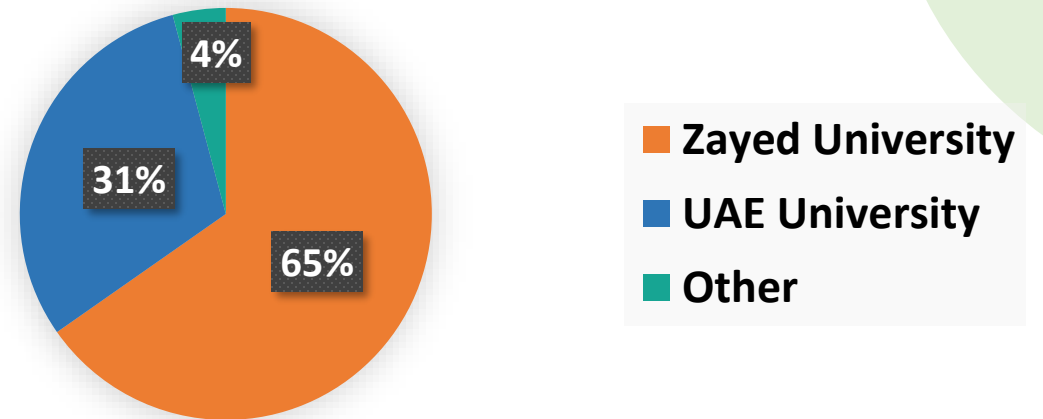


# Descriptive Results

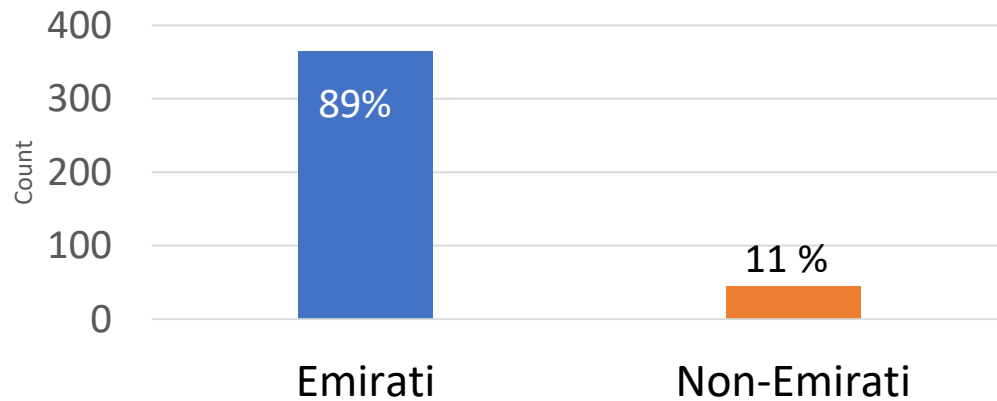
## BMI



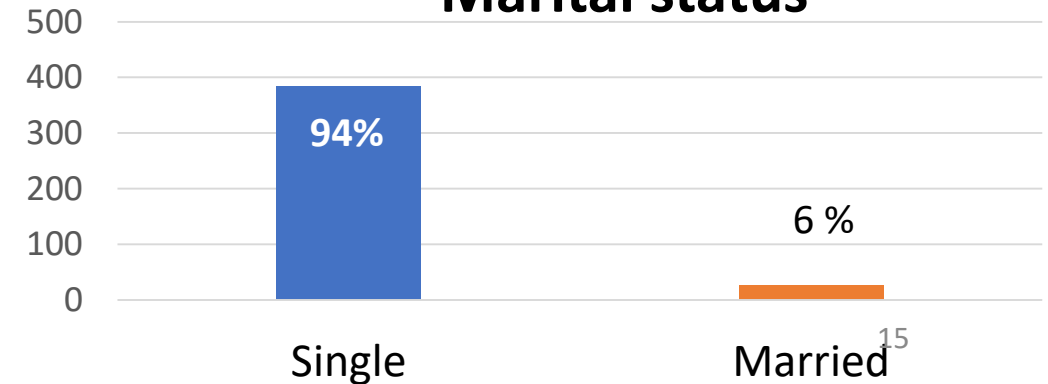
## University



## Nationality



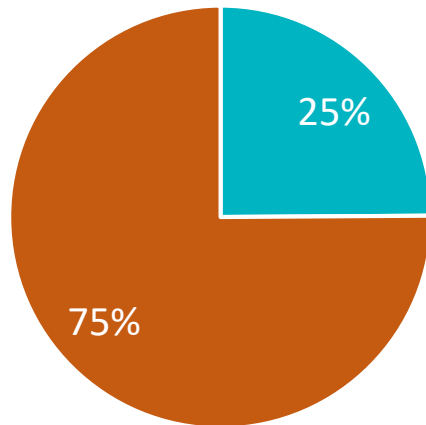
## Marital status



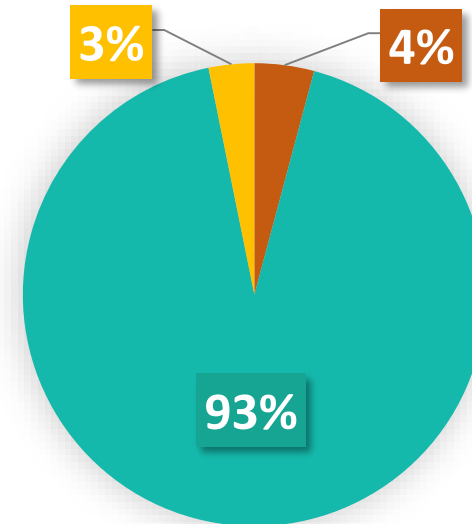
# Descriptive Results

## Major

■ Health science ■ Non-health science

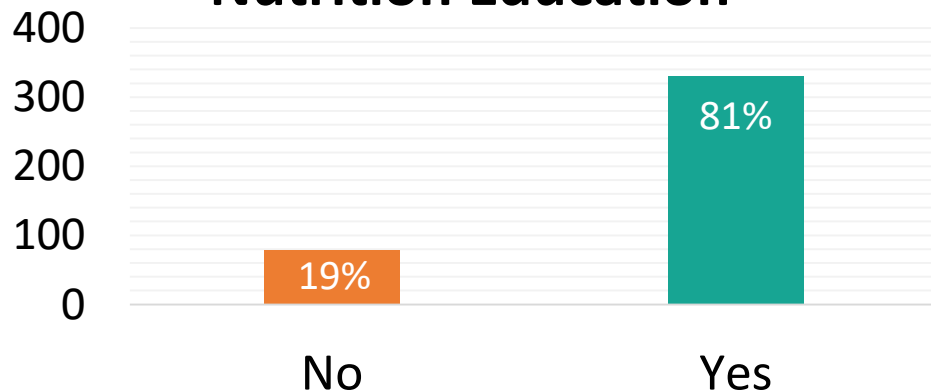


## Degree level



■ Diploma  
■ Undergraduate  
■ Postgraduate

## Nutrition Education



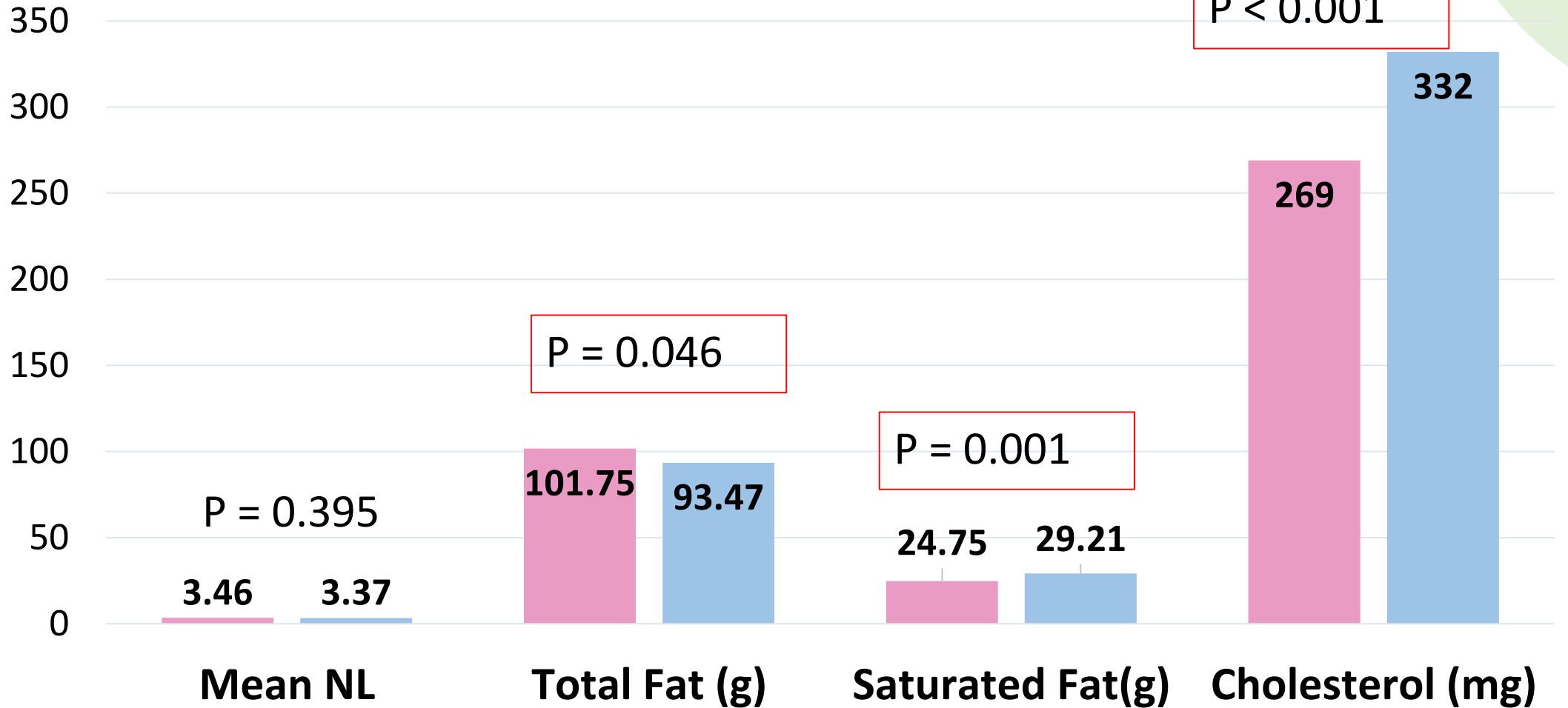
## Sources of Nutrition Education

Own Research	54.7%
School Curriculum	71.6%
Nutritionist/Dietitian	47.7%
Social media	60.7%

# Independent T-test

Total Mean NL = 3.4 out of 5

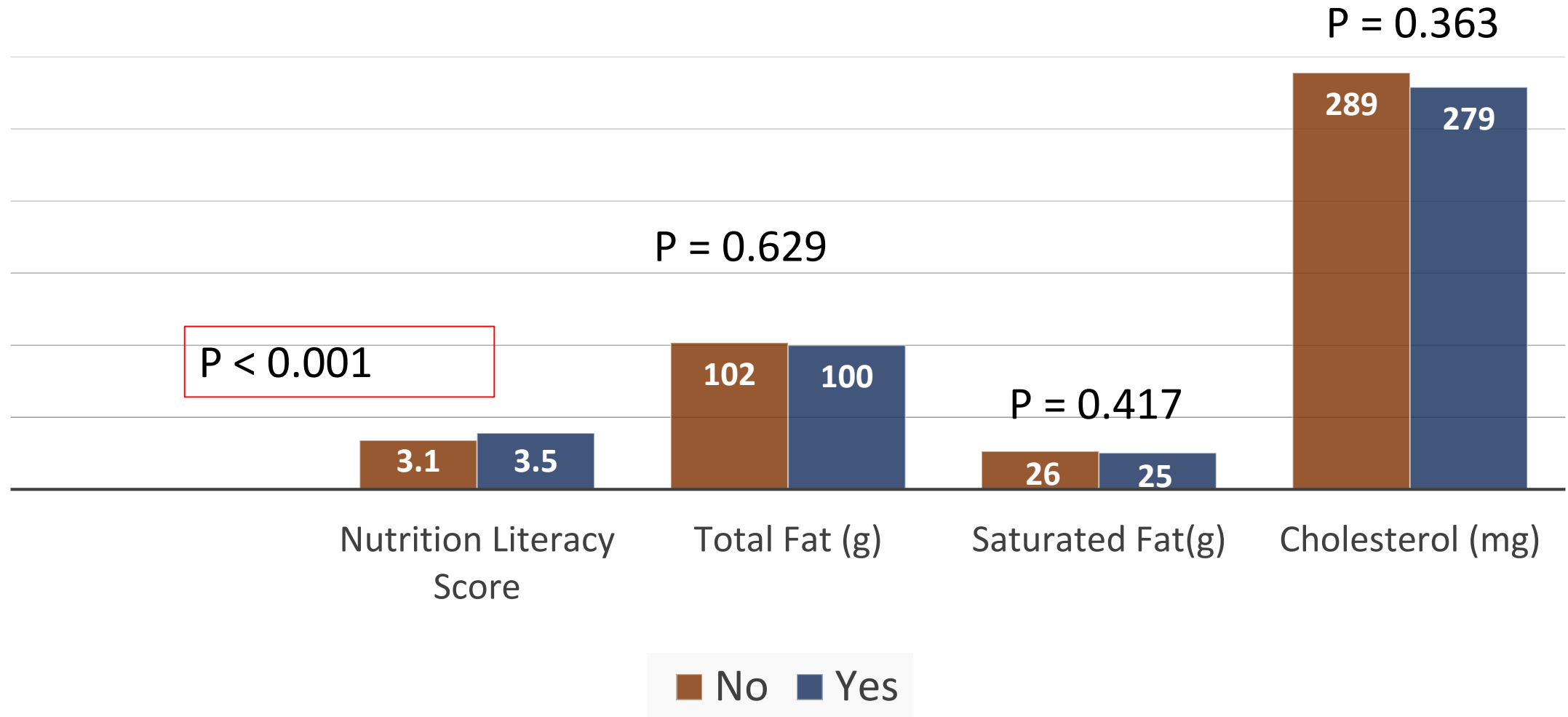
Female Male





# Independent T-test

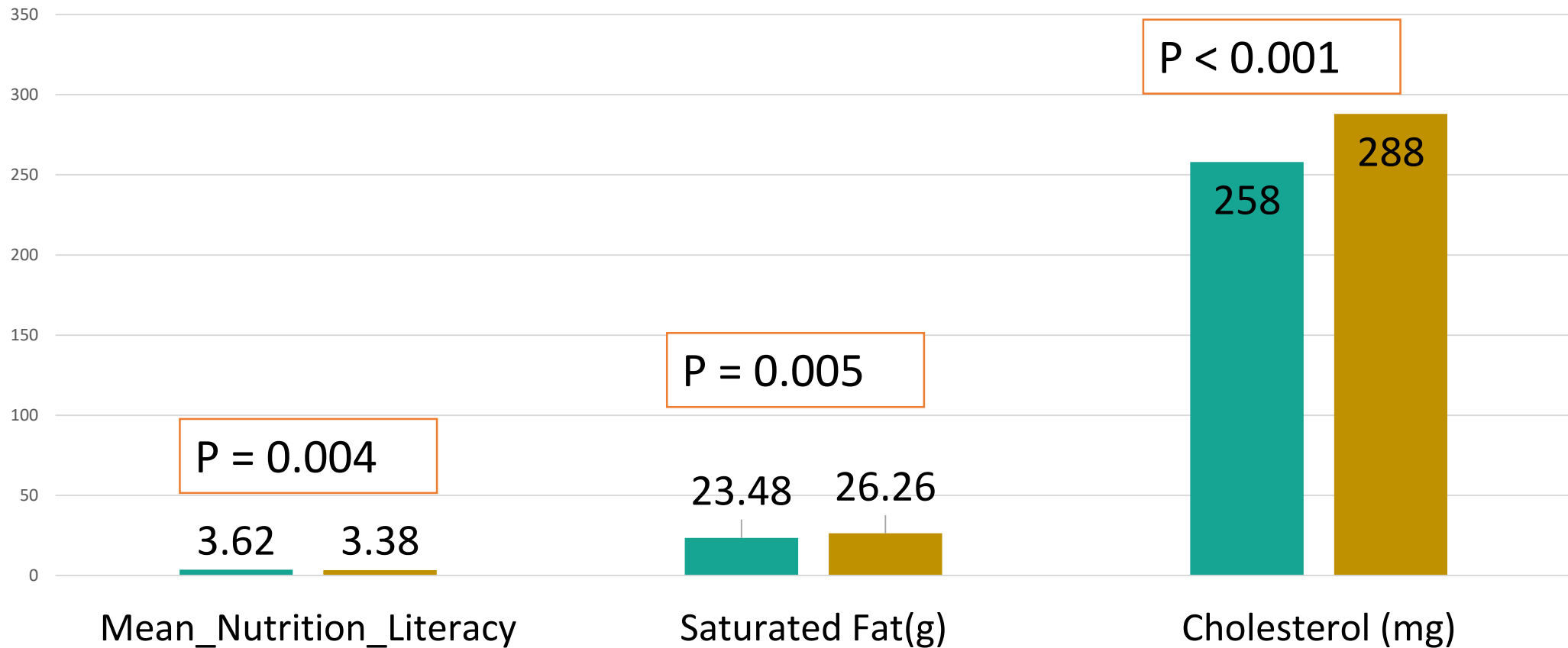
## Nutrition Education



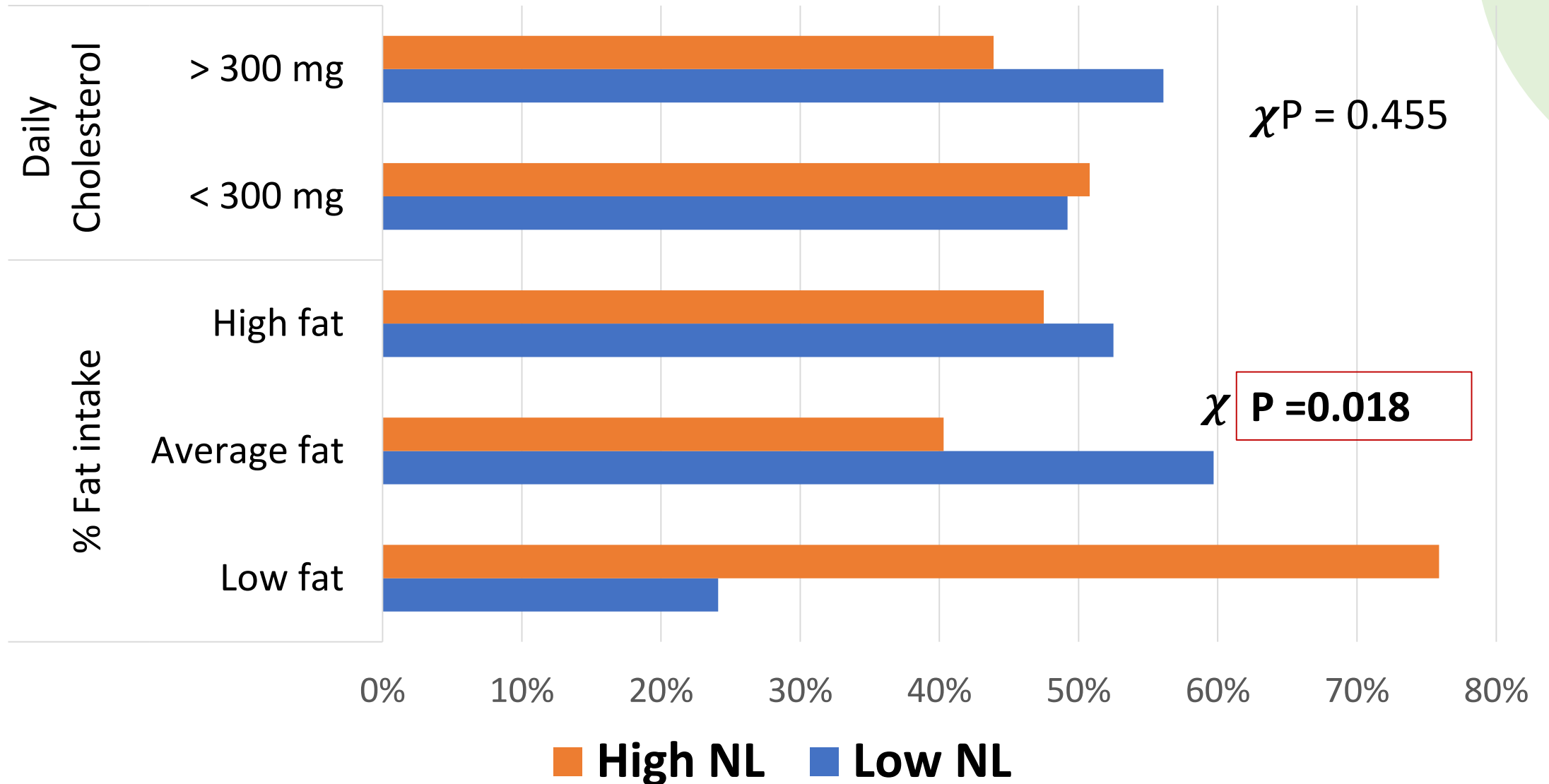
# Independent T-test

## Major

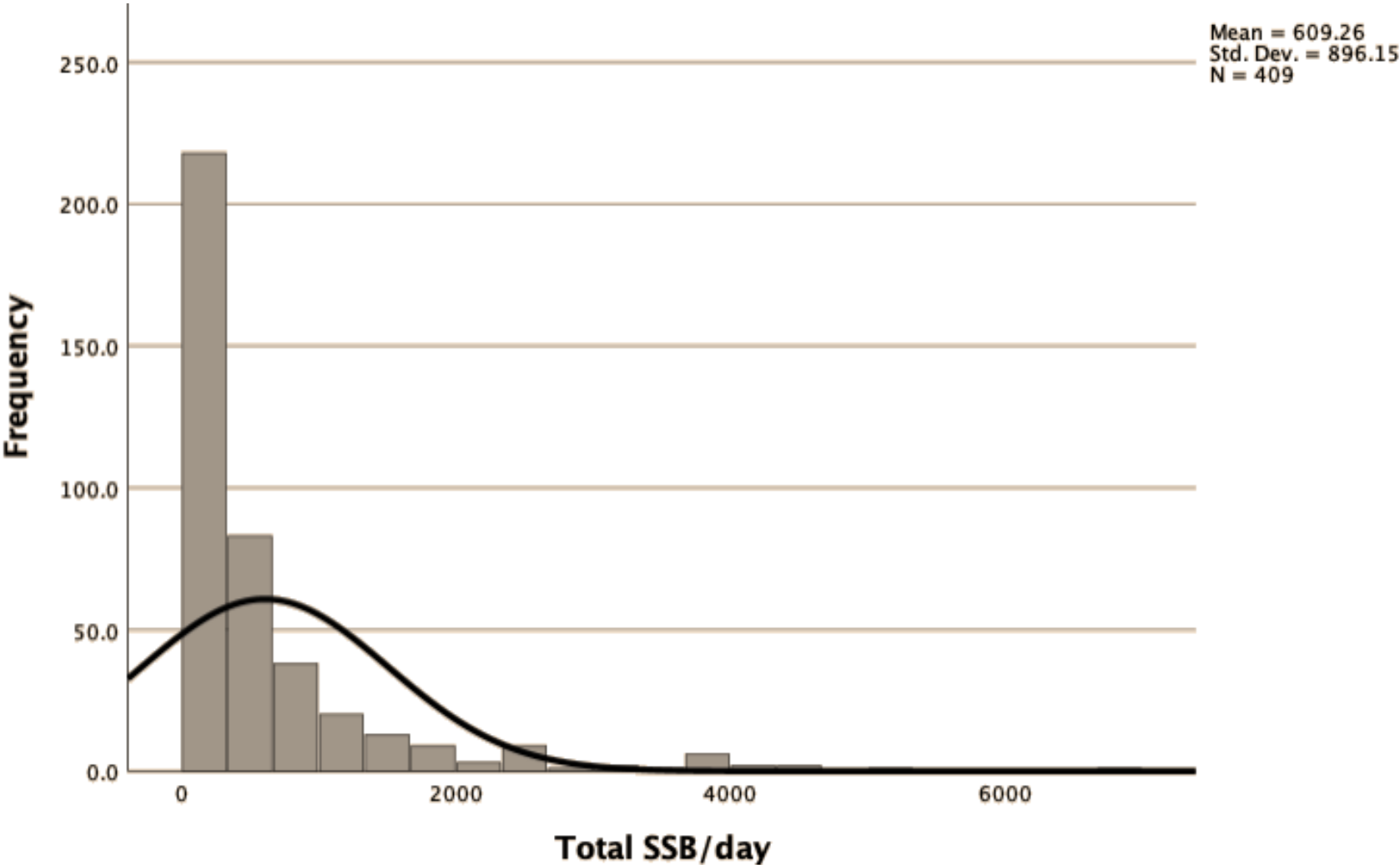
■ Health science ■ Non-health science



# Nutrition Literacy & Fat intake



# SSB Consumption Pattern

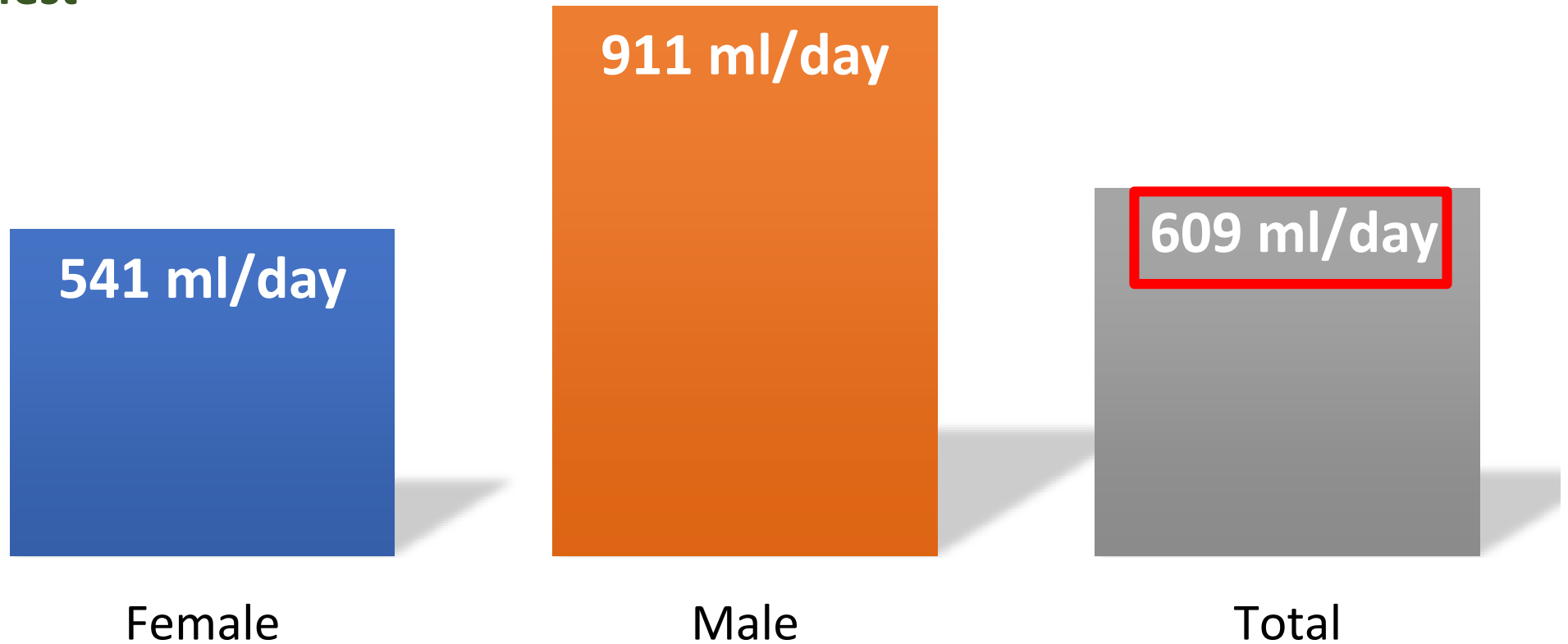


# Result

Average Total SSB intake (ml/day)

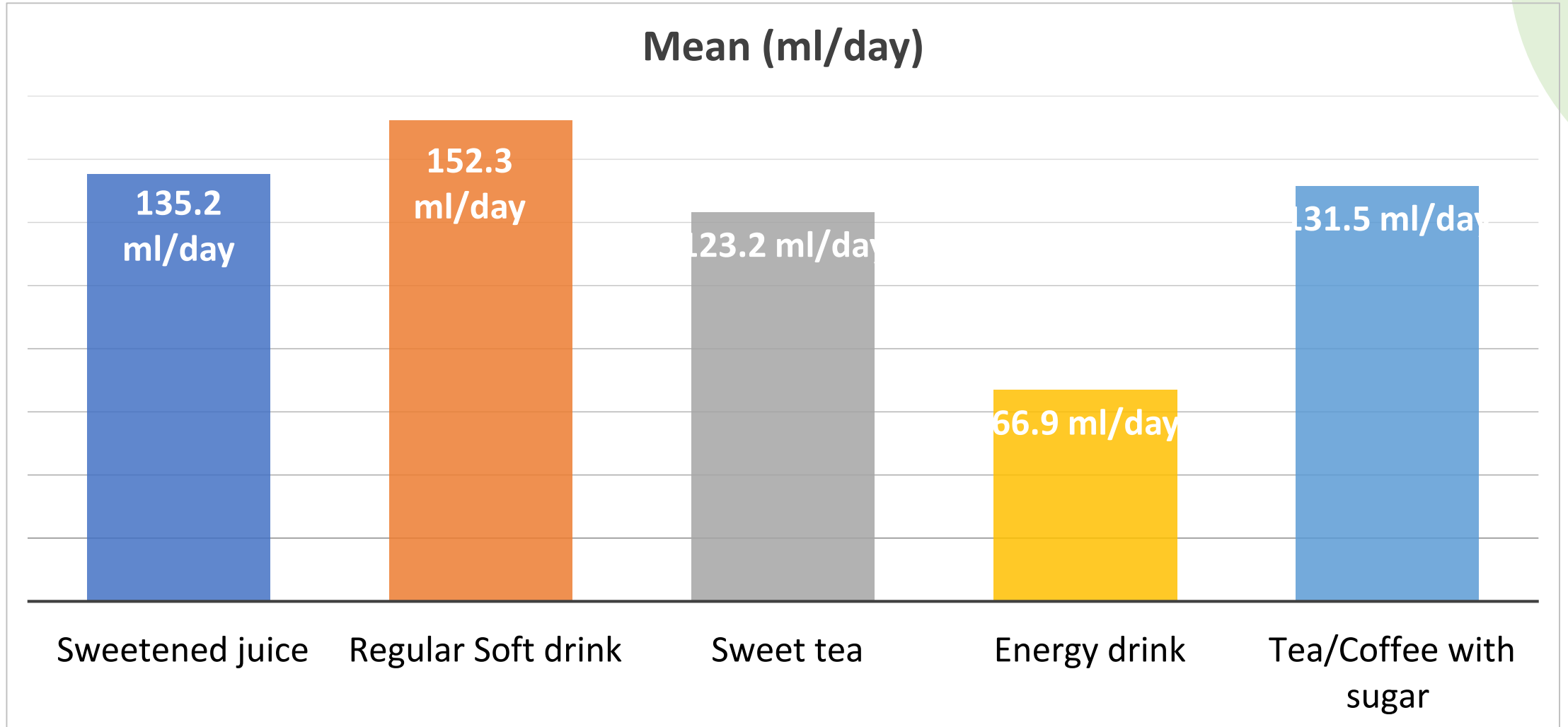
Mann-Whitney Test

P = 0.073

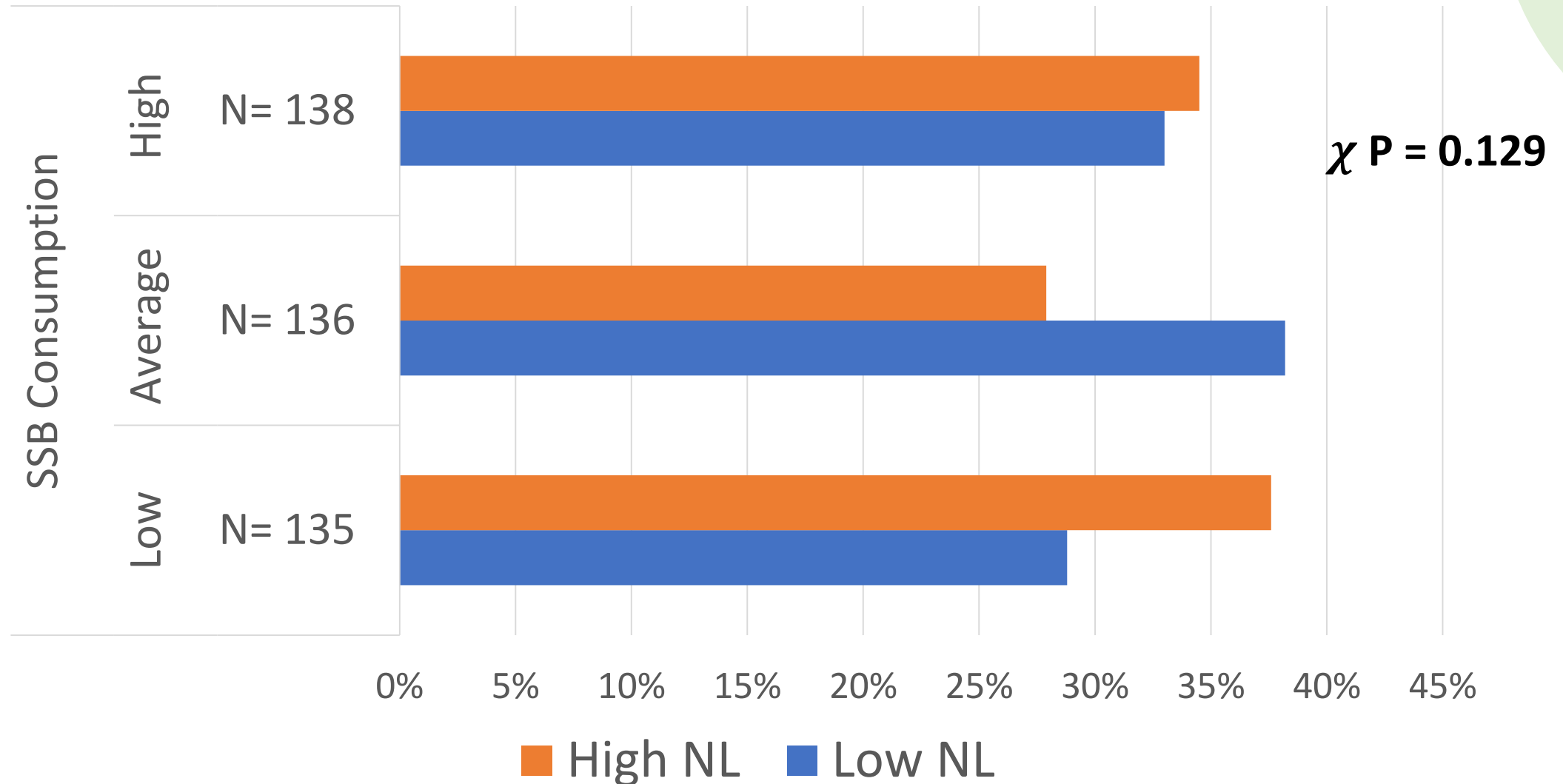


# Result

Mean (ml/day)



# Nutrition Literacy & SSB intake



# Discussion

## Findings

- Nutrition Literacy => ↓ Fat but X SSB intake
- Only major & Nutrition education affected Nutrition literacy.

## Similar Findings

- Nutrition Knowledge => ↓ Fat Consumption & improved dietary habit<sup>1</sup>.
- Nutrition education improved NL<sup>2</sup>.
- Positive attitude about added sugar<sup>3</sup>.

## Discordant Findings

- Nutrition literacy => did not affect eating behaviour<sup>4</sup>.
- ↑ SSB Knowledge => ↓ SSB intake<sup>5</sup>.
- Nutrition Literacy of females > males<sup>6</sup>.
- Socio-economic status affected nutrition literacy<sup>7</sup>.



# Strength and Limitation

## Strength

- The first to assess nutrition literacy of college students in the UAE.
- Large Sample Size (409)
- Assessed food and beverage intake

## Limitation

- Selection Bias due to Convenience Sampling.
- Response Bias due to Self-administered survey.
- Under-representation of male students (82 % female vs 18% male )
- Data collection tools not validated in the UAE.

# Conclusion

1

Nutrition literacy is associated with reduced fat intake, but not with intake of SSBs and daily cholesterol.

2

Nutrition education positively influences nutrition literacy.

3

There is a gap between nutrition literacy and consumption of SSBs.

# Recommendation

1

Validation of  
Instruments in the  
UAE.

2

Investigate drivers  
of increased SSB  
consumption.

3

Include nutrition  
educations in  
university  
curriculums.



**Thank You !**

**Any Questions?**

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# Data Collection Instruments

## 1 Short Nutrition Literacy Scale<sup>1</sup>

- Validated in Belgium
- 11-item questions
- Young Adults
- Cronbach's alpha = 0.80

10. If I have questions about healthy nutrition, I know where I can find information about it.
11. If I have questions about sustainable nutrition, I know where I can find information about it.  
Examples of sustainable nutrition are organic vegetables, free-range eggs, fair trade coffee, etc.
12. I am familiar with the basic rules of the Food Triangle.
13. I can assess whether information about nutrition is written with the intention of making money, for example by people who want to sell a product.
14. When I search for information about nutrition on the internet, I can distinguish between reliable and less reliable websites.
15. Advertisements often link nutrition and health. I find it easy to judge whether these links are correct or not.
16. I have the necessary skills to apply information about nutrition when cooking.
17. I can assess whether information about nutrition in the media is reliable.
18. I discuss information about nutrition with experts.
19. I follow nutritional advice from experts.
20. I base my diet on the latest scientific knowledge.

# Data Collection Instruments

3

## Block Rapid Food Screener<sup>2</sup>

- Validated in the USA
- 17 - item questions
- Formulas based on score

How often do you consume the following food items?	1/month or less	1-2 times a week	2-3 times a month	3-4 times a week	5+ times a week
Hamburgers, ground beef, meat, burritos, tacos					
Beef or pork, such as steaks, roasts, ribs, or in sandwiches					
Fried chicken					
Hot dogs, or Polish or Italian sausage					
Cold cuts, lunch meats, ham (not low-fat)					
Bacon or breakfast sausage					

# Data Collection Instruments

4

## Beverage Questionnaire<sup>3</sup>

- Validated in the USA
- 15-item questions

How often do you consume the following beverage items?	never or < 1 time per week	1 time per week	2-3 times per week	3-4 times per week	4-6 times per week	1 time per day	2+ times per day	3+ times per day
Water								
100% Fruit juice								
Sweetened juice beverages/Drink (fruit ades, lemonade, punch, Sunny Delight)								
Whole milk								
Reduced fat milk								
Low Fat/Fat free Milk(Skim, 1% Buttermilk, Soymilk)								
Soft Drinks, Regular								
Diet Soft Drinks/Artificially Sweetened Drinks (Crystal light)								
Sweetened Tea								

# Data Collection Instruments

## 4 Beverage Questionnaire<sup>3</sup>

- Multiplying amount with frequency.

<b>What is the approximate amount of beverage (in ml) you drank each time?</b>	I never drank	< 175 ml (3/4 cup)	250 ml (1 cup)	350 ml (1.5 cups)	500 ml (2 cups)	600 ml (2.5 cups)
Water						
100% Fruit juice						
Sweetened juice beverages/Drink (fruit ades, lemonade, punch, Sunny Delight)						
Whole milk						
Reduced fat milk						
Low Fat/Fat free Milk(Skim, 1% Buttermilk, Soymilk)						
Soft Drinks, Regular						

# Data Manipulation

1

## Categorizations

### Percentage Fat intake

- Low Fat
- Average Fat
- High Fat

### Nutrition Literacy (Median NL: 3.5)

- Low NL
- High NL

### SSB Consumption

- Low SSB
- Average SSB
- High SSB

2

## Equations

- Total Fat =  $32.7 + 2.4 (\text{Score}) + 11.2 S$
- Saturated Fat =  $9.4 + 0.88 (\text{Score}) - 3.5 S$
- Cholesterol =  $120 + 7.8 (\text{Score}) - 54.65 S$

- 0-7 points = low-fat intake (<25% of calories)
- 8-14 points = Average fat intake (25% – 35% calories)
- $\geq 15$  points = High-fat intake (> 35% of calories).

S = Sex: Male = 0, Female = 1