

Study on the prevalence of skin-related issues and impact of dietary interventions among college going students

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ABSTRACT

Introduction

Among the college-going students, skin conditions like acne, pigmentation, skin dryness and skin oiliness are very common. This may be due to many factors like their sleep patterns, stress level, physical activity level, diet and other lifestyle factors. The purpose of this study is to identify how prevalent are these skin issues and to evaluate the effectiveness of an intervention drink, Basil seeds cucumber lemonade. This is a refreshing drink which helps in reducing inflammation, contributes to skin hydration and contains essential nutrients like potassium, magnesium and vitamin C.

Methodology

It is a cross-sectional study performed using a structured questionnaire to assess the prevalence of the skin issues. A dietary intervention was then carried out by serving a skin healthy drink to the sample population for more than 10 days to assess the effectiveness of the drink on skin health. To measure the changes in the skin condition, pre and post intervention questionnaires were used. The overall data was analysed by using SPSS, Chi-square tests and ANOVA test.

Results

The research shows that around 67.8% of students experienced skin issues among which acne was most common. It showed that diet, hydration, and life style factors like sleep, stress and physical activity levels had a substantial influence on the skin health. After the intervention, majority of the participants reported improvements. About 68% improvement in skin smoothness, reduction in dryness or oiliness and slight lightening of pigmentation. The statistical analysis indicated some significant associations, while others showed no strong relation.

Conclusion

The study reveals that among college-going students, skin issues are highly prevalent and it is mostly due to the lifestyle factors and eating habits. The intervention demonstrated significant improvements in the skin texture, acne reduction, skin hydration and brightening of the skin. This suggests that simple dietary changes can enhance skin health.

Keywords

Skin issues, lifestyle factors, dietary intervention, basil seeds cucumber lemonade, prevalence, skin smoothness, acne reduction.

INTRODUCTION

Skin is the largest organ of our body which aids to cover and provide shielding to the body. The function of the skin is to prevent dehydration and maintain fluid balance, it allows us to feel hot or cold things, fights against viruses, bacteria and other infections, keeps the body temperature in equilibrium and is responsible for the synthesis of vitamin D. Skin disease is characterized by any condition that blocks or irritates the skin. This may lead to changes in the appearance of the skin (Safaei et al. 2021). Skin health is a vital element of

our overall health which is mostly influenced by multiple factors like genetics, environmental, hormonal imbalance, lifestyle and most preferably dietary factors. Among the youngsters particularly the college going students skin problems are very common. Many studies outlines that there is recurring breakouts and other dermatological issues due to stress, irregular sleep cycle and negligent dietary habits (Conforti et al. 2022).

There is an increment of about 53.7% in all age years for different skin diseases from 1990-2017. It is estimated that 30-70% of people are effected with skin related issues. According to WHO, it is stated that conditions like acne and eczema are more common and could effect 1.8 billion people. Among children the prevalence of these conditions rise from 4.3-49.1% (A Kavita et al.2017).

Skin diseases arises when unwanted microorganisms enter the skin and starts to proliferate. These involve microorganisms like viruses, fungi, bacteria and parasites each of which are able to cause different type of diseases. The entry of these microorganisms is generally through a cut in the skin, insect bite, wound, scratch that effects the skin lining. These result in swelling, redness or pus formation (Kashish 2025).

1.1) TYPES OF SKIN DISEASES

Skin diseases are diverse range of conditions that influences the skin health. In recent years problems such as acne, dryness, oily skin and pigmentation are highly prevalent. The most commonly occurring skin conditions are described below.

1.1.1) ACNE

The most common skin condition among the youth is acne. It occurs when the hair follicles in the skin becomes clogged with oil and dead skin cells. It usually persists during adolescence but can also continue into adulthood. Anxiety, hormonal changes and unhealthy eating patterns can worsen acne. It commonly effects the face, shoulders, chest and back and leads to inflammations in deeper lesions of the skin. In more severe cases cyst or pus formation is visible (Mukesh 2025).

1.1.2) XEROSIS / DRYNESS

The word "xero" is derived from the greek word which means dry. Dryness or xerosis is most frequent in older adults. It is associated with the decline in the oils on the skin surface. As we grow, our sweat and sebaceous glands are mildly active mostly due to hormonal changes making xerosis a common skin issue. People with diabetes are at high risk of developing xerosis. The etiology involves overcleansing, frequent bathing, dehydration, living in low humid areas and during winters. The texture of the skin becomes white, flaky, itchy, dry and scaly and the skin becomes red or pink (Jacquelyn et al. 2023).

1.1.3) OILY SKIN

Oily skin occurs when glands in the skin produce too much sebum which is a waxy substance that seals the moisture. Oil may be helpful for keeping the skin healthy but too much oil or sebum can sometimes lead to blocking of skin pores and may cause acne. Skin looks shiny or greasy. Pressure and unhealthy diet may contribute to oily skin. Also, heat can trigger more oil production from the glands. Shifts during maturity, pregnancy or menopause can increase oil production. The skin may feel thicker with visible blackheads, whiteheads and frequent acne. Sometimes reduced intake of vitamin A and vitamin B2 causes the skin to appear oily (Brooke et al. 2024).

1.1.4) PIGMENTATION

Skin pigmentation is caused due to a substance called melanin. Two types of melanin are present, eumelanin is characterized for darker skin tone while pheomelanin causes lighter skin tone. People with high amounts of eumelanin is associated with lowered risk of skin cancers. Genetics, sun exposure and certain medications are responsible for the pigmentation of skin. The production of melanin by the body results in either hypopigmentation or hyperpigmentation. Topical creams are the first line treatment for skin pigmentation. It can also be treated orally through herbal remedies and diet (Amin et al. 2023).

1.1.5) FUNGAL INFECTIONS

Fungal infections are caused by dermatophytes. It is also caused by a fungi that survives in warm and moist environment. These can spread through direct and indirect contact and hence is contagious. The fungi of genus is Tinea and is more prevalent. When a person is diagnosed with fungal infections, there is a feeling of burning or irritation mostly in sweaty or covered areas. When the fungus is present in the nails, it leads to discoloration and brittle nails. The skin becomes red, itchy with scaly patches. The skin between the toes when infected gives cracking or peeling voice which is generally referred to as athletes foot (Mukesh 2025).

1.2) RELATION BETWEEN DIET AND SKIN

Diet plays pivotal role in regulating hydration of the skin, sebum production, inflammation and factors that directly addresses the common skin issues. According studies, high glycaemic foods have been strongly linked with increased acne whereas fruits and vegetables rich in antioxidants maintain skin health and act as a barrier protecting the skin from infections and diseases (Dall'oglio and Dewley 2021).

The aim of this intervention is to eliminate these skin issues by providing Basil seed cucumber lemonade. The ingredients of this drink is comprised of cucumber, basil seeds and pomegranate. These are natural dietary components which solves the issue of inflammation being anti-inflammatory. These also enhance the condition of the skin as they are antioxidant dense compounds. These ingredients are affordable, healthy and safe for consumption. Being derived from plants, they help build up moisture in the skin, reduce oxidative stress, aids in wound healing and help balance the skin pigmentation (Chan et al. 2022). By identifying patterns of skin issues and evaluating the responses of nutritional intervention this research focuses to prevent skin related diseases and to create awareness among the young adults the need to inculcate healthy eating habits and to adopt healthy lifestyle.

1.2.1) EFFECT OF CUCUMBER ON SKIN

Cucumber is well known for its soothing, hydrating and also its antioxidant properties which gives a positive effect on our skin health. It contains fiber, vitamin C and K and minerals like potassium and silica and about 95% water content which aids in improved skin texture, restores complexion, hydrates the skin and promotes digestion. They have a low glycaemic index making them manage blood sugar levels (Murad 2023). Cucumber having all these benefits is often used to manage dryness, acne, dullness of skin and overall skin health.

1.2.2) EFFECT OF POMEGRANATE ON SKIN

Pomegranate is a nutrient rich food which is recognized for its various favourable effects on overall health. It has powerful skin protective properties as it contains polyphenols that reduces inflammation. According to National institutes of health (NIH) these antioxidants provides shield from UV damage, aids

hyperpigmentation and preserves collagen. Different parts of pomegranate has positive effects on skin repair mechanisms, erythema, psoriasis, acne vulgaris, pigmentation and it also has anti-aging effects. (Jovana et al. 2024)

1.2.3) EFFECT OF BASIL SEEDS ON SKIN

Basil seeds are usually used in traditional remedies for skincare as it has antioxidant and anti-inflammatory properties. These seeds are also filled with numerous nutrients and minerals which provides hydration and promotes cell repair. It has natural detoxifying properties which can reduce acne and breakouts. Frequent use of these seeds can improve skin elasticity, skin texture and brightens the skin overtime. (Deepak 2025)

1.2.4) EFFECT OF LEMON ON SKIN

Lemon contains vitamins, fiber and other compounds which can contribute in a healthy diet. Vitamin C in lemon helps the body to build collagen for the skin, absorb iron and support the immune system. It has antioxidant properties that enhances the skin health. Folic acid and other minerals in lemon treats oily skin, dandruff and improves acne. (Jabeen 2024).

Overall spreading awareness related to skin diseases among college going students is crucial as they are more prone to stress, unhealthy eating habits, drugs and irregular sleep cycle. Early intervention can prevent dermatological issues and improve the standard of life. According to WHO (2023) the most common cause of disability is the one with skin diseases and this must be regarded as the major public health concern. As we know skin continuously regenerates itself and depends on the nutrients we eat. Consuming food which is balanced supports skin structure, gives hydration and acts a shield. Simultaneously poor dietary habits can worsen skin health leading to the previously mentioned skin conditions. Thus healthy diet is the base for clear and glowing skin. According to American academy of dermatology AAD (2021), nutrition is an important factor that can enhance or even aggravate skin conditions. This dissertation aims to contribute valuable evidence to support nutrition based interventions in preventing skin diseases and improving skin health among young adults.

1.3) RATIONALE OF THE STUDY

Skin issues like acne, dryness, pigmentation and oily skin are increasingly common among the young adults due to their academic stress, irregular eating habits, inadequate hydration and other lifestyle factors like sleep schedule and physical activity level. There is lack of awareness of influence of diet on skin health. The role of dietary intervention in improving the skin conditions are still not explored among the younger generation.

The intervention drink ingredients, basil seeds, cucumber, lemon juice and pomegranate are nutrient-rich which has antioxidants, anti-inflammatory and detoxifying properties. But there is limited scientific evidence about the effectiveness of such simple, dietary or home remedies to solve skin issues.

As a result, this study is essential to understand both the prevalence of skin issues among the college-going students and how effective is a dietary intervention on improving these issues. The outcomes can encourage the students to adopt healthier eating habits and choose better and affordable ways to enhance the overall skin health.

1.4) PURPOSE OF THE STUDY

The purpose of this study is to identify the prevalence and the different types of skin issues like acne, dryness, oiliness and pigmentation among the college-going students and also to examine the effect of diet and other lifestyle factors on the skin issues. Moreover, this study focuses on assessing the effectiveness of intervention drink which is, basil seed cucumber lemonade in improving the skin issues. Altogether, this research is to understand if natural dietary changes can aid in improvement of skin health in the young adults.

REVIEW OF LITERATURE

Assaf et al (2025) looked through the general populations and discovered that there is an improvement in skin hydration and skin integrity from nutritious diets. They concluded that foods rich in vitamins, EFA s, minerals and polyphenols reduce inflammation and improve the skin health.

Kuang et al. (2025) observed 2200 young chinese women and recognized actual criteria to classify oil-sensitive skin into barrier, neuro and inflammatory-sensitive subclasses. He came up with the result that there is high sebum, enlarged pores, and early acne susceptibility. The authors also showcased the need for customized skincare depending upon specifiable skin parameters.

Taha et al. (2025) in their review tried to interpret the correlation of mediterranean diet and acne vulgaris in the young adults. They found a substantial negative link between higher adherence to the mediterranean diet and acne severity but not with acne development.

Amani et al. (2024) assessed in-vitro samples of a cucumber and citrus formulation and determined that there was 90% of inhibition in DPPH and H₂O₂ antioxidant analysis of 76% and protein denaturation assessment, therefore manifesting the formulation's potential as a natural antioxidant.

Borrego-Ruiz et al. (2024) researched on the human and animal studies which are on relation between skin issues, gut microbiome balance and diet. They observed that foods rich in antioxidants, fiber and phytonutrients. They also discovered that probiotics, synbiotics or postbiotics could aid in restoring the gut and skin homeostasis, decreasing the skin inflammation and enhancing the outcomes for acne, alopecia and atopic dermatitis.

Cordiano et al. (2024) evaluated a number of in-vitro studies manifesting that pomegranate extract benefits conditions like aging by reducing the oxidative stress, inflammation, damage from UV rays. The outcome suggests favourable anti-aging effects, though there's no sufficient clinical evidences.

Dimitrijevic, et al. (2024). *Punica granatum L. (Pomegranate) Extracts and Their Effects on Healthy and Diseased Skin*. Herein, Dimitrijevic reviewed preclinical and clinical evidence that pomegranate extracts have bioactive substances with antioxidant, anti-inflammatory, and antimicrobial effects. They concluded that evidence of the efficacy of these extracts in treatments for skin disorders such as acne, photoaging and the delays in wound healing. They suggest that pomegranate has great dermatologic potential, but that more randomized controlled trials in humans are necessary.

Guertler, A. et al. (2024). Omega-3 fatty acid deficiency in acne sufferers found that the mean HS-omega-3 Index in erythrocytes was only 5.15% in this cross-sectional study of 100 German acne patients, which is significantly below the recommended 8–11%. This suggests that most participants had a significant omega-3 fatty acid deficit. Additionally, they found a correlation between higher

omega-3 levels and regular legume consumption and omega-3 supplementation, indicating that dietary changes may be able to alleviate this deficiency.

Hao et al. (2024) performed a randomized single-blind controlled trial among some healthy females and revealed that daily supplementation had beneficial effects on skin hydration, elasticity and skin tone, but decreased firmness and melanin.

Kelly et al. (2024). Optimizing Dietary Decisions for Skin Health: Nutritional Dermatology. Using population data and food-composition databases, the authors reviewed the literature on important nutrients and phytonutrients and their roles in promoting skin health. They suggested a “skin-healthy” diet and scoring system, but more research is required to implement these findings.

Zhakupbevok et al. (2024) reviewed studies about the cells, animals and microbes. He observed similarities in the studies involving Ocimum basilicum extracts. He noticed it has antibacterial, antifungal and antioxidant effects, but there are lack of clinical data about it.

METHODOLOGY

A research proposal titled “**A Study on the Prevalence of Skin-related issues and the Impact of Dietary Interventions among College-going students**” was presented to the ethical committee involving all the members of the department. During the study, all the suggestions provided by the committee members were included in the study design to make sure that the research methodology is comprehensive and ethical.

Study period: 90 days

Study Design:

This study is performed in 2 phases- Cross-sectional study for knowing the prevalence of the skin issues, conducted in Avinash college of commerce, Himayat nagar and St. Anns college for women, Mehdipatnam and Experimental study for the dietary intervention.

Sample size:

The sample size was calculated using Cochran’s formula

Population size= n

Confidence level (Z) = 95%

Margin of error (E) = 8%

$$n = Z^2 \times p (1-p) / E^2$$
$$n = (1.96)^2 \times 0.5 \times (1-0.5) / (0.08)^2$$
$$n = 3.8416 \times 0.25 / 0.0064 = 150$$

Therefore, the sample size is 150

Sample Method:

The study was conducted in two phases, namely the Prevalence study and Dietary intervention study.

Phase I – Prevalence study:

This study included a total of 150 college students for estimating the prevalence of the common skin issues like acne, oily skin, skin dryness and pigmentation. The sampling method used was **Convenience sampling method** as there was accessibility of the students present in the campus at the time of data collection.

Phase II – Dietary intervention study:

For this phase, 20 students were selected using **Purposive sampling method** depending on:

- A person having at least one skin issue
- The individual's will to take part in the dietary intervention
- Someone who does not have any allergies to the ingredients present in the drink

The responses of these 20 students before and after the intervention were compared to evaluate the effectiveness of the drink.

Inclusion criteria:

- College-going students aged 18-25 years.
- For the intervention phase – individuals with at least one skin issue.

Exclusion criteria:

- Students younger than 18 years and older than 25 years.
- Individuals who are allergic to basil seeds, lemon, cucumber or pomegranate.
- Participants who are unable to incorporate the intervention drink in their regular routine.

Data Collection Methods:

Structured Questionnaire (Pre-intervention):

A Standardized Pre-intervention questionnaire was given to all the 150 students. The questionnaire consisted of:

- Demographic profile
- Assessment of skin issues (acne, pigmentation, skin dryness and oiliness)
- Dietary habits
- Impact of diet on skin
- Lifestyle factors (sleep patterns, stress levels and physical activity levels)
- Management of skin issues

This helped to determine the prevalence of the skin issues among the young adults.

Dietary intervention: Basil seeds cucumber lemonade

Following the pre-intervention questionnaire, for those with skin issues a skin-healthy drink, Basil seeds cucumber lemonade was formulated. These individuals constituted the intervention group.

The drink consisted of:

- Basil seeds- Natural detoxifying agent and has anti-inflammatory properties
- Cucumber- Provides hydration and controls oil production
- Lemon- Contains vitamin C which acts as natural skin brightener
- Pomegranate- Supports collagen production as it has antioxidants

Method of preparation:

- Fresh lemonade was prepared by mixing lemon juice in water. A small quantity of salt and jaggery was added to balance the taste and provide natural sweetness.
- Fresh cucumber was washed, peeled and the central seed portion was completely removed.
- The remaining cucumber was grounded into a fine paste and strained to obtain a clear cucumber extract.
- Add this cucumber extract to the lemonade and mix well. Also add soaked basil seed to this mixture followed by fresh pomegranate seeds to enhance the nutritional value.

Nutritional profile of the drink:

S.No.	Ingredients	Quantity	Energy	Protein	Fats	Vitamin C	Potassium
1.	Basil seeds	3 g	15	0.6	0.6	-	78.5
2.	Cucumber	50 g	9.8	0.3	0.08	3	91.5
3.	Lemon juice	10 ml	3.6	0.04	0.08	4.8	11.3
4.	Pomegranate seeds	3 g	1.6	0.04	0.03	0.3	6.1
		Total	30 KCal	0.98 g	0.79 g	8.1 g	187.4 mg

Nutrient value per 150ml

All the ingredients used in the making of this drink were natural, safe and easily digestible. 150ml of the drink was served to all the participants once daily for 15 days.

Post-Intervention Questionnaire:

After the intervention period, a post intervention questionnaire was given to 20 students. The questionnaire examined:

- Visible changes in the skin (improvements or adverse effect in skin issues)
- Skin texture
- Drink acceptability
- Overall satisfaction with the drink

Data collection Process:

The students on campus were given the questionnaires in person. For the clarity of the responses, some of the participants were individually interviewed. For the intervention, the drink was served to the students daily and regular follow-up was conducted in order to check the progress and handle the queries.

Consent was taken from all the participants prior to the data collection and the data collection was completed in 30 days.

Statistical methods used:

The data collected was compiled, organized, tabulated and statistically analysed using MS Excel and SPSS software (statistical package for the social sciences). The data was analysed using Chi square and Anova tests, depending on the nature of the variable

For the quantitative data like age, gender, height and weight, the range, mean, standard deviation and degree of freedom was calculated.

Mean is the sum of all the observations which are divided by the total number of observations. It represents the primary value of the data. It is calculated by;

For n values: $x_1, x_2, \dots, x_n$

$$\bar{x} = \sum_{i=1}^n x_i / n$$

Maximum value in the dataset is the largest number, it is denoted as Max and Minimum value is the smallest number in the dataset and is denoted by Min.

Standard deviation measures the degree to which the data values deviate from the mean. It can be calculated by;

$$s = \sqrt{\sum (x_i - \bar{x})^2 / n - 1}$$

ANOVA test (analysis of variance):

It is a statistical test which is used to compare the means of three or more groups to determine if they have a significant difference between them. In this study, One-way ANOVA was used to differentiate the mean age, weight and height of the male and female students.

Chi-Square test:

It is a statistical test used to find out the association between two categorical variables.

$$\chi^2 = \sum (O - E)^2 / E$$

where, O is the observed value and E is the expected value

Here, this test was used to determine whether the skin-related variables were correlated with other factors like gender with experience of skin issues, dietary habits with skin issues etc;.

The Chi-Square test was determined in terms of:

- χ^2 value- to measure the difference between observed and expected frequencies.
- p-value- to determine whether the observed association is significant.
- Degree of freedom (df) usually refers to the values in the dataset can vary freely while having a fixed mean.

$$df = n - 1$$

where, n = number of observations

RESULTS AND DISCUSSIONS

Descriptive analysis will be carried out for quantitative variables, frequency and proportion for categorical variables by using means, percentages and standard deviations. Data will also be represented using bar graphs. The interrelation between the categorical variables and the quantitative outcomes will be evaluated by comparing the mean values. ANOVA and Chi-square test will be used to assess the statistical significance.

The association between the explanatory variables and categorical outcomes will be determined by cross tabulation and comparison of percentages.

Demographic details

Anthropometric profile by gender:

Gender		Age	height	weight
male	Mean	22.39	171.527419354839000	70.387
	Std. Deviation	2.760	12.432838186119900	13.7464
	Minimum	18	132.00000000000000	48.0
	Maximum	25	210.80000000000000	115.0
female	Mean	20.30	158.016091954023000	54.818
	Std. Deviation	2.221	8.687854039139910	18.6249
	Minimum	18	124.60000000000000	36.0
	Maximum	25	182.80000000000000	190.0
Total	Mean	21.17	163.638255033557000	61.297
	Std. Deviation	2.660	12.337881664270600	18.4049
	Minimum	18	124.60000000000000	36.0
	Maximum	25	210.80000000000000	190.0

The table differentiates between the age, height, weight of the males and females. It shows that the male students had higher mean age, height and weight which is 22.39 years, 171.5 cm height and 70.3 kg weight respectively compared to that of the female students, whose mean age was 20.3 years, height 158 cm and weight 54.8 kg. The standard deviation shows that there is more variance in the height and weight among males than in females. For both males and females the minimum and maximum values indicate a higher variation in height and weight, respectively. Overall, the mean values lie between the male and female averages, revealing characteristic gender related dissimilarity in age, height and weight among the students.

Gender-wise variation in the anthropometric measures:

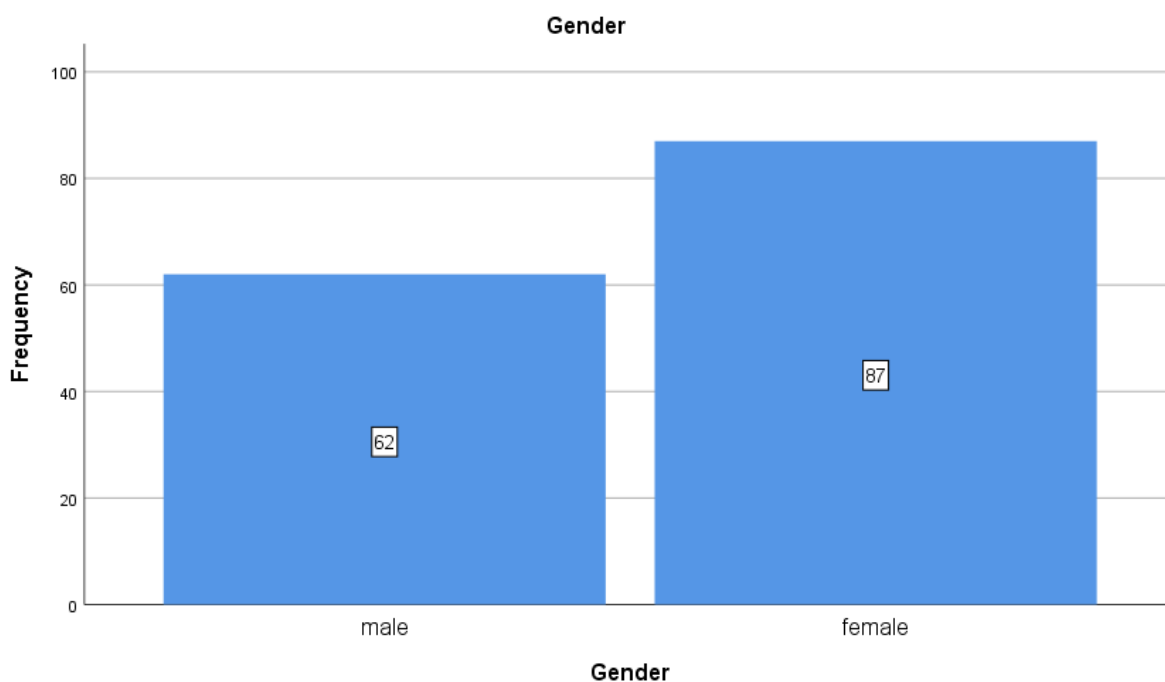
ANOVA Table			Sum of Squares	df	Sig.
Age * Gender	Between Groups	(Combined)	157.866	1	0
	Within Groups		888.94	147	
	Total		1046.805	148	
height * Gender	Between Groups	(Combined)	6608.771	1	0
	Within Groups		15920.28	147	
	Total		22529.05	148	
weight * Gender	Between Groups	(Combined)	8774.648	1	0
	Within Groups		41359.08	147	

	Total		50133.73	148	
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This table shows the ANOVA test outcomes. It shows that gender has statistically major effect on the anthropometric measurements among the students. For all the three variables, the significance value which is $p = 0.000$, indicates a substantial difference between males and females. The Sum of squares of the between-groups is considerable for each variable, which confirms that the variation observed is mostly due to gender. Altogether, the outcomes show that males and females differ significantly in their anthropometric profile in the study population.

Gender distribution:

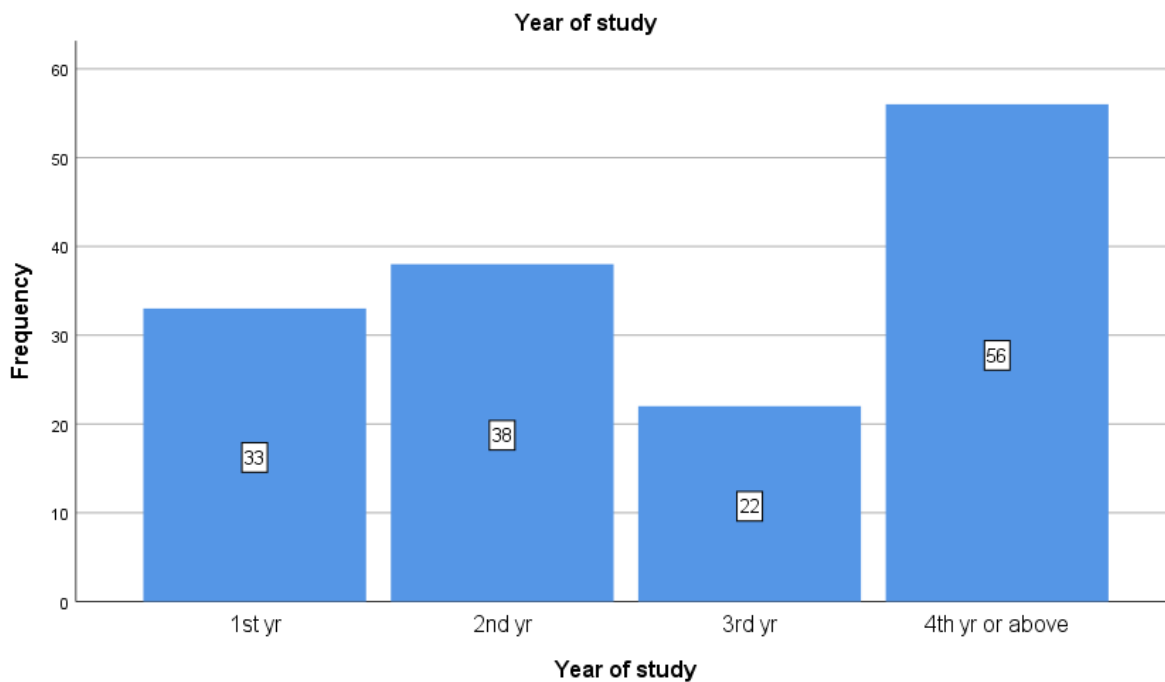
Gender	Frequency	Percent
Male	62	41.6
Female	87	58.4
Total	149	100.0



The frequency of female students is more than male students which is 58.4% and 41.6% respectively. This represents that the study sample has larger proportion of female participants.

Year of Study:

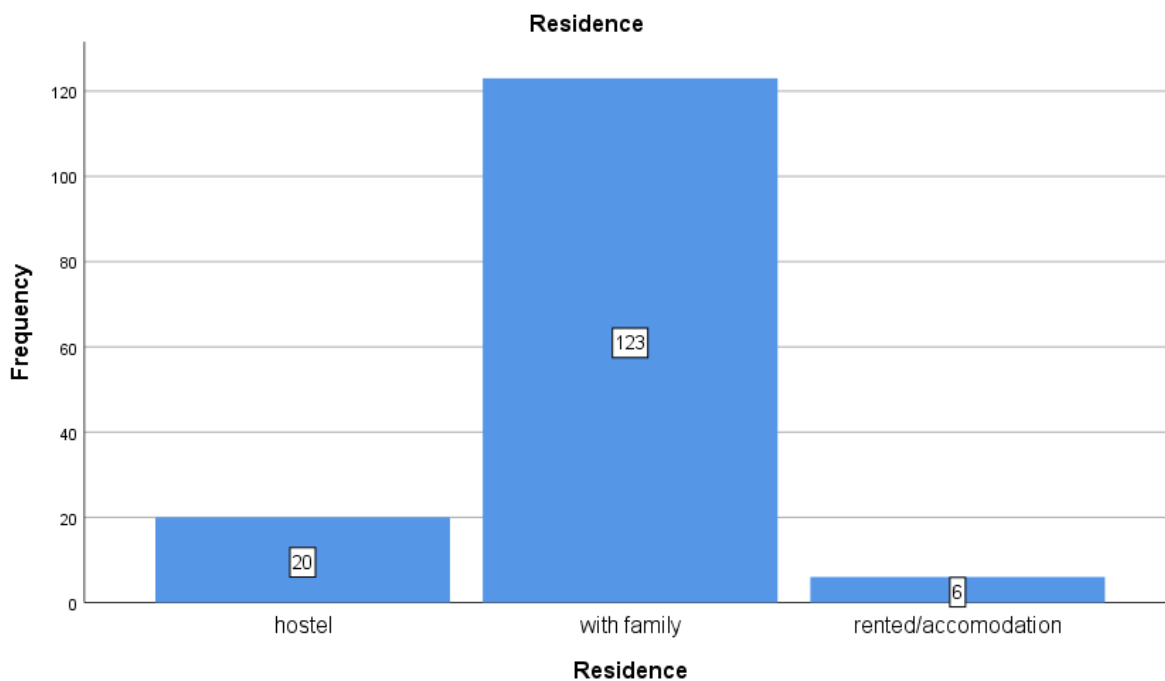
Year of study	Frequency	Percent
1st yr	33	22.1
2nd yr	38	25.5
3rd yr	22	14.8
4th yr or above	56	37.6
Total	149	100.0



Students from all academic years took part in the study and 4th year and above formed the largest group with 37.6% and 3rd year group forms the least represented group with 14.8%. This indicates that all the academic years were represented, though the sample population leaned more towards the higher year students.

Residence:

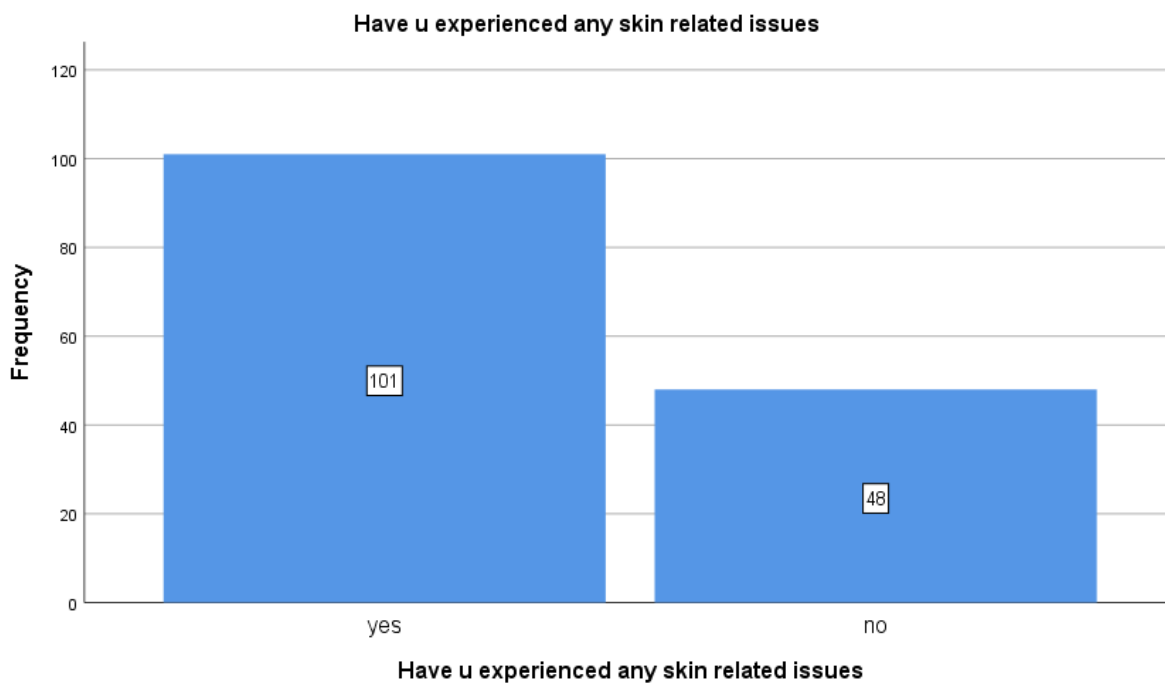
Residence	Frequency	Percent
hostel	20	13.4
with family	123	82.6
rented/ Accommodation	6	4
Total	149	100



It is shown that about 82.6% students lived with their families, although least proportion of students live in hostels or in a rented accommodation. This might influence lifestyle factors which are relevant to the skin health.

Prevalence of skin issues:

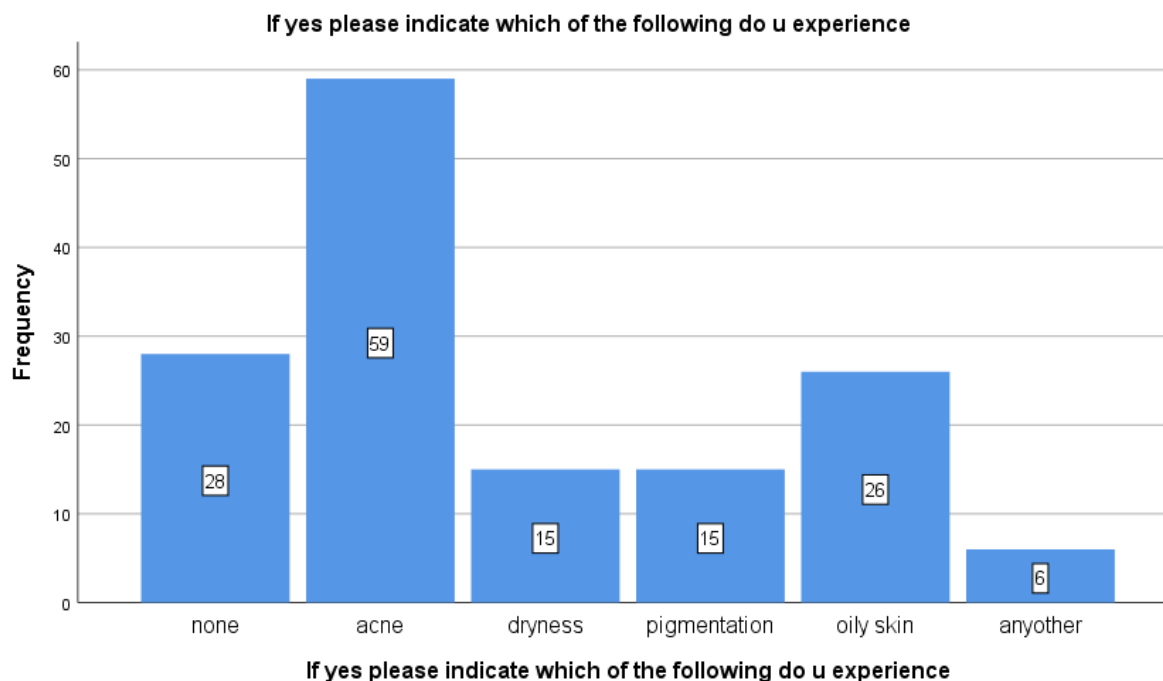
Have u experienced any skin related issues	Frequency	Percent
yes	101	67.8
no	48	32.2
Total	149	100.0



It is reported that about 67.8% of students experience some form of skin issue, while 32.2% did not report any concerns. This shows that skin-related issues are relatively very common among the study population.

Types of skin issues experienced:

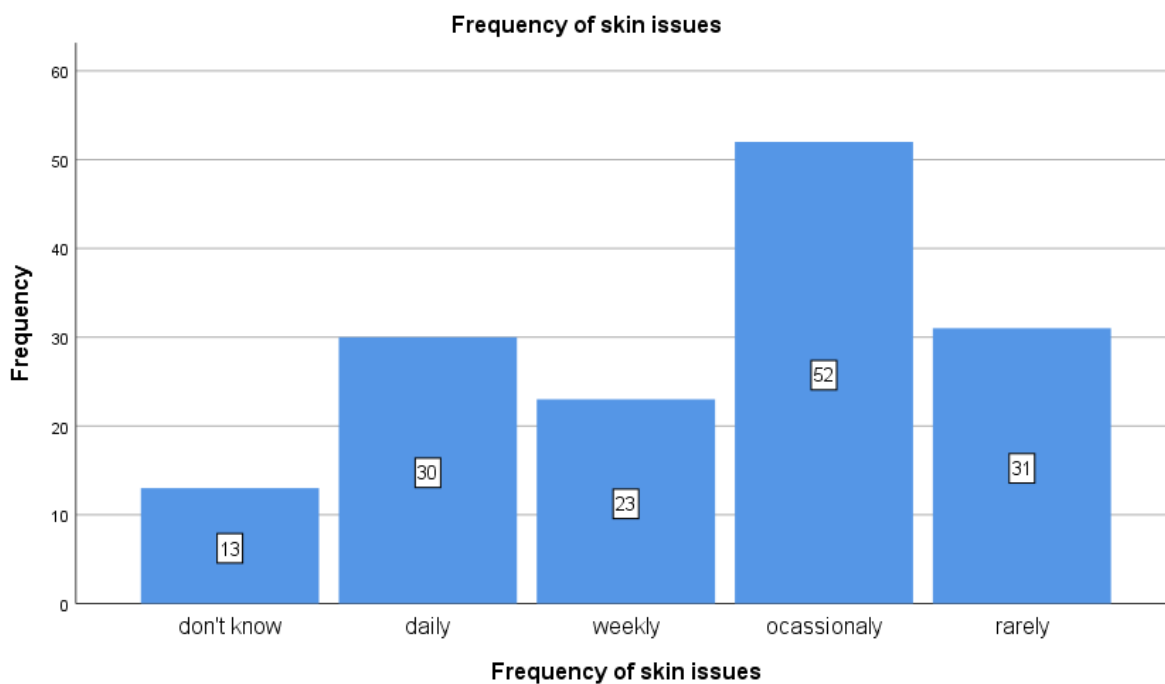
If yes please indicate which of the following do u experience	Frequency	Percent
none	28	18.8
acne	59	39.6
dryness	15	10.1
pigmentation	15	10.1
oily skin	26	17.4
anyother	6	4.0
Total	149	100.0



Among the skin issues, acne was the most common skin issue with 39.6%, followed by oily skin with 17.4%, dryness and pigmentation with 10.1%. About 4% of students reported other skin issues like tinea versicolour, fungal infections, vitiligo, scabies, eczema and other skin infections. While 18.8% of students had no specific skin issue. This bar graph shows that acne and oily skin are the predominant issues within the study population.

Frequency of skin issues:

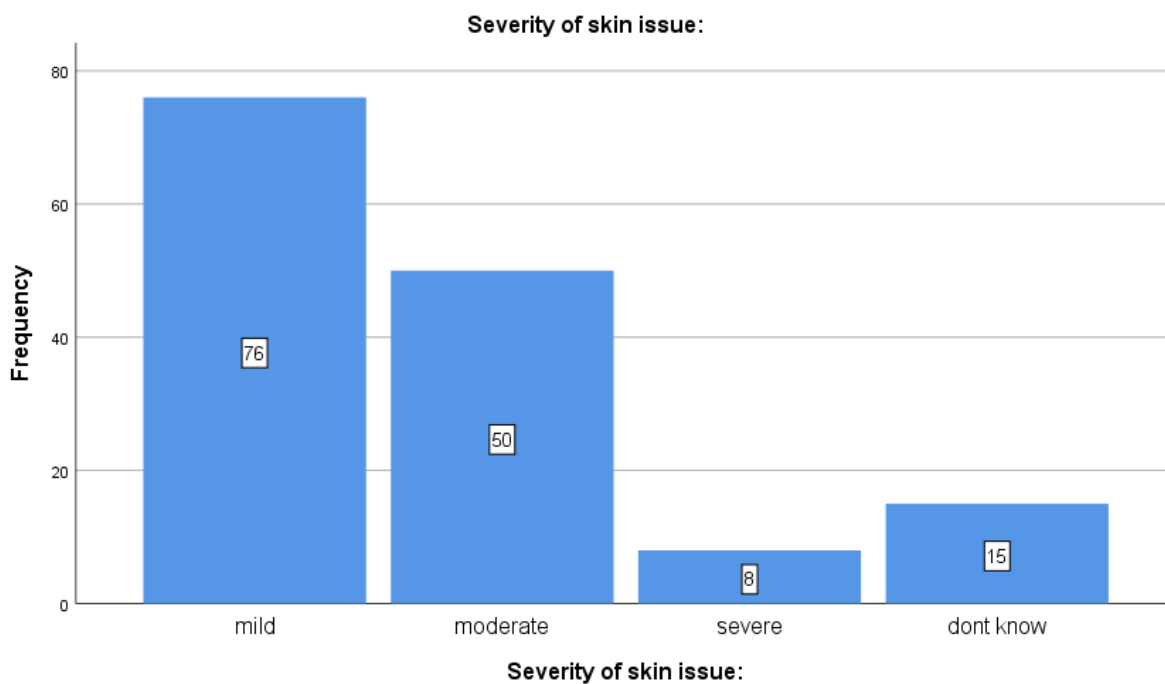
Frequency of skin issues	Frequency	Percent
don't know	13	8.7
daily	30	20.1
weekly	23	15.4
ocassionaly	52	34.9
rarely	31	20.8
Total	149	100.0



Most of the participants experienced skin issues occasionally of about 34.9% and only 20.1% experience the issues daily. This highlights variation in both the frequency and the intensity of skin issues among the study population.

Severity of skin issues:

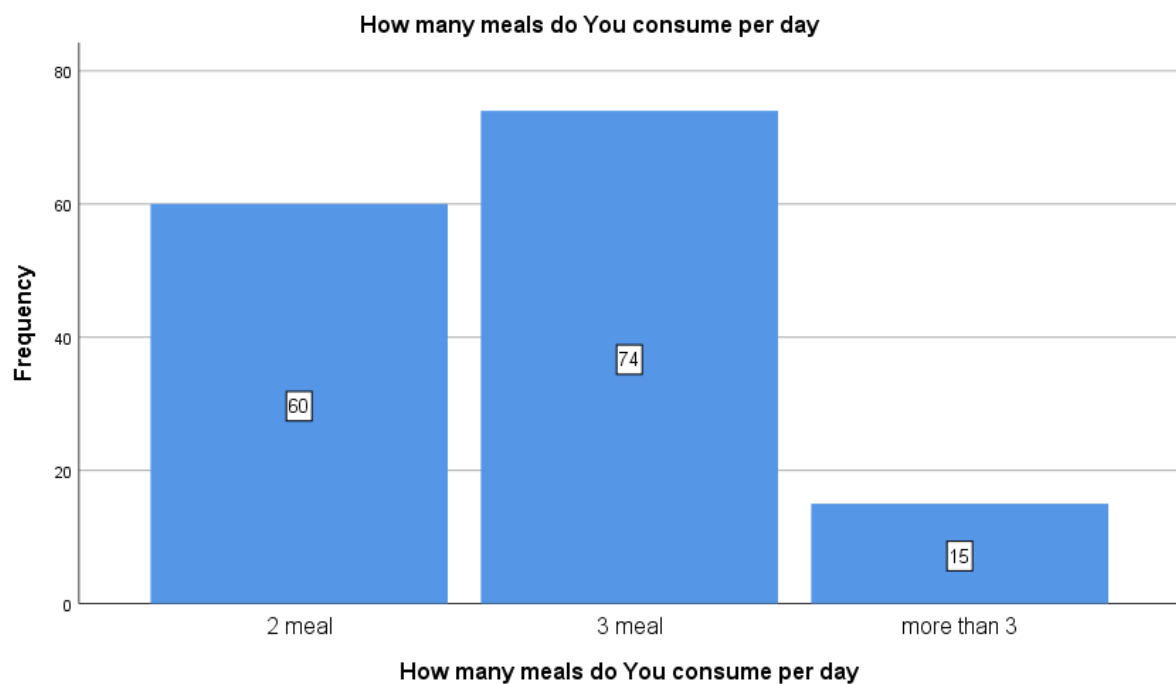
Severity of skin issue:	Frequency	Percent
mild	76	51.0
moderate	50	33.6
severe	8	5.4
dont know	15	10.1
Total	149	100.0



About half of the population had mild skin issues, while 33.6% reported moderate severity. Only small proportion of about 5.6% experienced severe symptoms. Altogether, majority of the students generally considered their skin concerns as manageable rather than severe.

Daily Meal consumption:

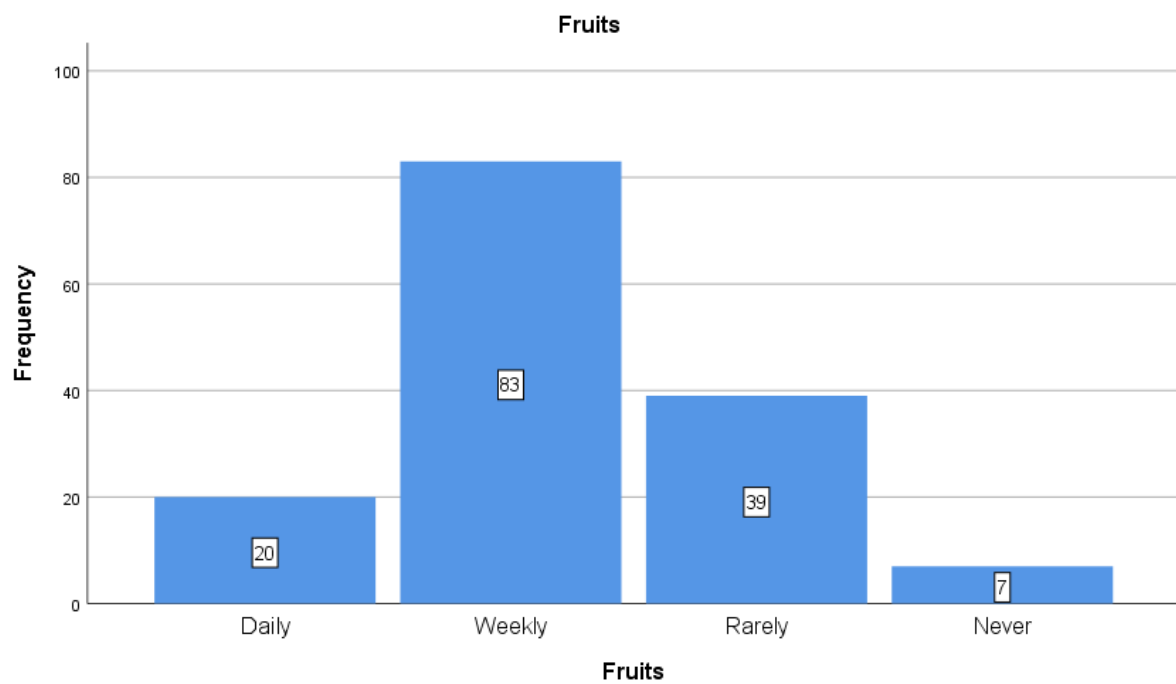
How many meals do You consume per day	Frequency	Percent
2 meal	60	40.3
3 meal	74	49.7
more than 3	15	10.1
Total	149	100



Nearly 49.7% of the students consumed three meals per day, while the rest 40.3% consumed only 2 meals. This suggests irregular or reduced meal frequency could affect skin health. Only 10.1% students had more than three meals a day. Overall, majority of the participants followed a typical three-meal routine.

Intake of Fruits:

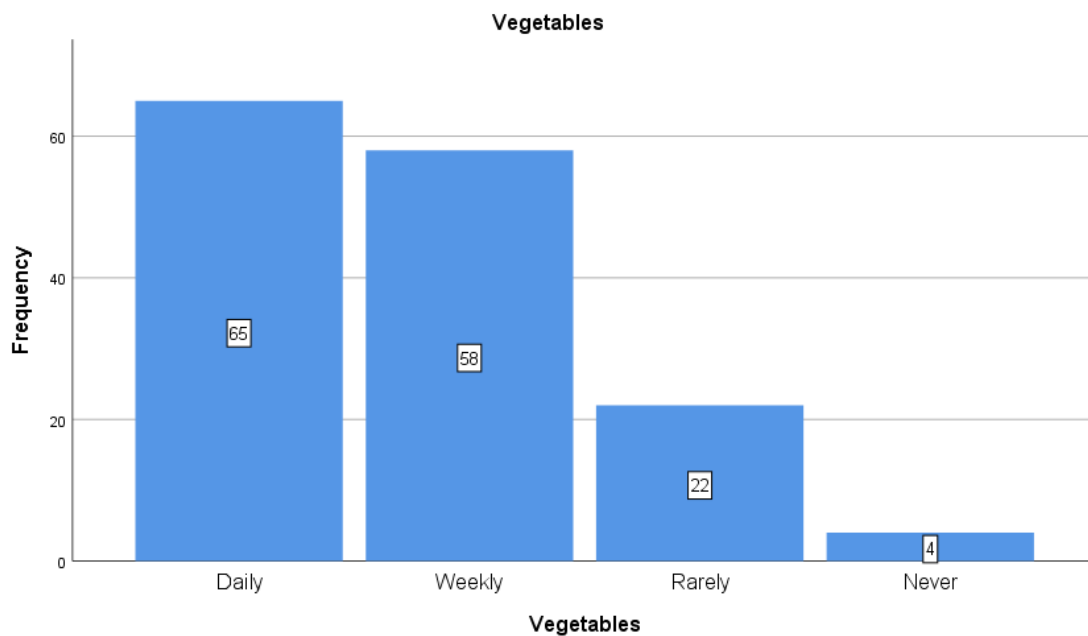
Fruits	Frequency	Percent
Daily	20	13.4
Weekly	83	55.7
Rarely	39	26.2
Never	7	4.7
Total	149	100.0



The above graph represents that almost 55.7% of the students consumed fruits weekly and 13.4% daily. The results show that most of the participants consume inadequate amount of fruits on a regular basis.

Intake of Vegetables:

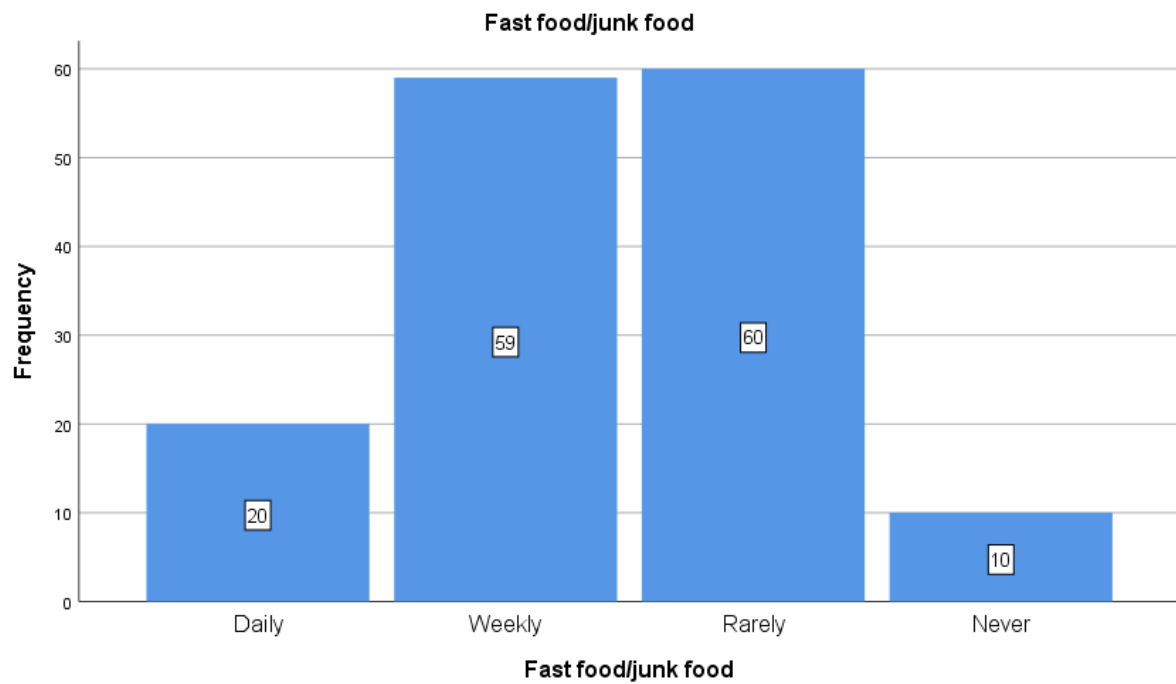
Vegetables	Frequency	Percent
Daily	65	43.6
Weekly	58	38.9
Rarely	22	14.8
Never	4	2.7
Total	149	100.0



The intake of vegetables was comparatively better than fruits as about 43.6% of the participants consume vegetables daily and 38.9% weekly indicating that nearly half of the students include vegetables in their diet, but still a few of them has inadequate consumption.

Fast food / junk food consumption:

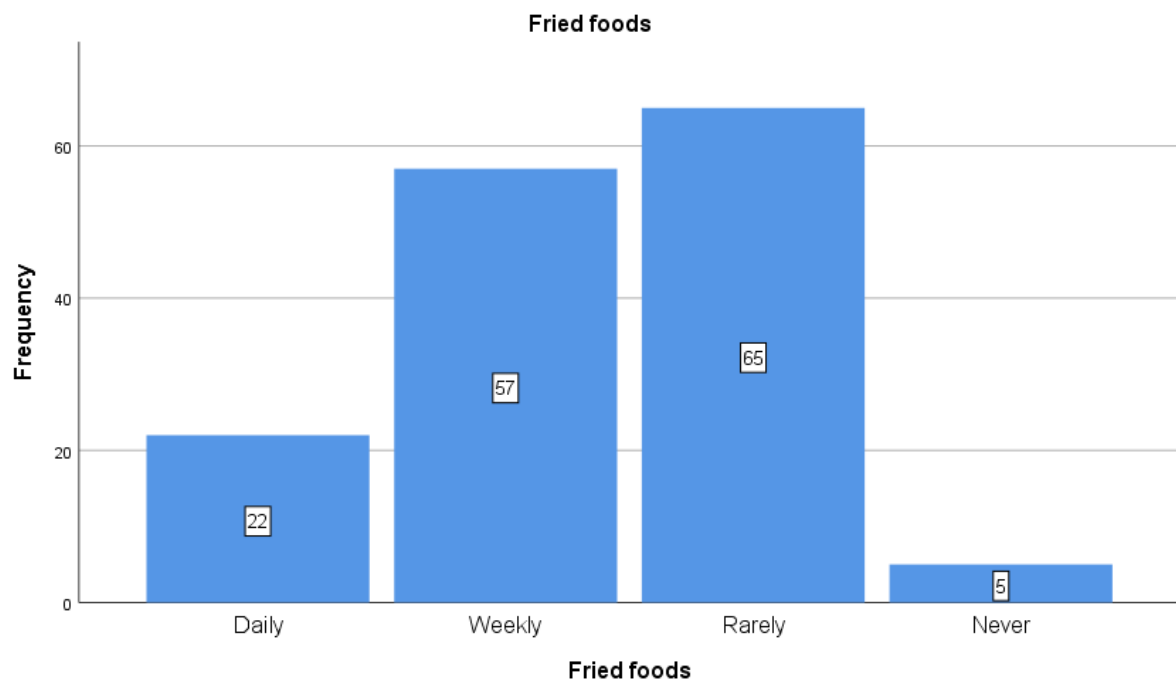
Fast food/junk food	Frequency	Percent
Daily	20	13.4
Weekly	59	39.6
Rarely	60	40.3
Never	10	6.7
Total	149	100



A substantial proportion consumed fast food weekly or daily i.e; 39.6% or 13.4% respectively. This may effect the skin issues mostly acne in sensitive individuals. About 40.3% individuals consume fast food rarely.

Fried food intake:

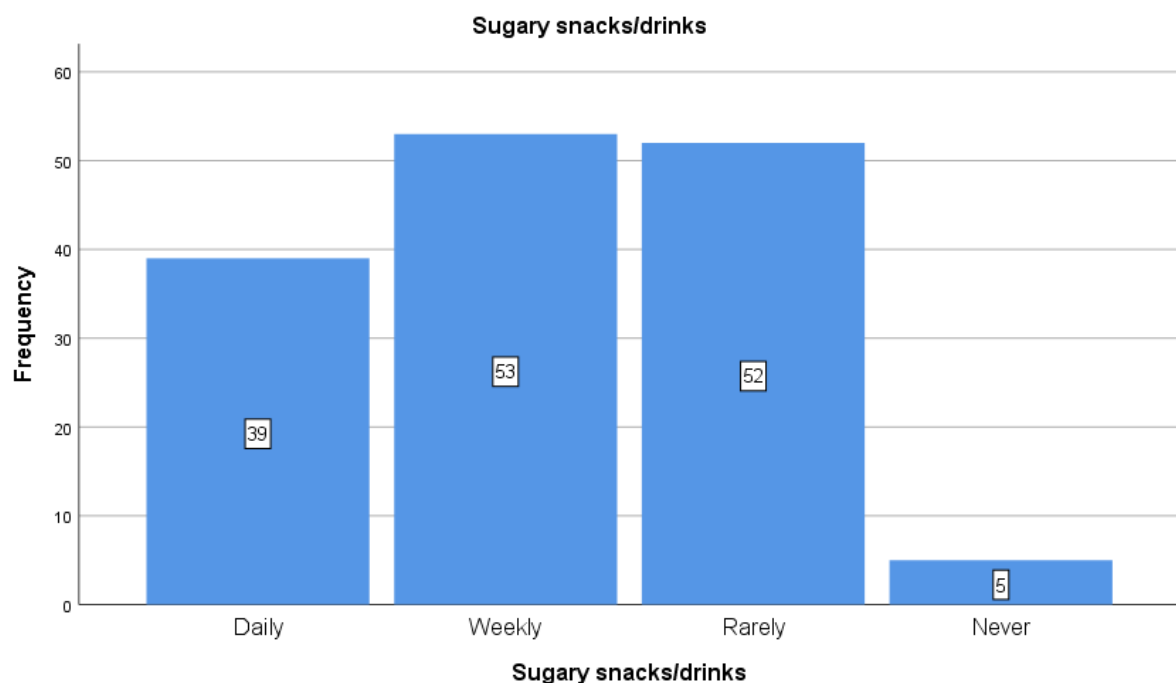
Fried foods	Frequency	Percent
Daily	22	14.8
Weekly	57	38.3
Rarely	65	43.6
Never	5	3.4
Total	149	100.0



Fried food intake is moderate with 43.6% consuming it rarely and 38.3% having it weekly. However, about 14.8% of students reported daily consumption of fried food which may aggravate skin issues. Only 3.4% of the students completely avoided consuming fried foods.

Intake of sugary snacks / drinks:

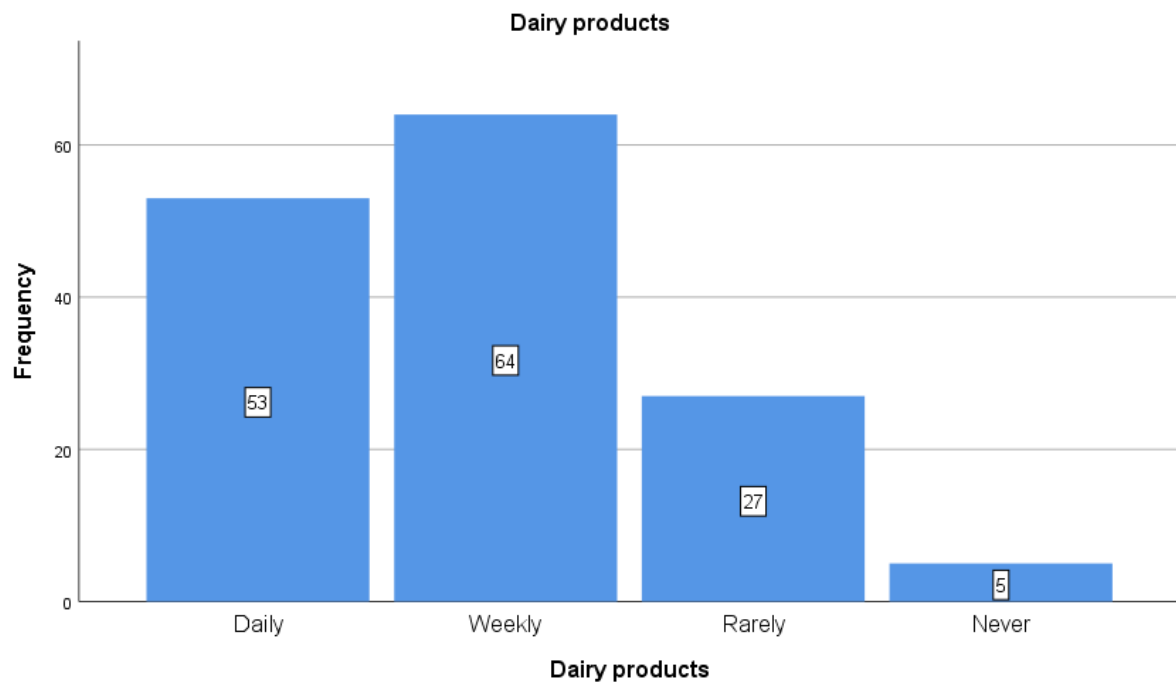
Sugary snacks/drinks	Frequency	Percent
Daily	39	26.2
Weekly	53	35.6
Rarely	52	34.9
Never	5	3.4
Total	149	100



26.2% of the participants consumed sugary items daily and 35.6% weekly. Many students consumed sugary snacks frequently but just 34.9% reported having it rarely and only 3.4% completely avoided. This indicates that intake of sugary snacks or drinks is very common among this age group.

Intake of dairy products:

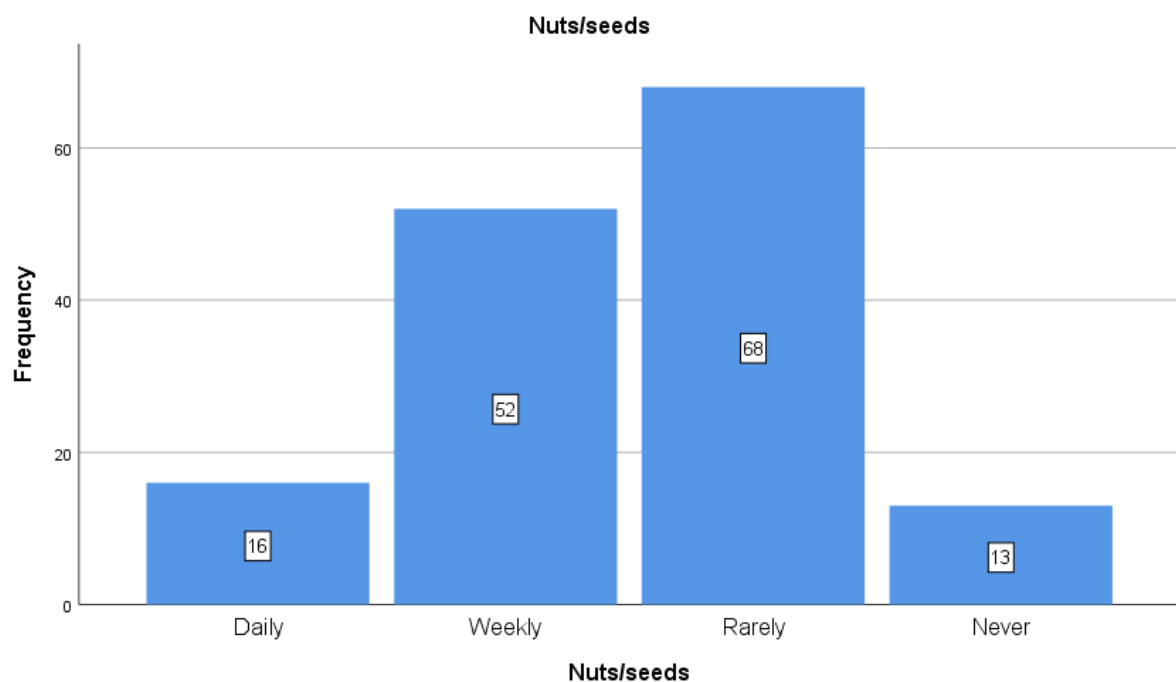
Dairy products	Frequency	Percent
Daily	53	35.6
Weekly	64	43
Rarely	27	18.1
Never	5	3.4
Total	149	100



There was 43% of weekly and 35.6% daily dairy consumption. Majority of students reported a regular intake of dairy products, but a smaller proportion consumed it rarely while 3.4% participants never included it in their diet.

Nuts / seeds**intake:**

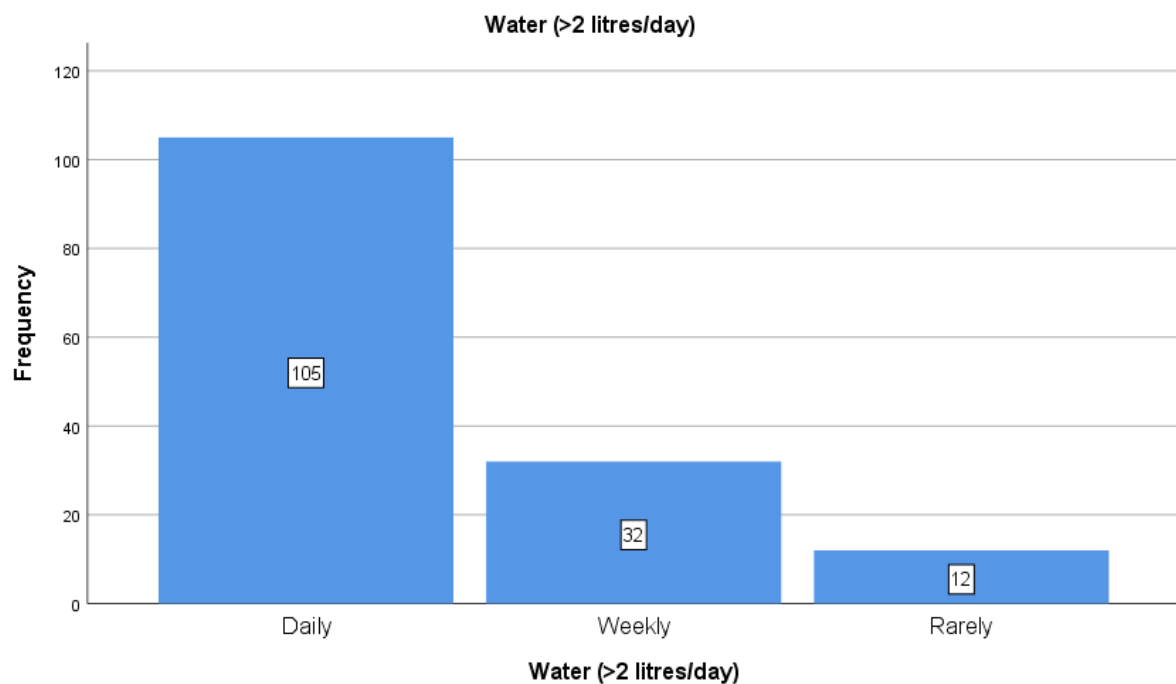
Nuts/seeds	Frequency	Percent
Daily	16	10.7
Weekly	52	34.9
Rarely	68	45.6
Never	13	8.7
Total	149	100



Intake of nuts and seeds among the students of this age group is generally low. Only about 10.7% of students have it daily whereas almost 45.6% students have it rarely. Moreover, about 8.7% of students never consume it. As nuts and seeds are rich in fats, vitamins and minerals, many students may be losing its nutritional benefits.

Water intake:

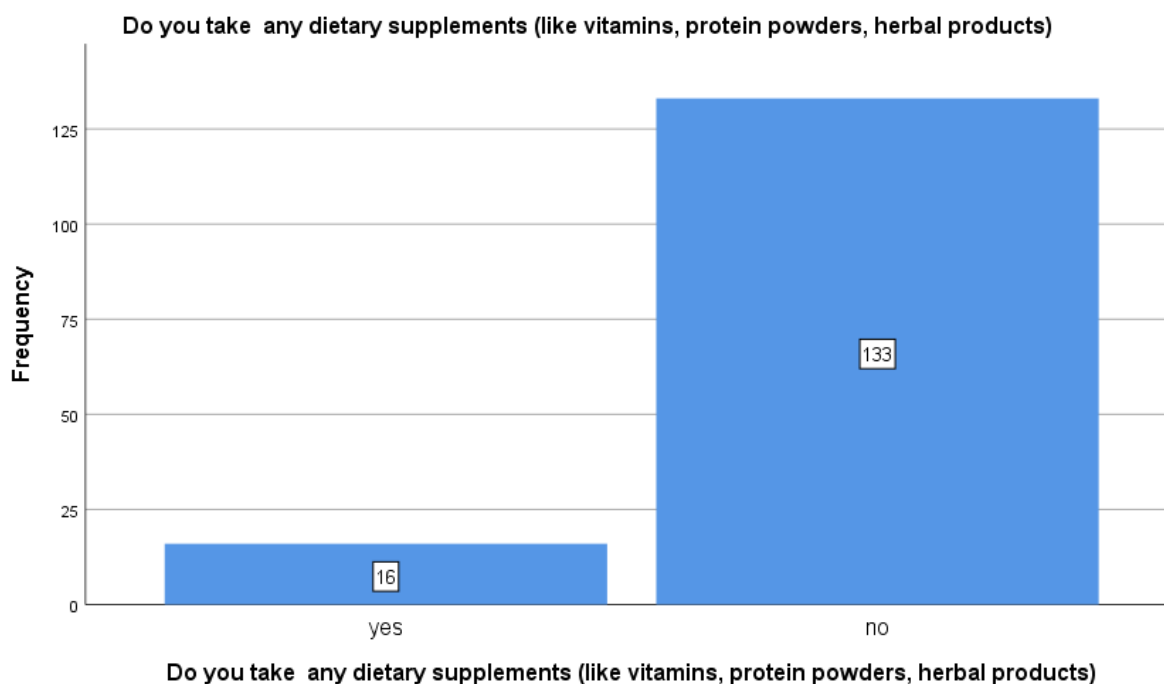
Water (>2 litres/day)	Frequency	Percent
Daily	105	70.5
Weekly	32	21.5
Rarely	12	8.1
Total	149	100.0



Adequate amount of water intake is necessary for skin hydration and overall health. A high portion of about 70.5% participants have more than 2 litres of water daily. Rest 21.5% and 8.1% have it weekly and rarely which might affect their skin health.

Use of dietary supplements:

Do you take any dietary supplements (like vitamins, protein powders, herbal products)	Frequency	Percent
Yes	16	10.7
No	133	89.3
Total	149	100.0



Majority of the participants, about 89.3% avoid having dietary supplements and probably rely on regular diet for nutrition. The rest 10.7% use other supplements such as calcium, folic acid, multivitamins, omega-3, surbex Z, evion and protein powders like herbalife nutrition. This suggests that use of supplements is somewhat uncommon in the study population.

Relation between diet and skin:

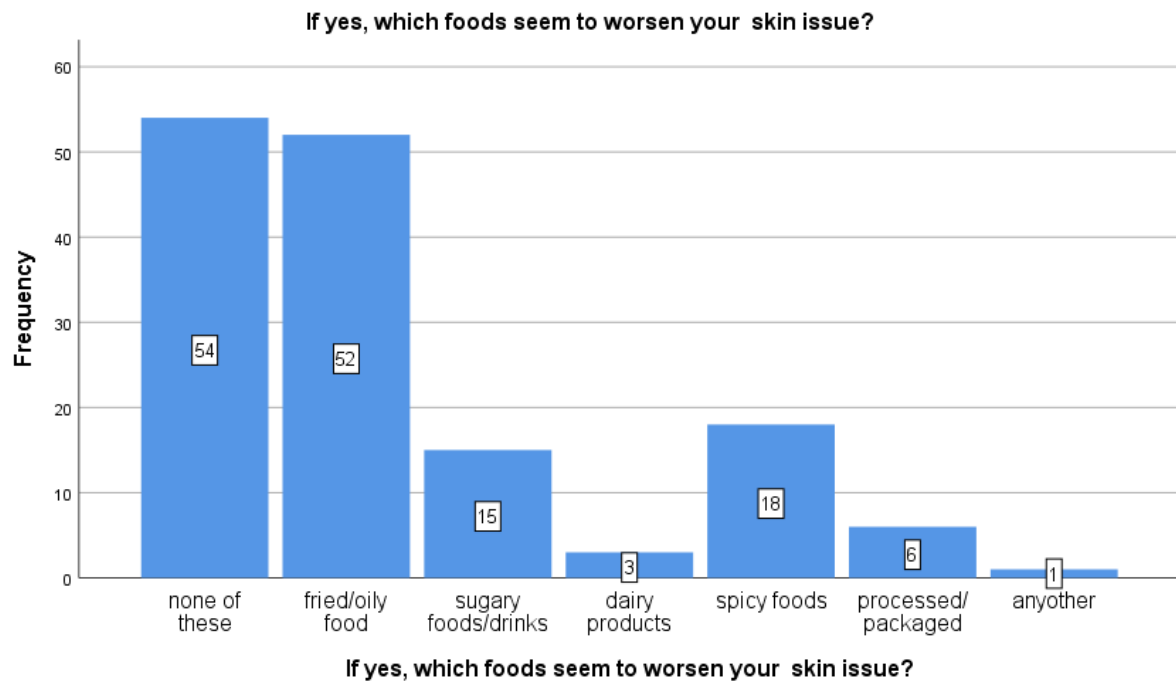
Have you ever noticed a link between your diet and your skin condition ?	Frequency	Percent
yes	55	36.9
no	37	24.8
Not sure	57	38.3
Total	149	100.0



About 36.9% of participants observed a link between their diet and their skin health, while 24.8% did not observe any connection. Majority of them were unsure about it, which indicates less awareness about how the diet influences the skin health.

Foods that worsen the skin issue:

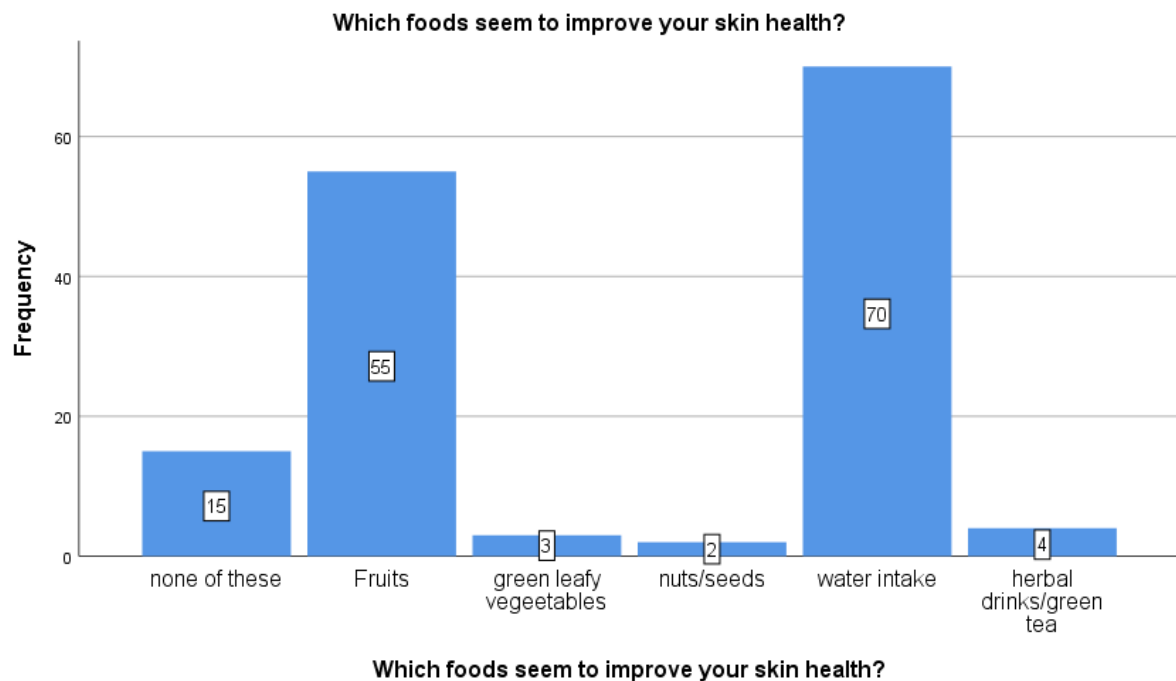
If yes, which foods seem to worsen your skin issue?	Frequency	Percent
none of these	54	36.2
fried/oily food	52	34.9
sugary foods/drinks	15	10.1
dairy products	3	2.0
spicy foods	18	12.1
processed/ packaged	6	4.0
anyother	1	0.7
Total	149	100.0



Fried / oily food and spicy food with 34.9% and 12.1% respectively were most commonly reported to worsen the skin issues. Only a small proportion of dairy foods, of about 2% and processed food of about 4% contributed to aggravate the skin issues. This suggests that diet affects each individual's skin differently, there is no common food that effect everyone.

Foods that improve the skin issue:

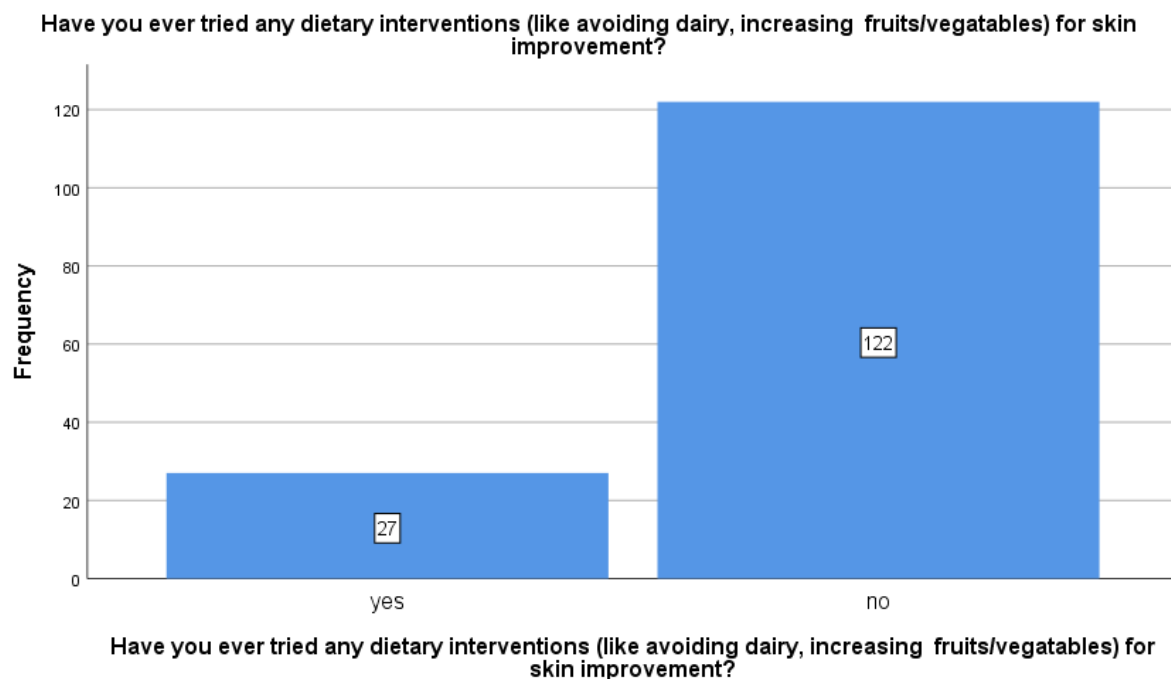
Which foods seem to improve your skin health?	Frequency	Percent
none of these	15	10.1
Fruits	55	36.9
green leafy vegetables	3	2
nuts/seeds	2	1.3
water intake	70	47
herbal drinks/green tea	4	2.7
Total	149	100



About 47% students reported that increased water intake can contribute in improving the skin health, as it is essential for skin hydration which in turn makes the skin clearer and healthier. The second most common food group which tends to improve the skin is shown as fruits with 36.9% as they are rich in antioxidants and vitamins. Hardly a few students observed improvements from green leafy vegetables, nuts/seeds or herbal drinks with 2%, 1.3% or 2.7% respectively. Overall it suggests that fruits and adequate water intake is the most effective for skin health.

Dietary interventions for skin:

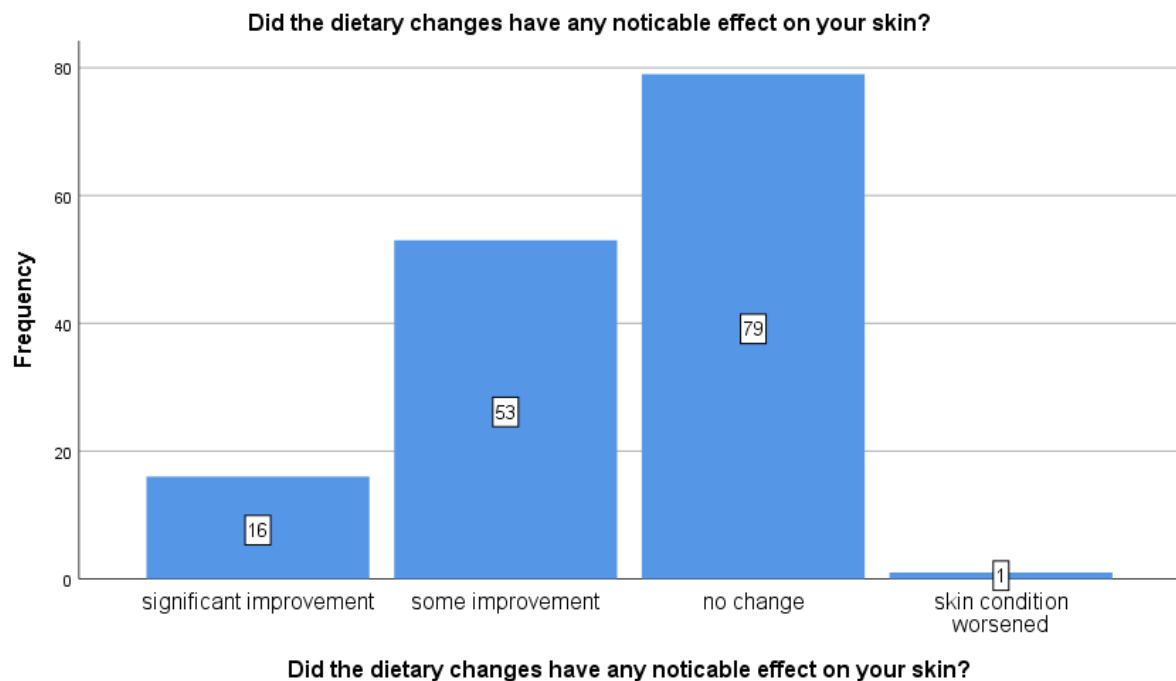
Have you ever tried any dietary interventions (like avoiding dairy, increasing fruits/vegetables) for skin improvement?	Frequency	Percent
yes	27	18.1
no	122	81.9
Total	149	100.0



Only 18.1% of the participants tried dietary interventions like increasing the water intake, fruits intake, some tried avoiding fried and packaged food for improving their skin health. The rest 81.9% students had never attempted any dietary changes. This shows an educational gap about how the nutrition strategies can influence skin conditions.

Effect of dietary interventions:

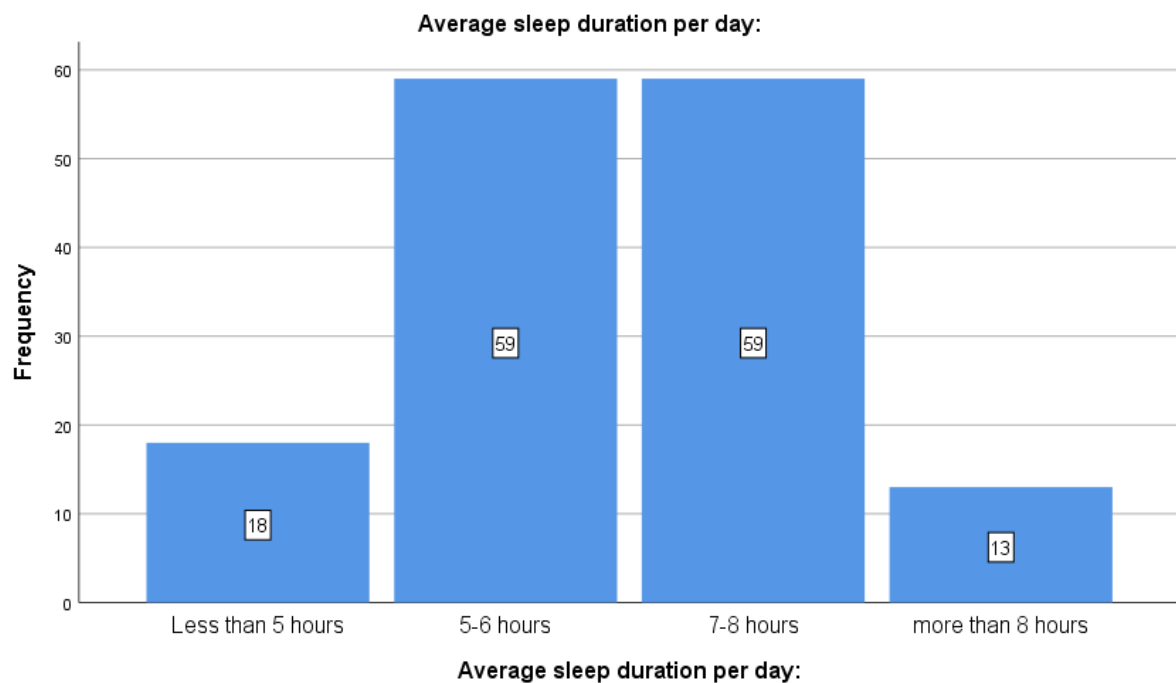
Did the dietary changes have any noticeable effect on your skin?	Frequency	Percent
significant improvement	16	10.7
some improvement	53	35.6
no change	79	53
skin condition worsened	1	0.7
Total	149	100



Among the participants who tried some dietary interventions, 46.3% noticed some improvement, about 10.7% noticed significant improvement and about 35.6% reported mild improvement. This suggests that dietary interventions may not have the same effect on every individual.

Average Sleep duration:

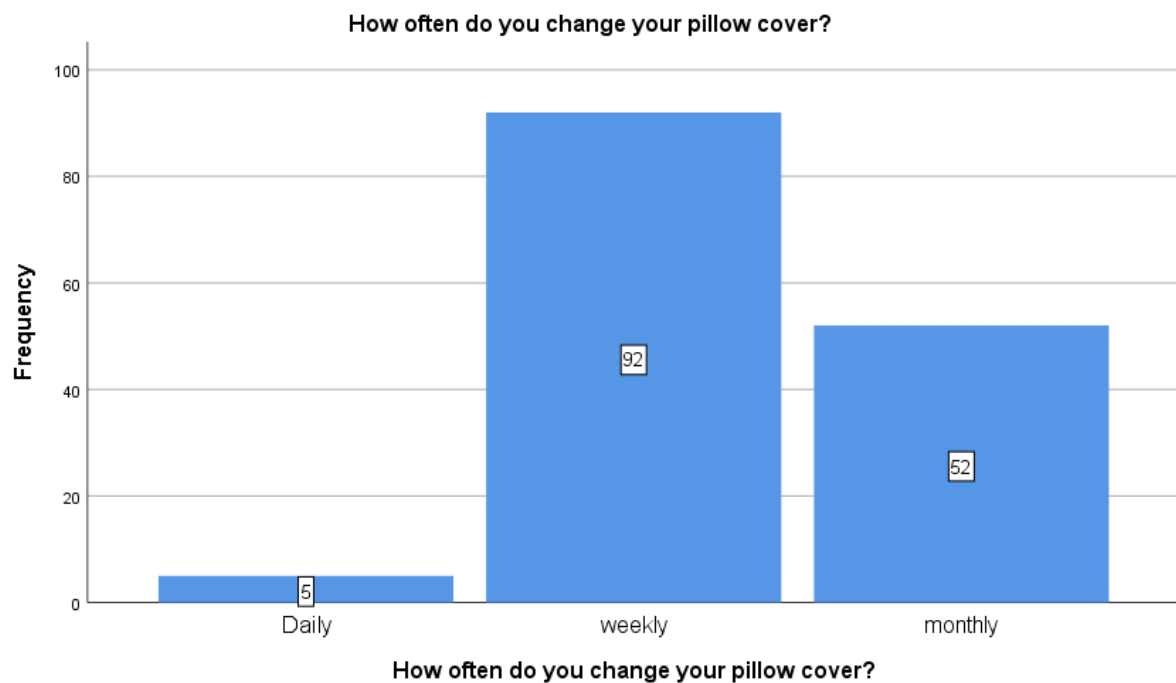
Average sleep duration per day:	Frequency	Percent
Less than 5 hours	18	12.1
5-6 hours	59	39.6
7-8 hours	59	39.6
more than 8 hours	13	8.7
Total	149	100.0



Majority of the participants reported sleeping 5-6 hours or 7-8 hours that is about 39.6% is the moderate sleep range. About 12.1% of the participants slept less than 5 hours, which may contribute to skin-related concerns. The most uncommon group among the study population is 8.7% of the participants who slept more than 8 hours.

Pillow cover changing habit:

How often do you change your pillow cover?	Frequency	Percent
Daily	5	3.4
weekly	92	61.7
monthly	52	34.9
Total	149	100.0



Most of the students, 61.7% change their pillow covers weekly while about 34.9% change it monthly. This may increase exposure to dirt, oil and bacteria which may possibly aggravate skin conditions. Only about 3.4% students change their pillow covers daily, suggesting good hygiene practices.

Stress level:

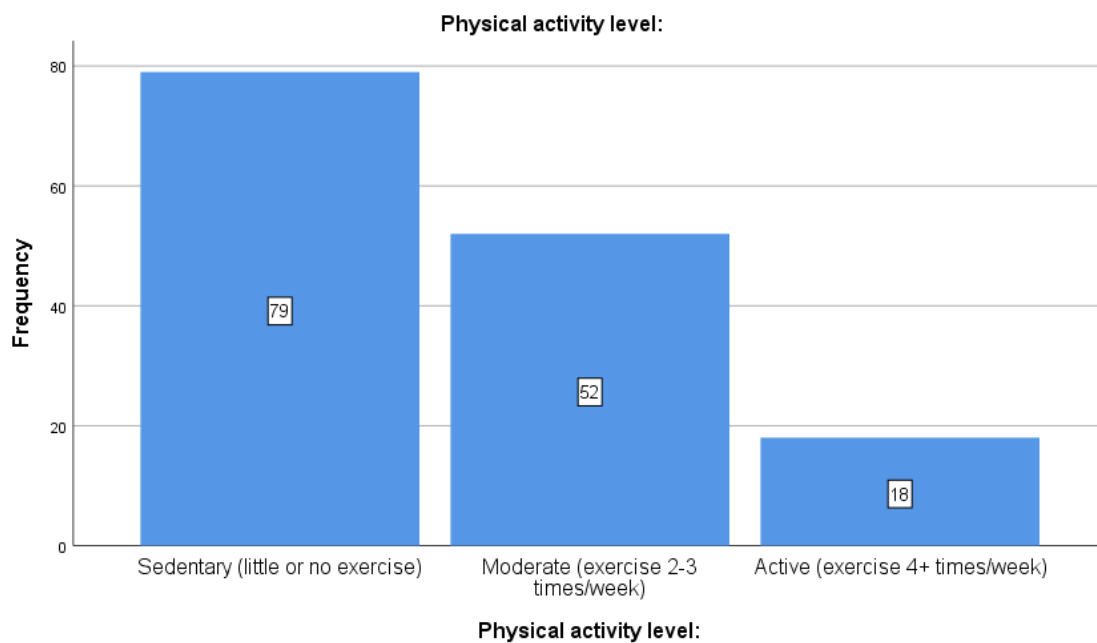
Stress level:	Frequency	Percent
low	23	15.4
moderate	83	55.7
high	43	28.9
Total	149	100



About 55.7% reported to have moderate stress which indicates that stress is a common concern in this group. Nearly 29% experience high stress levels which may worsen the skin issues, as stress is a common trigger for acne and other skin conditions. Only about 15.4% experienced low stress levels.

Physical activity level:

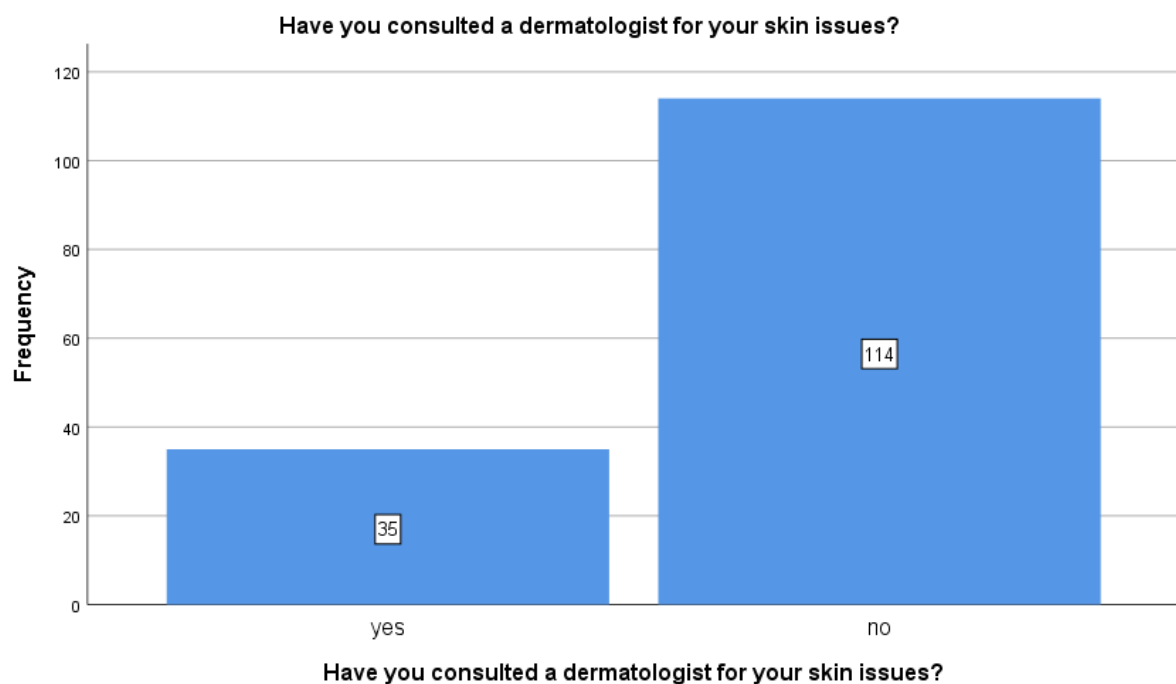
Physical activity level:	Frequency	Percent
Sedentary (little or no exercise)	79	53.0
Moderate (exercise 2-3 times/week)	52	34.9
Active (exercise 4+ times/week)	18	12.1
Total	149	100.0



Over half of the students had a sedentary lifestyle, indicating low physical activity level among the sample population. About 39.9% students had a moderate lifestyle, while 12.1% were active which means, exercising four or more times in a week.

Dermatologist consultation:

Have you consulted a dermatologist for your skin issues?	Frequency	Percent
yes	35	23.5
no	114	76.5
Total	149	100



Only 23.5% students followed dermatologist advice and the rest 76.5% had never consulted a medical professional, indicating that most of the students depend on home remedies or self-care, despite of high prevalence of skin issues.

Dietary recommendations by the dermatologist:

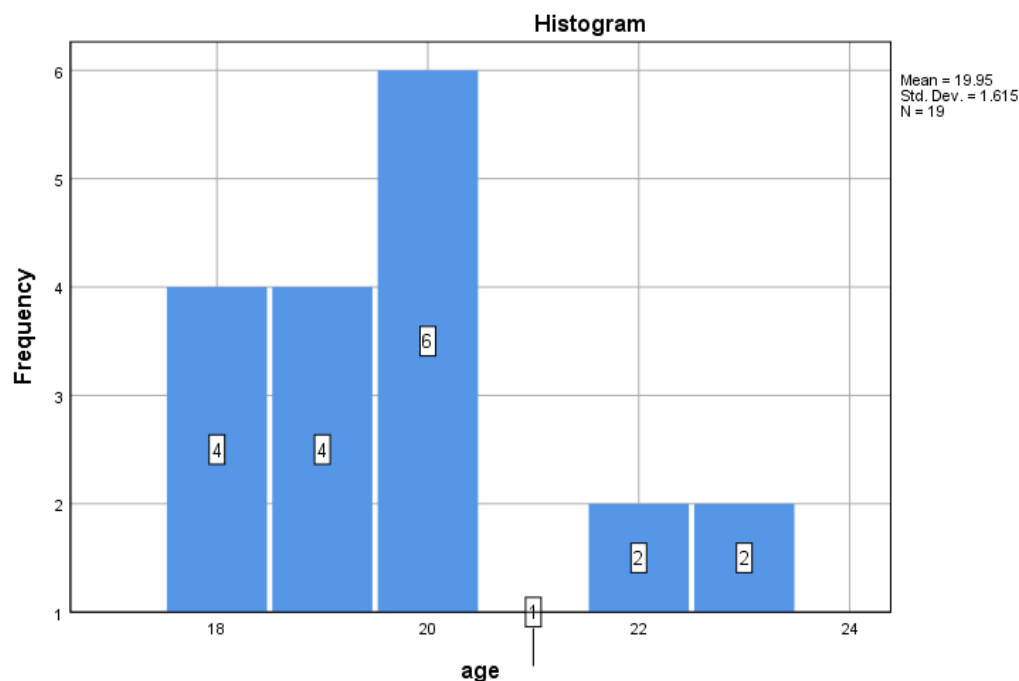
If yes, did they recommend any dietary changes along with treatment?	Frequency	Percent
yes	20	13.4
no	129	86.6
Total	149	100.0



Only about 13.4% of participants received certain dietary recommendations from their dermatologist, as in the sample population less number of students consulted a dermatologist. This shows a gap between dermatological care and nutritional guidance.

Age group of participants in the intervention phase:

age	Frequency	Percent
18	4	21.1
19	4	21.1
20	6	31.6
21	1	5.3
22	2	10.5
23	2	10.5
Total	19	100



In the intervention group, about 31.6% of participants were 20 years old followed by participants aged 18 and 19 years (21.1% each). Small proportion of individuals were 21, 22 and 23 years of age. This suggests that the intervention sample consists of younger age group.

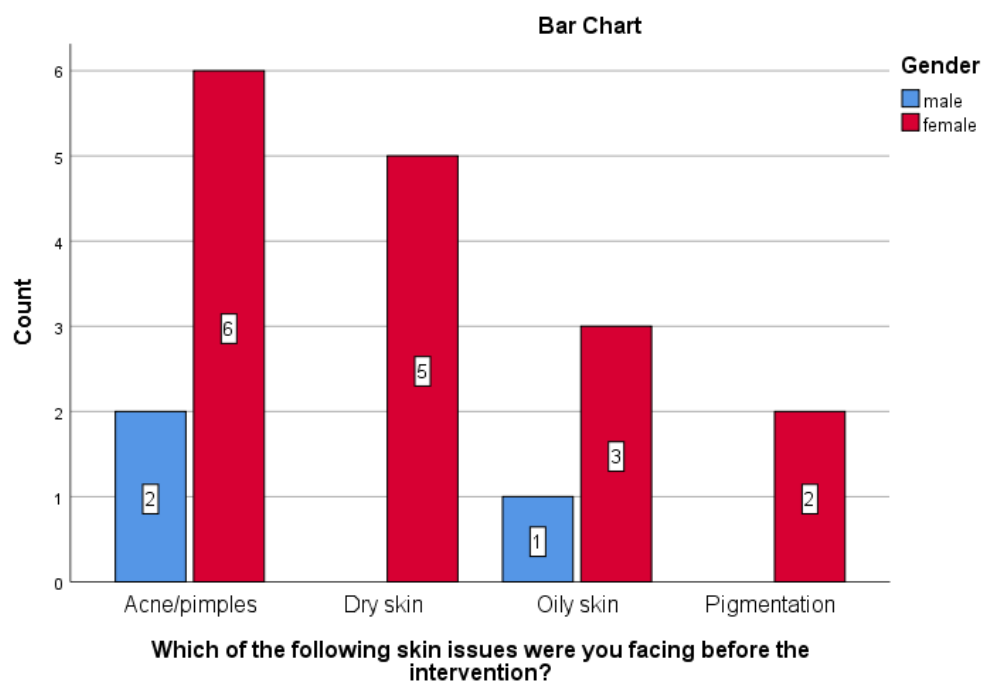
Skin issues experienced before the intervention:

Which of the following skin issues were you facing before the intervention?	Gender		Total
	male	female	
Acne/pimples	2	6	8
Dry skin	0	5	5
Oily skin	1	3	4
Pigmentation	0	2	2
Total	3	16	19

 $\chi^2=2.078a$

df-3

p-.556



Before the intervention, the most commonly occurring skin issue was acne, affecting 8 students in the intervention group. There are 5 cases of skin dryness and 4 cases of skin oiliness. All these were more notable by the females compared to the males. Only 2 students experienced pigmentation. This is done by performing the Chi-square test.

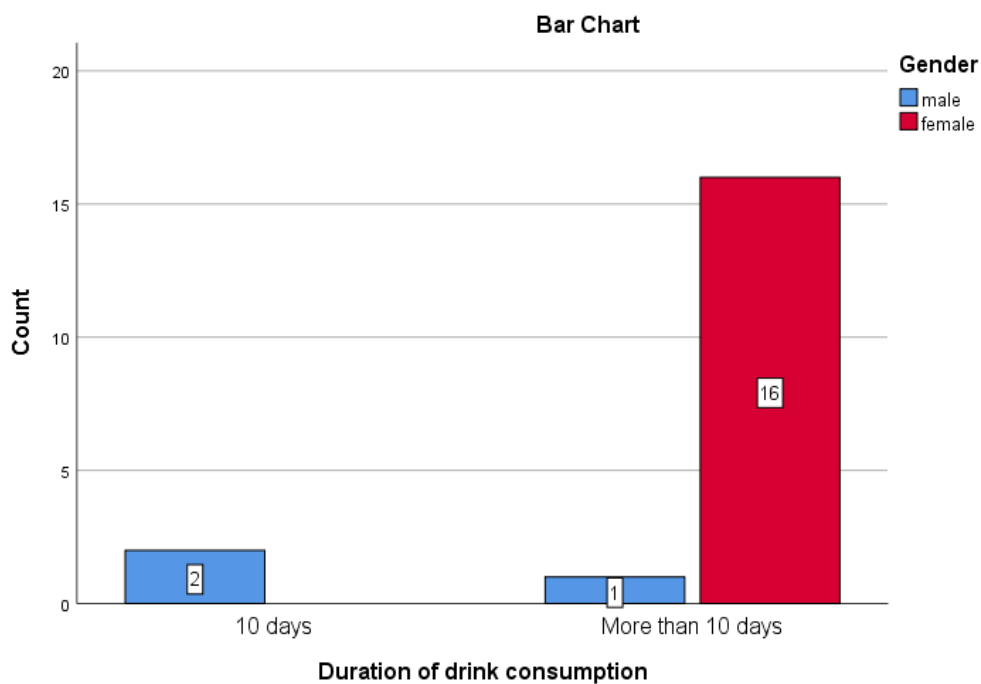
Duration of drink consumption:

Duration of drink consumption	Gender		Total
	male	female	
10 days	2	0	2
More than 10 days	1	16	17
Total	3	16	19

 $\chi^2=11.922^a$

df-1

p-.001



About 17 participants consumed the drink for more than 10 days with majority being females. Only 2 male participants consumed it for 10 days. This shows that this intervention was adopted mostly by the females. This variation was statistically significant with chi-square value = 0.001.

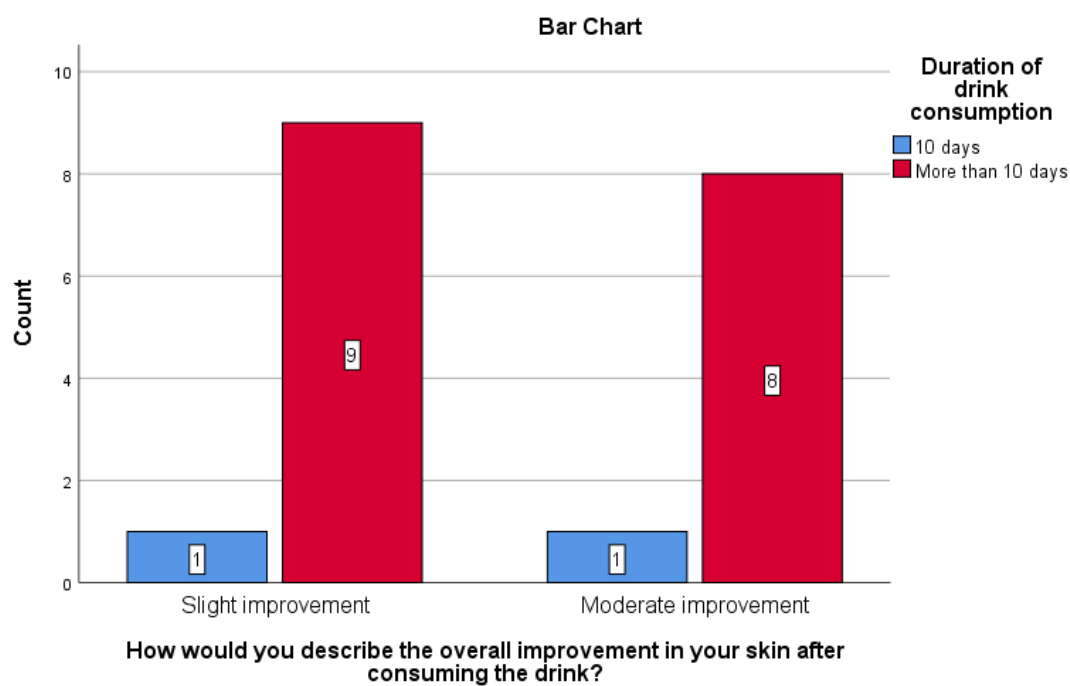
Improvement of skin issue:

How would you describe the overall improvement in your skin after consuming the drink?	Duration of drink consumption		Total
	10 days	More than 10 days	
Slight improvement	1	9	10
Moderate improvement	1	8	9
Total	2	17	19

 χ^2 -.006

df- 1

p-.937



About 9 students experienced slight improvement and 8 students reported moderate improvement. Among those students who consumed the drink for more than 10 days reported better results and who consumed it for exact 10 days experienced slight improvement. The overall data indicates that longer duration of drink consumption resulted in greater skin improvement.

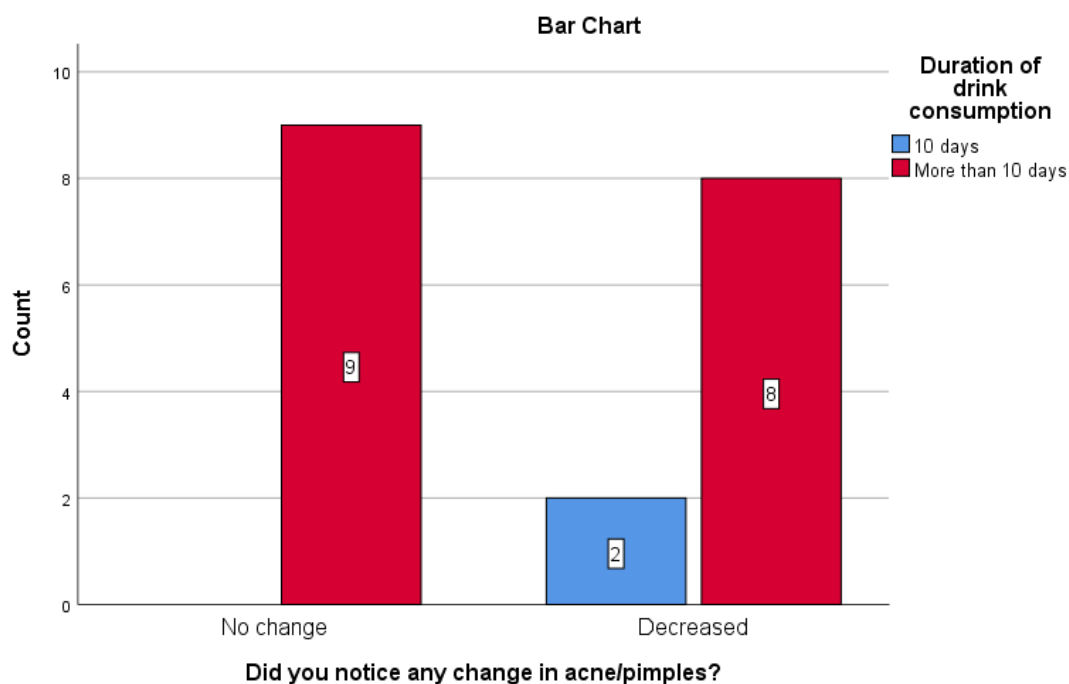
Change in acne:

Did you notice any change in acne/pimples?	Duration of drink consumption		Total
	10 days	More than 10 days	
No change	0	9	9
Decreased	2	8	10
Total	2	17	19

 $\chi^2 - 2.012^a$

df-1

p-.156



Among the study population, 9 students who consumed the drink for more than 10 days, didn't experience change in their skin issue, while 8 students experienced decrease in acne. On the other hand participants who consumed the drink for 10 days showed improvement in acne. Chi-square test value was $p = 0.156$.

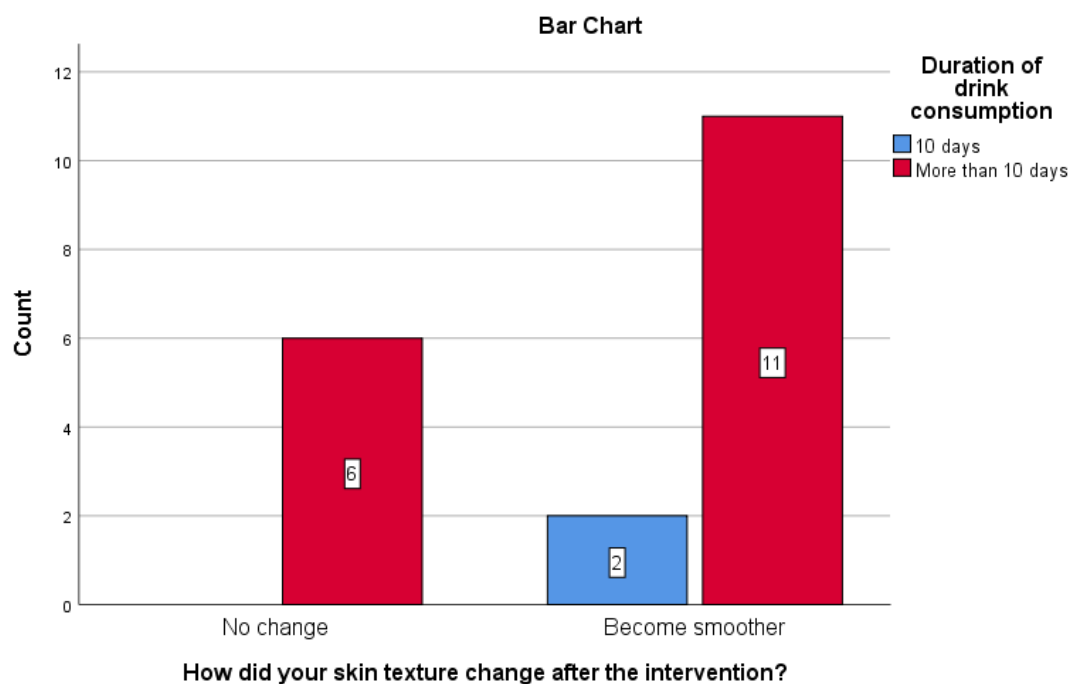
Change in the texture of skin

 χ^2 -1.032^a

df-1

p-.310

How did your skin texture change after the intervention?	Duration of drink consumption		Total
	10 days	More than 10 days	
No change	0	6	6
Become smoother	2	11	13
Total	2	17	19



Majority of the participants stated that their skin became more smooth after having the drink, this was more common in students who consumed it for more than 10 days. Only about 6 students experienced no change. Chi-square $p = 0.310$.

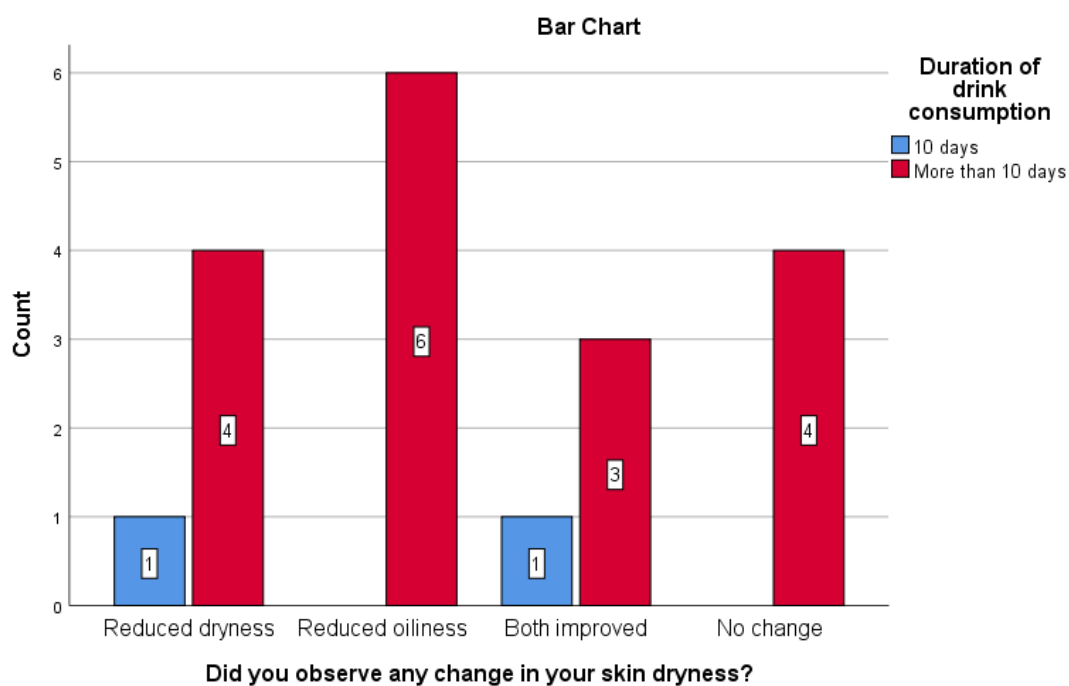
Change in skin dryness:

Did you observe any change in your skin dryness?	Duration of drink consumption		Total
	10 days	More than 10 days	
Reduced dryness	1	4	5
Reduced oiliness	0	6	6
Both improved	1	3	4
No change	0	4	4
Total	2	17	19

 $\chi^2=2.543^a$

df-3

p-.468



About 26.3% observed reduced dryness in their skin, 31.6% observed reduced oiliness and for around 21% students both the issues were improved. Most of the students observed a positive effect in their skin condition after consuming the drink for more than 10 days.

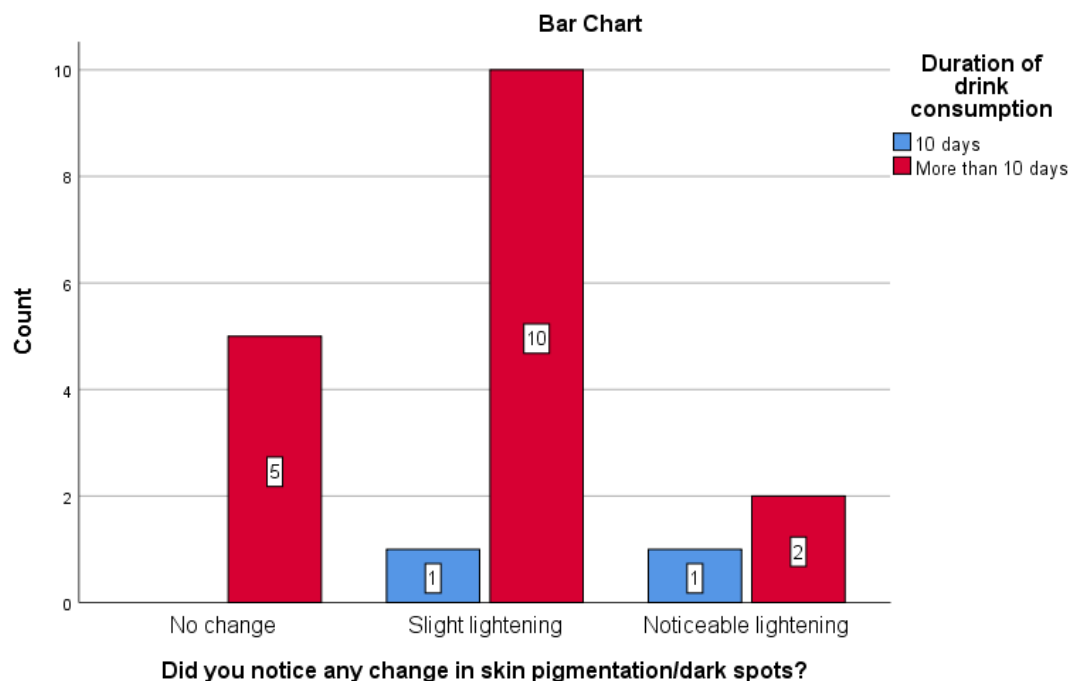
Change in skin pigmentation:

Did you notice any change in skin pigmentation/dark spots?	Duration of drink consumption		Total
	10 days	More than 10 days	
No change	0	5	5
Slight lightening	1	10	11
Noticeable lightening	1	2	3
Total	2	17	19

X²-2.269a

df- 2

p-.322



Most of the participants perceived slight brightening in their skin and a smaller proportion of participants observed a more noticeable skin lightening. The chi-square value $p = 0.322$, which shows that change in pigmentation was not statistically significant.

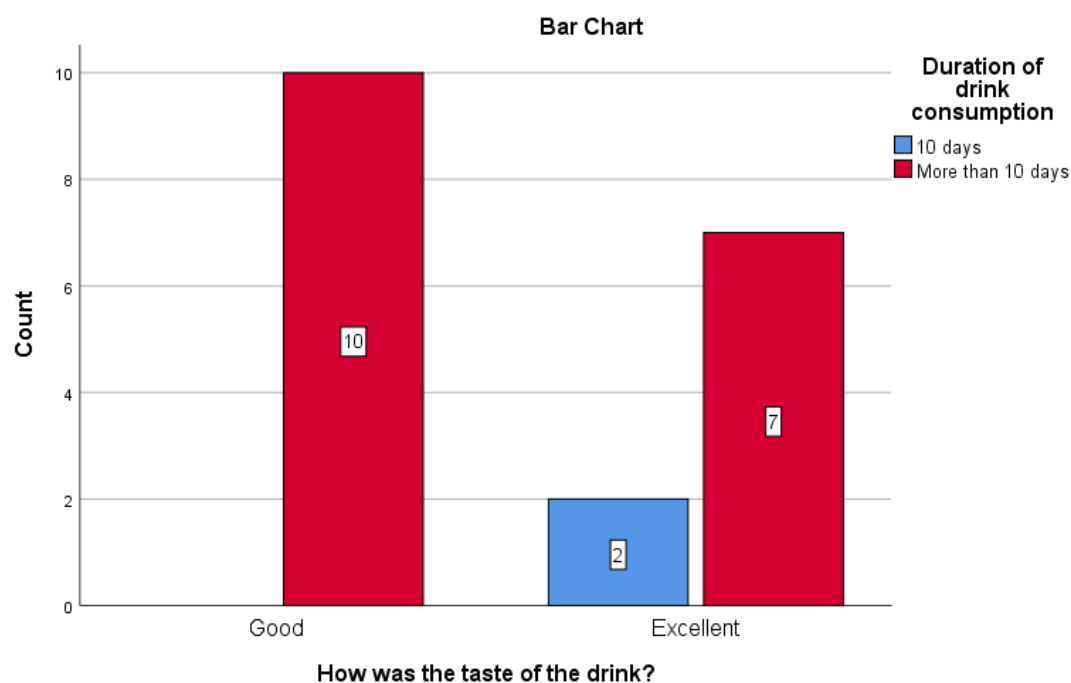
Taste of the drink:

How was the taste of the drink?	Duration of drink consumption		Total
	10 days	More than 10 days	
Good	0	10	10
Excellent	2	7	9
Total	2	17	19

X2-2.484a

p-0.115

df-1

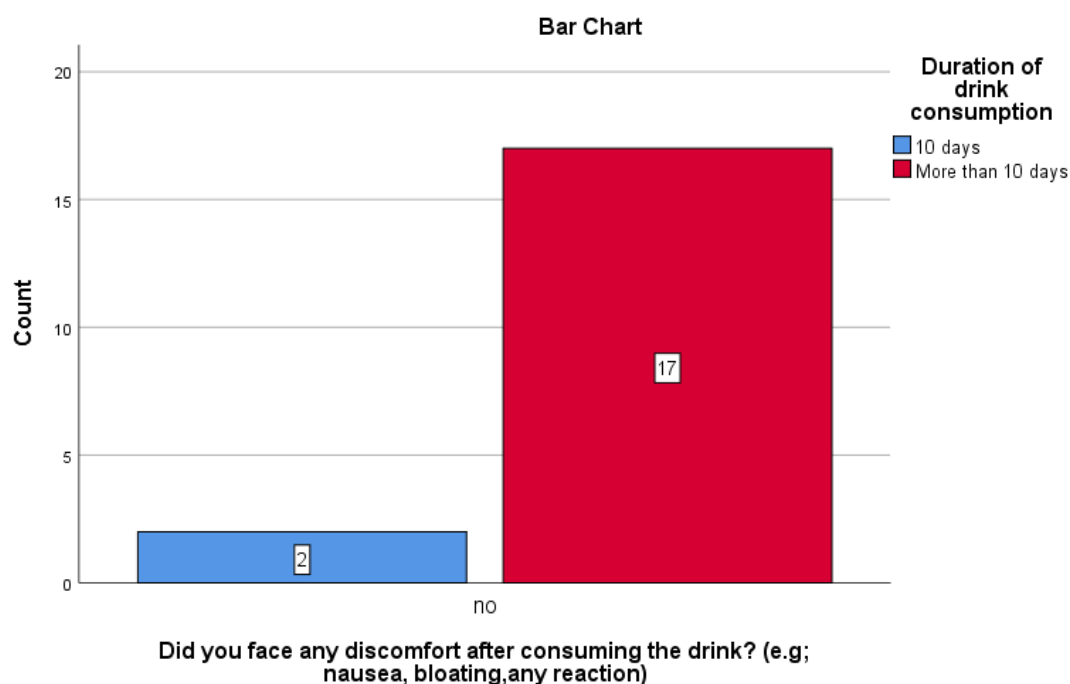


Almost all the participants rated the drink's taste as good and excellent. 10 students described it as good and 9 students rated it as excellent. Altogether the drink was well-accepted by all the participants.

Adverse effects:

X2-.a

Did you face any discomfort after consuming the drink? (e.g; nausea, bloating, any reaction)	Duration of drink consumption		Total
	10 days	More than 10 days	
no	2	17	19
Total	2	17	19

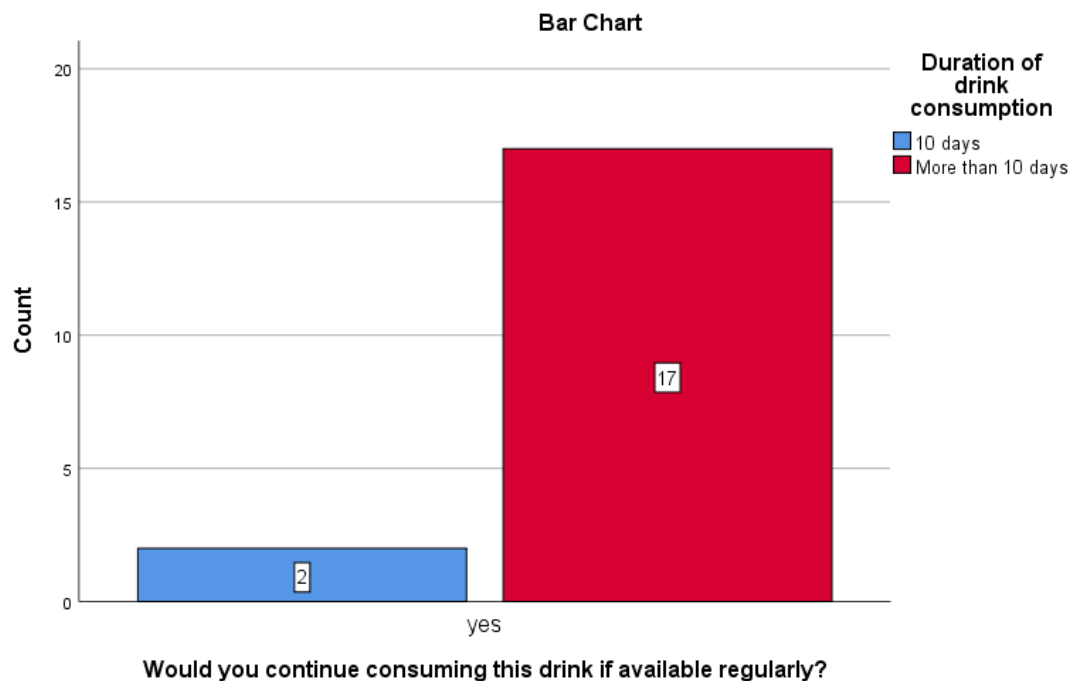


None of the participants experienced any kind of discomfort from the drink like feeling nauseous or bloated regardless of their duration of consuming the drink. This shows that the drink was well tolerated by all the participants.

Regular consumption of the drink:

Would you continue consuming this drink if available regularly?	Duration of drink consumption		Total
	10 days	More than 10 days	
yes	2	17	19
Total	2	17	19

X2-.a



All the participants showed their willingness to consume the drink if available regularly. The response from all the students indicates high acceptability and satisfaction of the intervention drink.

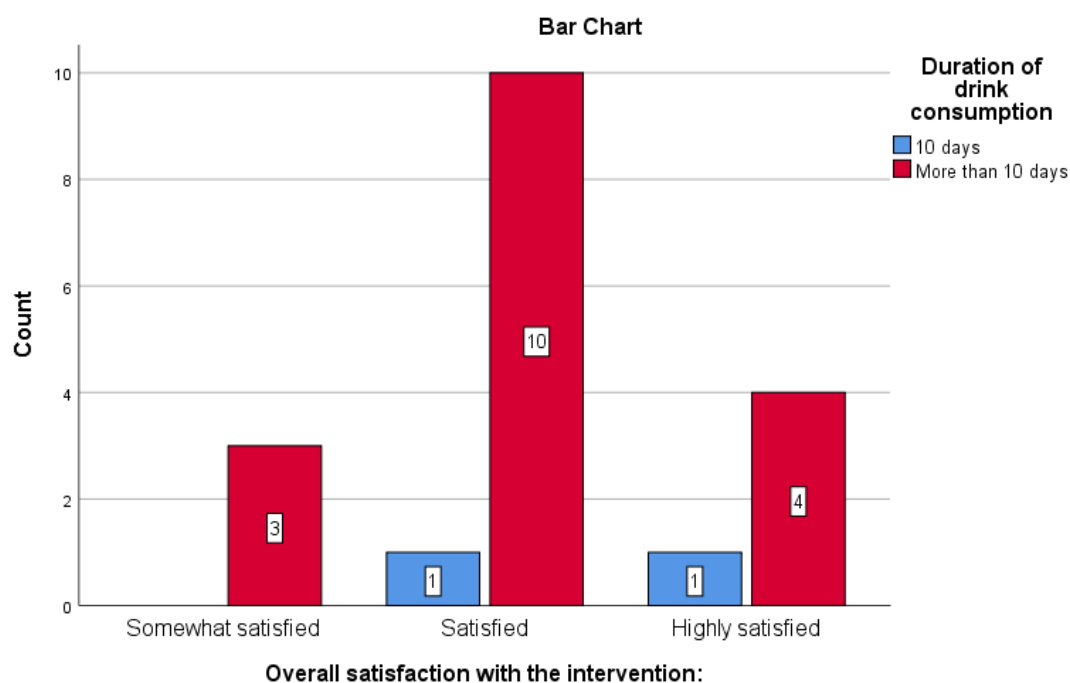
Overall satisfaction:

Overall satisfaction with the intervention:	Duration of drink consumption		Total
	10 days	More than 10 days	
Somewhat satisfied	0	3	3
Satisfied	1	10	11
Highly satisfied	1	4	5
Total	2	17	19

X²-.853a

df-2

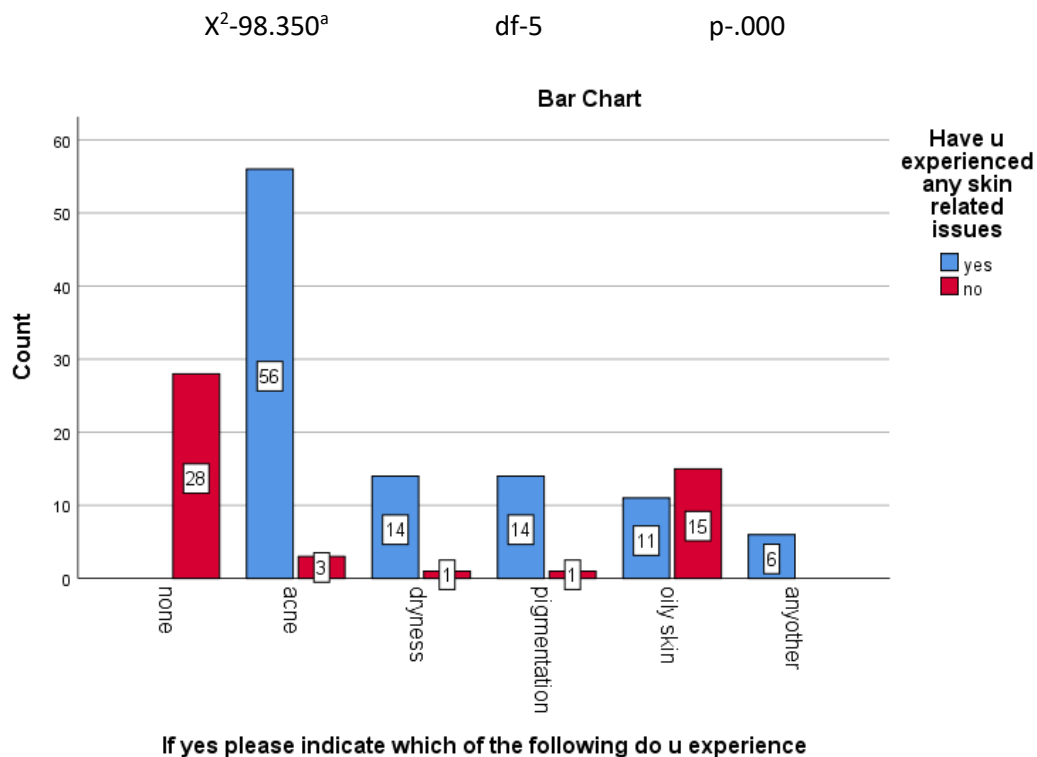
p-.653



About 11 students feel satisfied and 5 students feel highly satisfied by the drink, none of the students expressed dissatisfaction. The chi-square test showed that satisfaction levels did not significantly vary in accordance with the duration of drink consumption.

Cross tabulation of various factors:

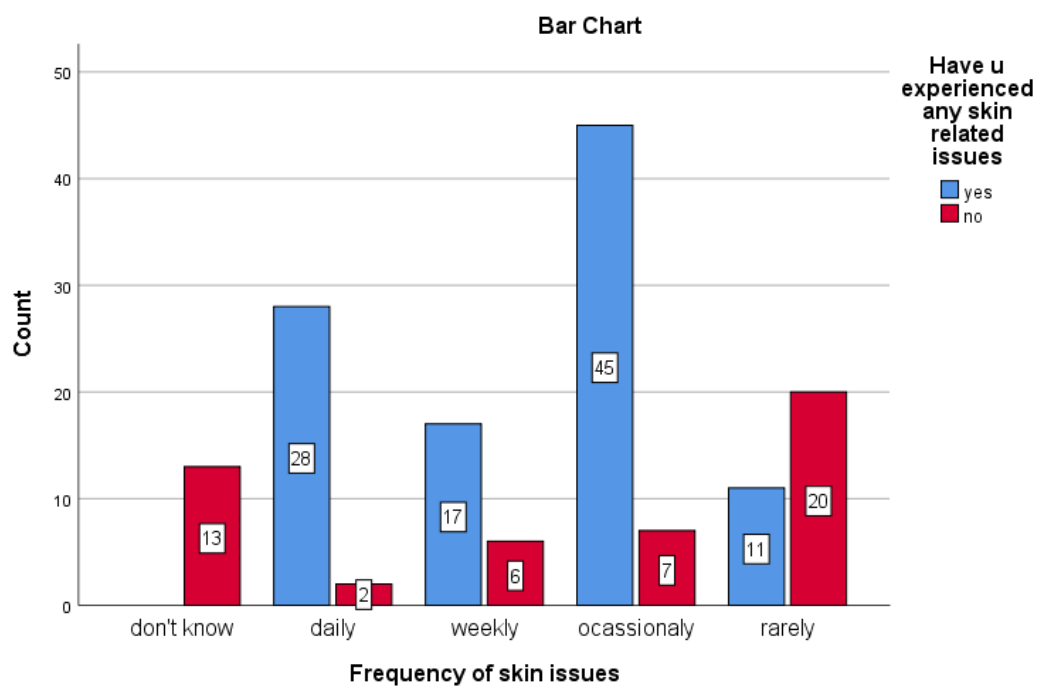
If yes please indicate which of the following do u experience	Have u experienced any skin related issues		Total
	yes	no	
none	0	28	28
acne	56	3	59
dryness	14	1	15
pigmentation	14	1	15
oily skin	11	15	26
anyother	6	0	6
Total	101	48	149



This diagram shows a strong link between the participants who are experiencing skin issues and the types of issues they face. Acne was the most common skin condition students faced followed by dryness, pigmentation and oily skin. The chi-square results $\chi^2 = 98.350$, $p = 0.000$ indicates a highly significant connection.

Frequency of skin issues	Have u experienced any skin related issues		Total
	yes	no	
don't know	0	13	13
daily	28	2	30
weekly	17	6	23
occasionally	45	7	52
rarely	11	20	31
Total	101	48	149

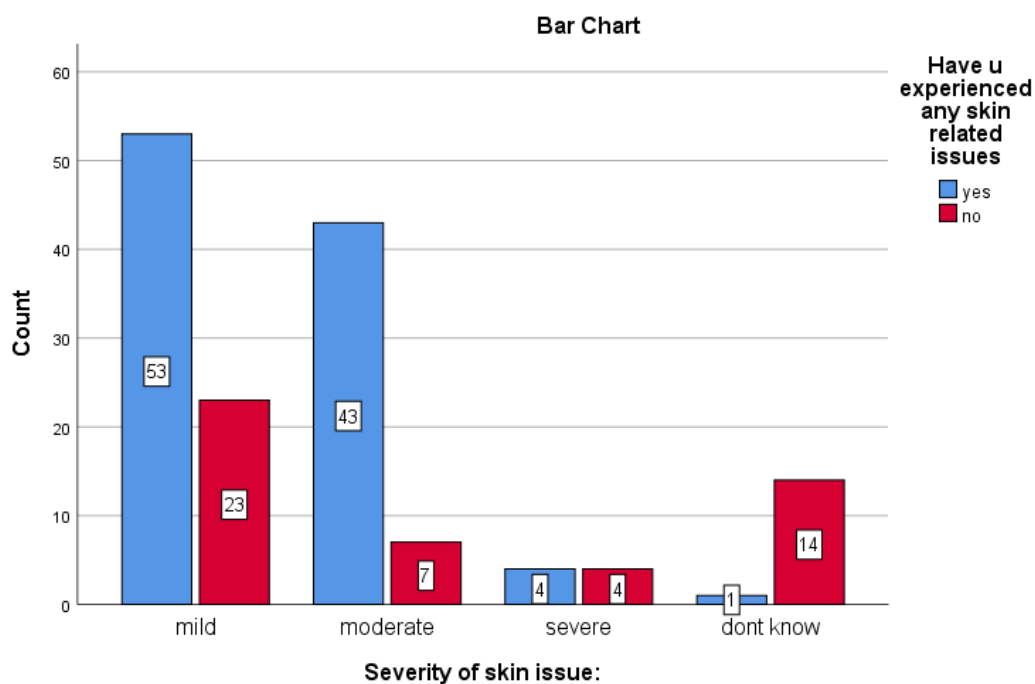
X²-59.903a df- 4 p-.000



Among the students who are facing skin issues, most of them observed symptoms occasionally or daily. In comparison, students who reported no skin issues were in the 'rarely' or 'don't know' categories. The chi-square test values were $X^2 = 59.903$ $p = 0.000$.

Severity of skin issue:	Have u experienced any skin related issues		Total
	yes	no	
mild	53	23	76
moderate	43	7	50
severe	4	4	8
dont know	1	14	15
Total	101	48	149

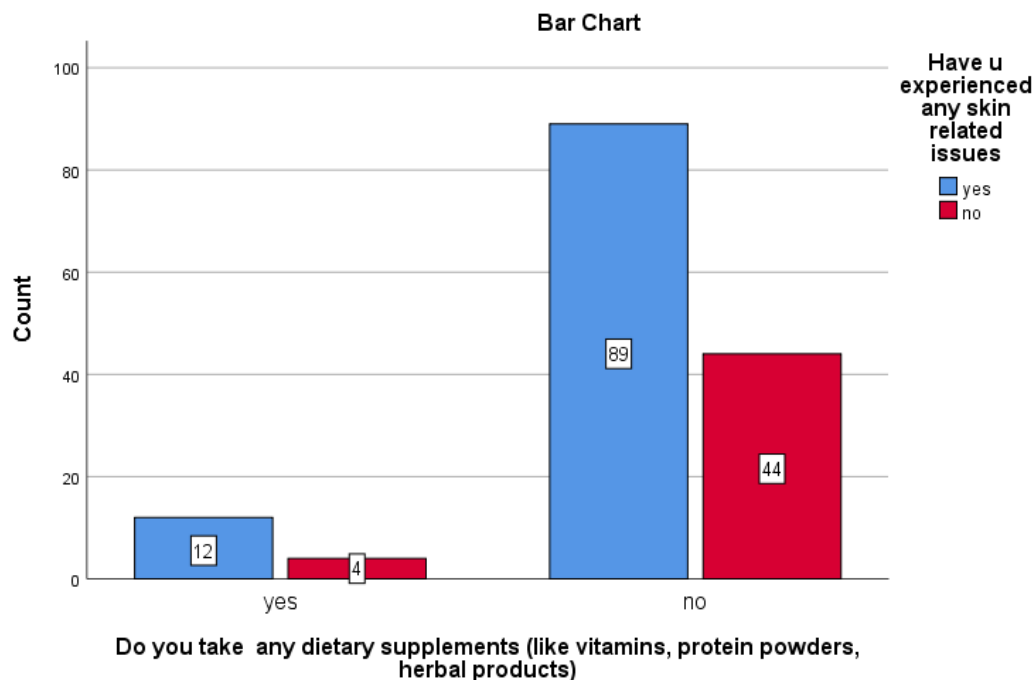
$\chi^2=34.548^a$ df-3 p- .000



Among the total 101 students, most of them experienced mild and moderate symptoms, indicating that majority experienced manageable skin issues. Only a small proportion of students reported to have severe issues. The chi-square test value is as $\chi^2 = 34.548$ and $p = 0.000$.

Do you take any dietary supplements (like vitamins, protein powders, herbal products)	Have u experienced any skin related issues		Total
	yes	no	
yes	12	4	16
no	89	44	133
Total	101	48	149

$\chi^2=.427^a$ df-1 p-.513



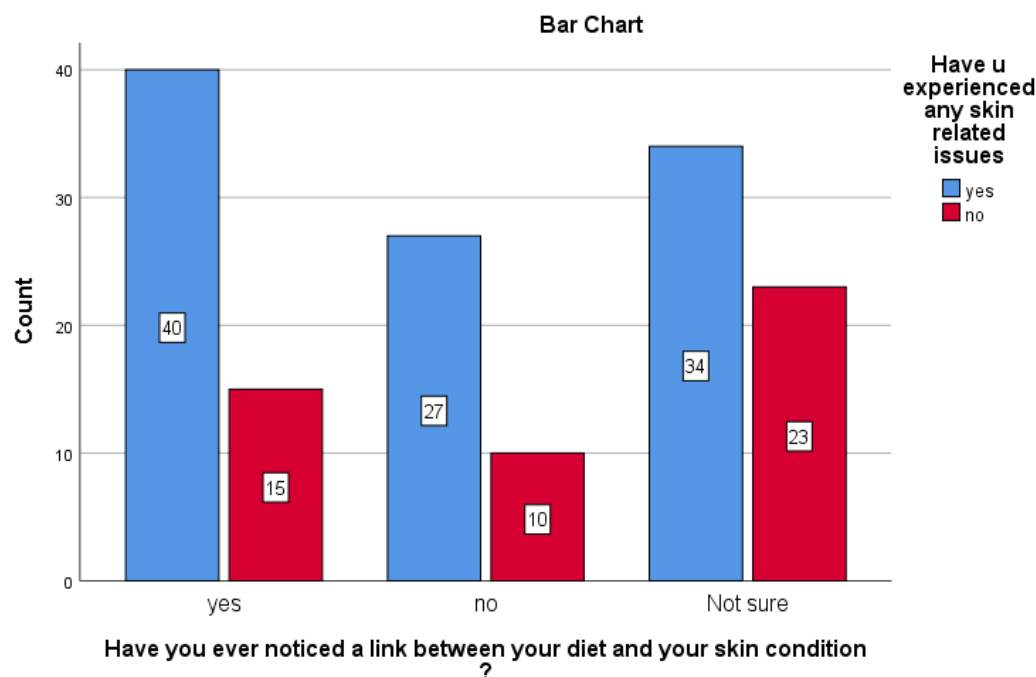
Among the sample population about 12 participants reported using dietary supplements, while the rest of them did not. This suggests that use of supplements was relatively low. The Chi-square test indicates no significant association between the use of supplements and whether the students faced any skin issues. $X^2 = 0.427$, $p = 0.513$

Have you ever noticed a link between your diet and your skin condition ?	Have u experienced any skin related issues		Total
	yes	no	
yes	40	15	55
no	27	10	37
Not sure	34	23	57
Total	101	48	149

 $X^2=2.799a$

df-2

p-.247



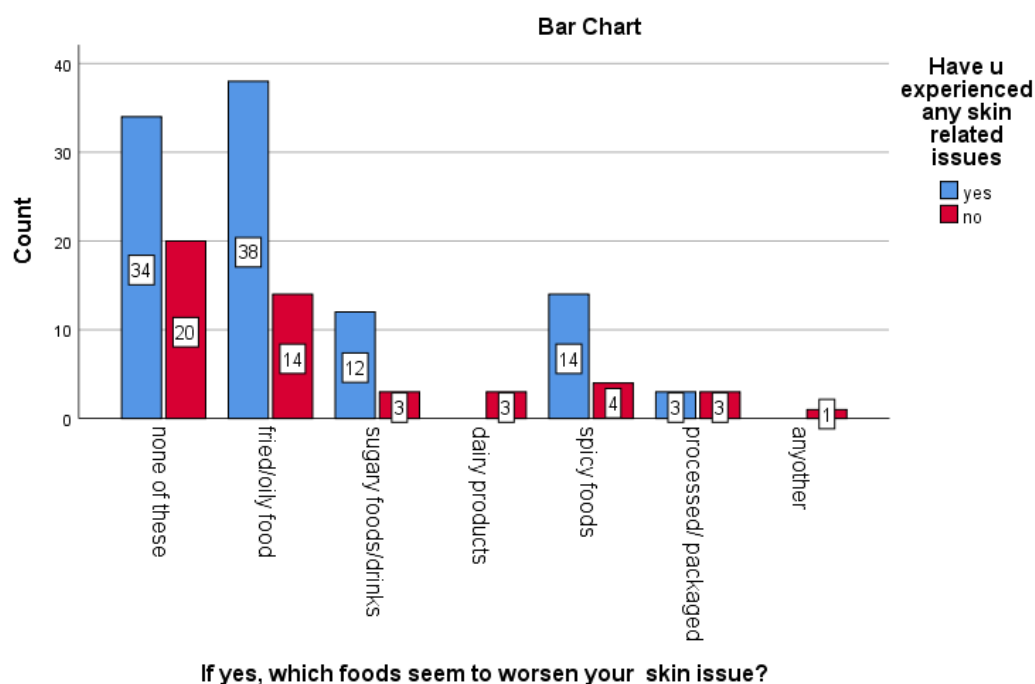
Among the students who experienced skin issues, most of them believed that their diet effected their skin issue. The students without any skin issue also showed mixed perceptions. The chi-square test results show no statistical association. $X^2 = 2.799$ $p = 0.247$.

If yes, which foods seem to worsen your skin issue?	Have u experienced any skin related issues		Total
	yes	no	
none of these	34	20	54
fried/oily food	38	14	52
sugary foods/drinks	12	3	15
dairy products	0	3	3
spicy foods	14	4	18
processed/ packaged	3	3	6
another	0	1	1
Total	101	48	149

 $X^2=12.376^a$

df-6

p-.054



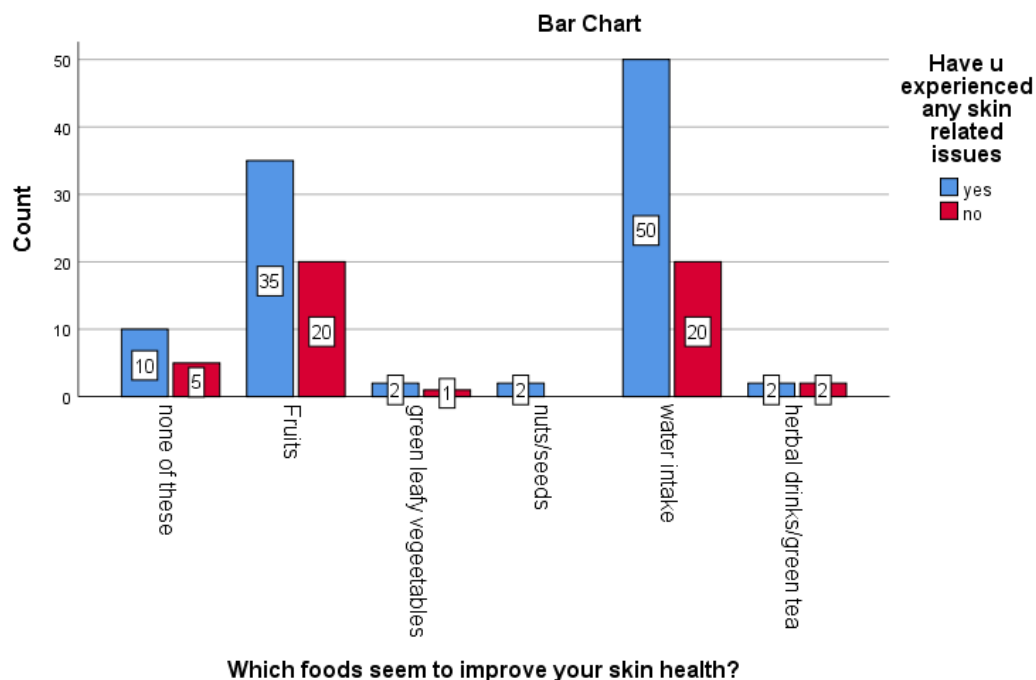
The most common trigger for skin issues were fried and oily foods. Students without skin issues selected 'none of these' suggesting that some foods also act as triggers for those who do not have any skin issue. The chi-square value indicates the connection between the food triggers and the skin issues is not significant as $X^2 = 12.376$, $p = 0.054$.

Which foods seem to improve your skin health?	Have u experienced any skin related issues		Total
	yes	no	
none of these	10	5	15
Fruits	35	20	55
green leafy vegetables	2	1	3
nuts/seeds	2	0	2
water intake	50	20	70
herbal drinks/green tea	2	2	4
Total	101	48	149

 $\chi^2=2.399^a$

df-5

p-.792



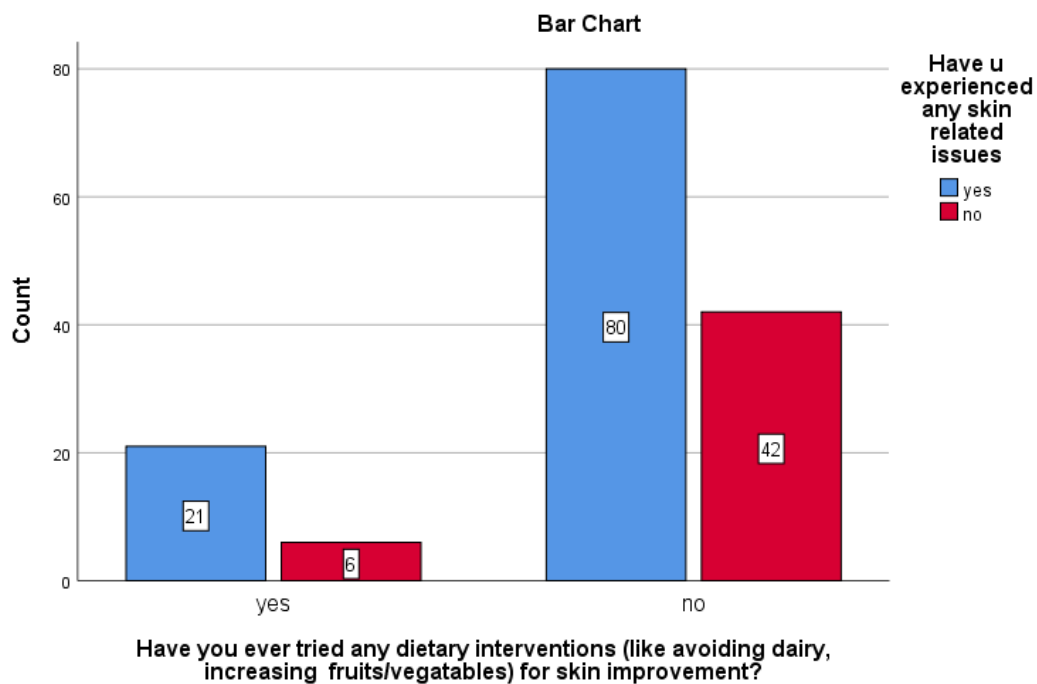
Water intake and fruits consumption is reported to improve skin health as they are nutrient-rich and adequate water intake contributes in well skin hydration. Only small number of students selected green leafy vegetables, nuts and seeds or herbal drinks.

Have you ever tried any dietary interventions (like avoiding dairy, increasing fruits/vegetables) for skin improvement?	Have u experienced any skin related issues		Total
	yes	no	
yes	21	6	27
no	80	42	122
Total	101	48	149

 $\chi^2=1.508^a$

df-1

p-.219



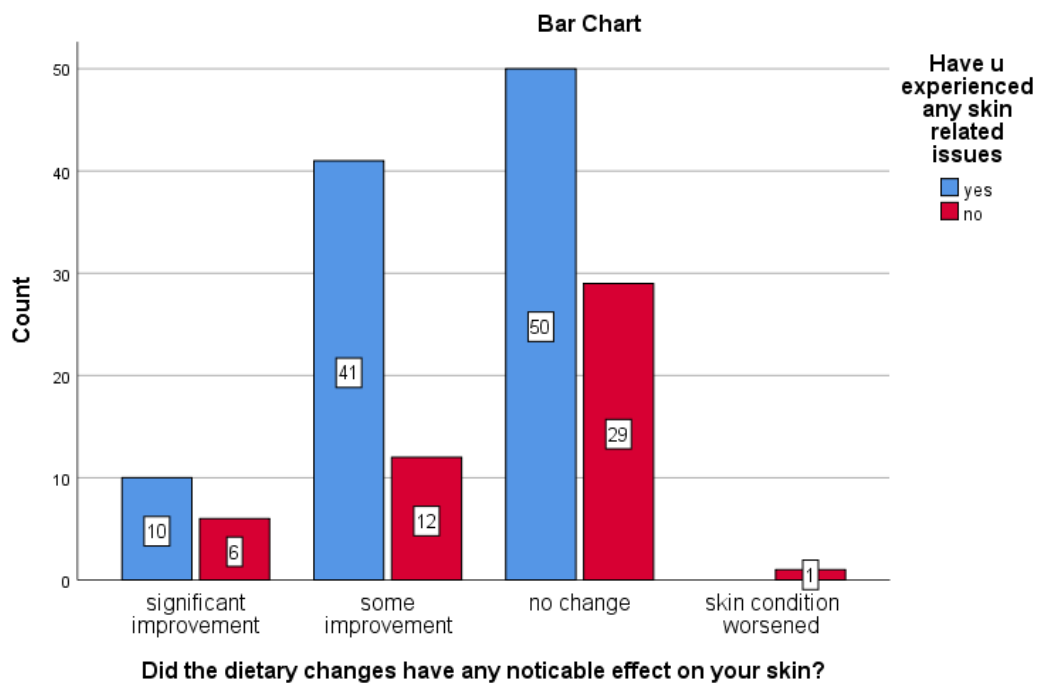
Among all the participants, 21 of them tried other dietary interventions for skin improvement, while the rest 80 did not and among those who do not have any skin issue had tried dietary interventions. This indicates that only a small number of students, regardless of their skin issue actively opt for dietary interventions for their skin health.

Did the dietary changes have any noticeable effect on your skin?	Have u experienced any skin related issues		Total
	yes	no	
significant improvement	10	6	16
some improvement	41	12	53
no change	50	29	79
skin condition worsened	0	1	1
Total	101	48	149

 $\chi^2=5.264^a$

df-3

p-.153



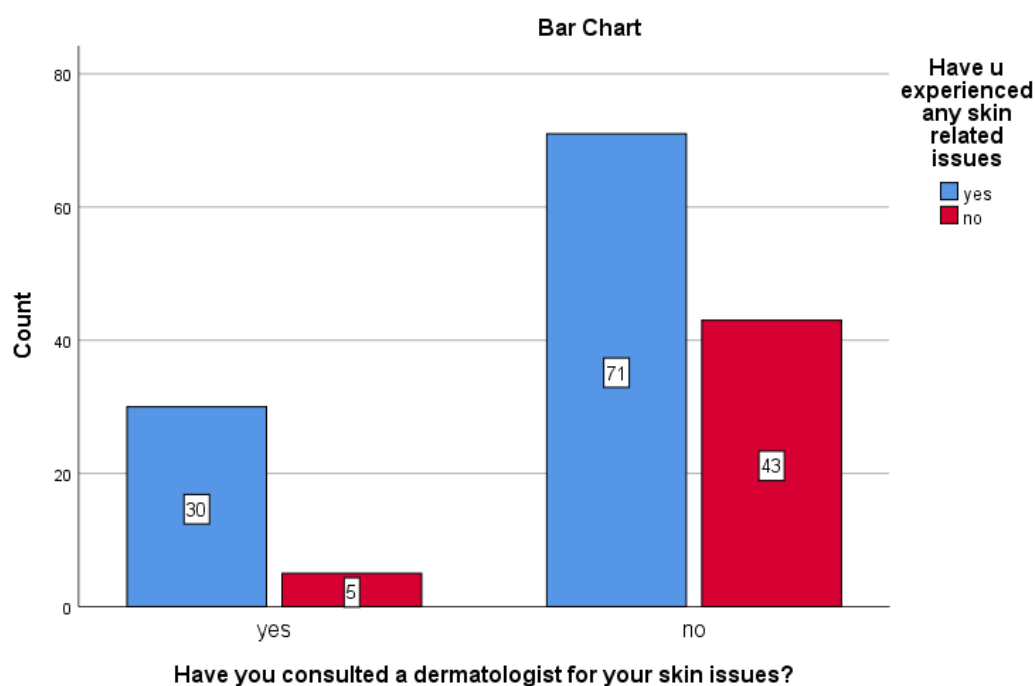
Among the study population, 41 of them reported as some improvement and 50 of them as no change after following some dietary intervention. While just 10 students experienced significant improvement. The chi-square test value does not indicate statistical significance.

Have you consulted a dermatologist for your skin issues?	Have u experienced any skin related issues		Total
	yes	no	
yes	30	5	35
no	71	43	114
Total	101	48	149

 χ^2 - 6.734^a

df-1

p-.009



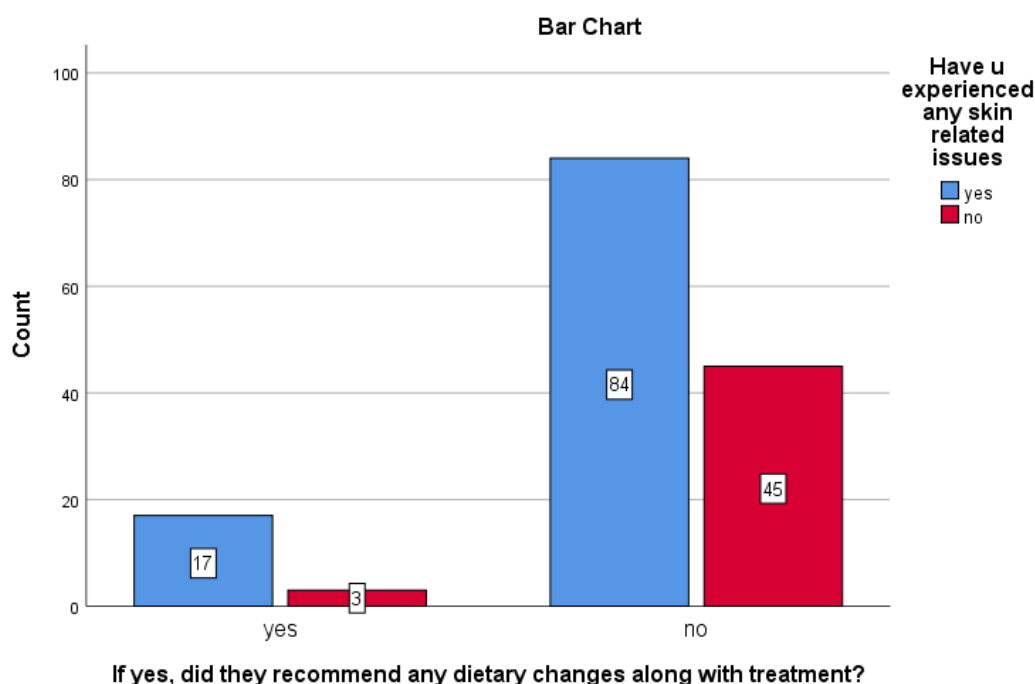
Among the participants who reported skin issues, about 30 of them consulted a dermatologist while 71 of them did not. The Chi-square test shows a statistically significant association, which generally means conferring a dermatologist is positively linked to whether the participants experienced skin-issues.

If yes, did they recommend any dietary changes along with treatment?	Have u experienced any skin related issues		Total
	yes	no	
yes	17	3	20
no	84	45	129
Total	101	48	149

 $\chi^2=3.135^a$

df-1

p-0.77



Only 17 students among the study population who experienced skin issues received dietary recommendation from their dermatologist, while the rest of them did not. Likewise, those who did not have any skin issue among them only 3 students reported of receiving dietary guidance.

CONCLUSION

The study highlights that skin conditions like acne, dryness, oily skin and pigmentation are highly prevalent in the college going students. Among these skin issues acne is the most common concern. The outcomes show that dietary patterns, lifestyle behaviours, stress levels and hygiene practices contribute to skin health. It is observed that intake of inadequate fruits, nuts and seeds, whereas, intake of fried, sugary and processed food was common among the participants. In spite of having these skin issues, only a few participants consulted a dermatologist or tried dietary interventions which indicates there is lack of awareness about the role of diet in skin health management.

The outcomes of the intervention phase was encouraging. Students who consumed the drink observed noticeable improvements in the skin texture, hydration, acne reduction and lightening of dark spots or pigmentation without any adverse effects. There was high acceptance and willingness to continue the drink further as it is safe, natural and is nutrient dense which contributes in aiding as well as maintaining overall skin health.

Altogether, the study concludes that despite the widespread of skin conditions, they are highly influenced by controllable factors like diet, stress, sleep and lifestyle. Spreading awareness about the importance of nutrition, healthy eating habits may help reduce the skin conditions among the young adults. The intervention drink shows potential as an easy and accessible way to promote the skin health.

ANNEXURES

Pre-intervention Questionnaire:

‘ST. ANN’S COLLEGE FOR WOMEN

Autonomous, affiliated to Osmania University, NAAC Accredited with

‘A’ Grade (4th Cycle), CPE by UGC, ISO 9001:2015 ISO 14001:2015

Mehdipatnam, Hyderabad- 500028

STUDY ON THE PREVALENCE OF SKIN RELATED ISSUES AND THE IMPACT OF DIETARY INTERVENTIONS AMONG COLLEGE GOING STUDENTS

Questionnaire:

Section A: personal Information

1. Age: _____ years.
2. Height: _____ cm.
3. Weight: _____ kg.
4. Gender:
 - ☐ Male
 - ☐ Female
5. Year of study:
 - ☐ 1st year
 - ☐ 2nd year
 - ☐ 3rd year
 - ☐ 4th year or above
6. Residence:
 - ☐ Hostel
 - ☐ With family
 - ☐ Rented / Accommodation

Section: B Skin Health Profile

7. Have you experienced any skin-related issues in the past 12 months?
 - ☐ Yes
 - ☐ No
8. If yes, please indicate which of the following did you experience. (You may select more than one):
 - ☐ Acne/Pimples
 - ☐ Dryness/Flakiness
 - ☐ Pigmentation/dark spots
 - ☐ Oily skin
 - ☐ Any other (please specify): _____.

9. Frequency of skin issues:
- ☐ Daily
 - ☐ Weekly
 - ☐ Occasionally
 - ☐ Rarely
10. Severity of skin issues (self-assessment):
- ☐ Mild
 - ☐ Moderate
 - ☐ Severe
-

Section C: Dietary Habits

11. How many meals do u consume per day:
- ☐ 2
 - ☐ 3
 - ☐ More than 3
12. How often do you consume the following (tick one option for each food group):

Food Groups	Daily 3-4 times	Weekly 1-2 times	Week rarely	Never
Fruits				
Vegetables				
Fast food / Junk food				
Fried foods				
Sugary snacks / Drinks				
Dairy products				
Nuts / Seeds				
Water (>2 litres/day)				

13. Do you take any dietary supplements (vitamins, protein powders, herbal products)?
- ☐ Yes (please specify): _____
 - ☐ No
-

Section D: Impact of Diet on Skin

14. Have you ever noticed a link between your diet and your skin condition?
- ☐ Yes
 - ☐ No
 - ☐ Not sure
15. If yes, which foods seem to worsen your skin issues?
- ☐ Fried/Oily foods
 - ☐ Sugary foods/Drinks
 - ☐ Dairy products
 - ☐ Spicy foods
 - ☐ Processed/Packaged foods

- ☐ Other (specify): _____

16. Which foods seem to improve your skin health?

- ☐ Fruits
- ☐ Green leafy vegetables
- ☐ Nuts/Seeds
- ☐ Water intake
- ☐ Herbal drinks/Green tea
- ☐ Other (specify): _____

17. Have you ever tried any dietary interventions (e.g., avoiding dairy, reducing sugar, increasing fruits/vegetables) for skin improvement?

- ☐ Yes (please describe): _____
- ☐ No

18. Did the dietary changes have any noticeable effect on your skin?

- ☐ Significant improvement
- ☐ Some improvement
- ☐ No change
- ☐ Skin condition worsened

Section E: Lifestyle Factors

19. Average sleep duration per day:

- ☐ Less than 5 hours
- ☐ 5-6 hours
- ☐ 7-8 hours
- ☐ More than 8 hours

20. How often do you change your pillow cover?

- ☐ Daily
- ☐ Weekly
- ☐ Monthly

21. Stress level: (self-rated):

- ☐ Low
- ☐ Moderate
- ☐ High

22. Physical activity level:

- ☐ Sedentary (little or no exercise)
- ☐ Moderate (exercise 2-3 times/week)
- ☐ Active (exercise 4+ times-week)

Section F: Management

23. Have you consulted a dermatologist for your skin issues?

- ☐ Yes
- ☐ No

24. If yes, did they recommend any dietary changes along with treatment?

- ☐ Yes
 - ☐ No
-
-

Questionnaire:

Section A: personal Information

25. Age: _____ years.
26. Height: _____ cm.
27. Weight: _____ kg.
28. Gender:
- ☐ Male
 - ☐ Female
29. Year of study:
- ☐ 1st year
 - ☐ 2nd year
 - ☐ 3rd year
 - ☐ 4th year or above
30. Residence:
- ☐ Hostel
 - ☐ With family
 - ☐ Rented / Accommodation
-

Section: B Skin Health Profile

31. Have you experienced any skin-related issues in the past 12 months?
- ☐ Yes
 - ☐ No
32. If yes, please indicate which of the following did you experience. (You may select more than one):
- ☐ Acne/Pimples
 - ☐ Dryness/Flakiness
 - ☐ Pigmentation/dark spots
 - ☐ Oily skin
 - ☐ Any other (please specify): _____.
33. Frequency of skin issues:
- ☐ Daily
 - ☐ Weekly
 - ☐ Occasionally
 - ☐ Rarely
34. Severity of skin issues (self-assessment):
- ☐ Mild
 - ☐ Moderate
 - ☐ Severe
-

Section C: Dietary Habits

35. How many meals do u consume per day:
- ☐ 2
 - ☐ 3
 - ☐ More than 3

36. How often do you consume the following (tick one option for each food group):

Food Groups	Daily 3-4 times	Weekly 1-2 times	Week rarely	Never
Fruits				
Vegetables				
Fast food / Junk food				
Fried foods				
Sugary snacks / Drinks				
Dairy products				
Nuts / Seeds				
Water (>2 litres/day)				

37. Do you take any dietary supplements (vitamins, protein powders, herbal products)?

- ☐ Yes (please specify): _____
- ☐ No

Section D: Impact of Diet on Skin

38. Have you ever noticed a link between your diet and your skin condition?

- ☐ Yes
- ☐ No
- ☐ Not sure

39. If yes, which foods seem to worsen your skin issues?

- ☐ Fried/Oily foods
- ☐ Sugary foods/Drinks
- ☐ Dairy products
- ☐ Spicy foods
- ☐ Processed/Packaged foods
- ☐ Other (specify): _____

40. Which foods seem to improve your skin health?

- ☐ Fruits
- ☐ Green leafy vegetables
- ☐ Nuts/Seeds
- ☐ Water intake
- ☐ Herbal drinks/Green tea
- ☐ Other (specify): _____

41. Have you ever tried any dietary interventions (e.g., avoiding dairy, reducing sugar, increasing fruits/vegetables) for skin improvement?

- ☐ Yes (please describe): _____
- ☐ No

42. Did the dietary changes have any noticeable effect on your skin?

- ☐ Significant improvement
- ☐ Some improvement
- ☐ No change
- ☐ Skin condition worsened

Section E: Lifestyle Factors

43. Average sleep duration per day:
- ☐ Less than 5 hours
 - ☐ 5-6 hours
 - ☐ 7-8 hours
 - ☐ More than 8 hours
44. How often do you change your pillow cover?
- ☐ Daily
 - ☐ Weekly
 - ☐ Monthly
45. Stress level: (self-rated):
- ☐ Low
 - ☐ Moderate
 - ☐ High
46. Physical activity level:
- ☐ Sedentary (little or no exercise)
 - ☐ Moderate (exercise 2-3 times/week)
 - ☐ Active (exercise 4+ times-week)
-

Section F: Management

47. Have you consulted a dermatologist for your skin issues?
- ☐ Yes
 - ☐ No
48. If yes, did they recommend any dietary changes along with treatment?
- ☐ Yes
 - ☐ No
-

Post-intervention Questionnaire:**‘ST. ANN’S COLLEGE FOR WOMEN**

Autonomous, affiliated to Osmania University, NAAC Accredited with
‘A’ Grade (4th Cycle), CPE by UGC, ISO 9001:2015 ISO 14001:2015
Mehdipatnam, Hyderabad- 500028

STUDY ON THE PREVALENCE OF SKIN RELATED ISSUES AND THE IMPACT OF DIETARY INTERVENTIONS AMONG COLLEGE GOING STUDENTS

Post-intervention questionnaire:

Section: A

1.Age: _____ years.

2. Gender:

- ☐ Male
- ☐ Female

3.Duration of drink consumption:

- ☐ 5 days
 - ☐ 7 days
 - ☐ 10 days
 - ☐ More than 10 days
-

Section: B Skin conditions and changes

4. Which of the following skin issues were you facing before the intervention?

- ☐ Acne / pimples
- ☐ Dry skin
- ☐ Oily skin
- ☐ Pigmentation / dark spots

5. How would you describe the overall improvement in your skin after consuming the drink?

- ☐ No improvement
- ☐ Slight improvement
- ☐ Moderate improvement
- ☐ Significant improvement

6. Did you notice any change in acne/pimples?

- ☐ No change
- ☐ Increased
- ☐ Decreased

7. How did your skin texture change after the intervention?

- ☐ No change
- ☐ Became smoother
- ☐ Became rougher

8. Did you observe any change in your skin dryness or oiliness?

- ☐ Reduced dryness
- ☐ Reduced oiliness
- ☐ Both improved
- ☐ No change

9. Did you notice any change in skin pigmentation/dark spots?

- ☐ No change
- ☐ Slight lightening

- Noticeable lightening
-

Section: C Drink acceptability

10.How was the taste of the drink?

- Poor
- Average
- Good
- Excellent

11.Did you face any discomfort after consuming the drink?(e.g; nausea, bloating, any reaction)

- Yes
- No

12.Would you continue consuming this drink if available regularly?

- Yes
- No

13.Overall satisfaction with the intervention:

- Not satisfied
 - Somewhat satisfied
 - Satisfied
 - Highly satisfied
-

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