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## To study the dietary habits of the patient's suffering from Hemorrhoids (piles)

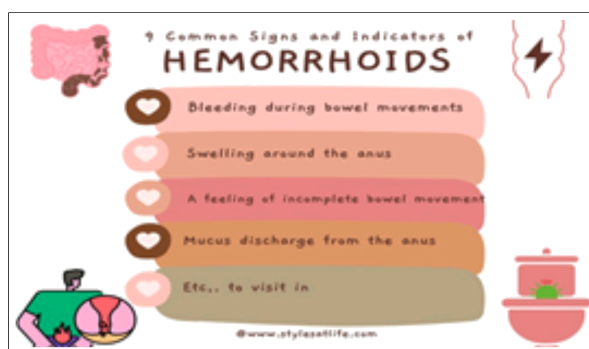
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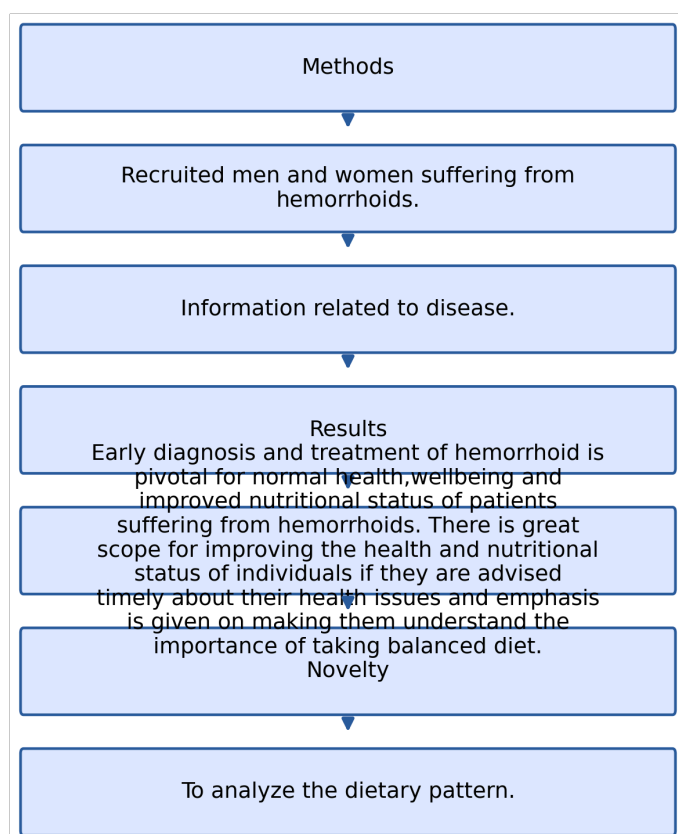
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#### ABSTRACT

Hemorrhoids, also called Piles are masses or clumps of tissue which consist of muscle and elastic fibers with enlarged, bulging blood vessels and surrounding supporting tissue present in the anal canal of an individual. It is a condition characterized by the prolapsed of an anal cushion that may result in bleeding and pain. This condition is a common in the adults. The current study was planned and carried out to study the normal bowel habits of the subject, and to study the dietary habits of the subjects and their dietary intake with relation to fluid and fiber intake. The study was carried out in city of Hisar district, Haryana because investigator was familiar with the place and not many studies have been conducted previously on these lines. A sample of 60 male and female subjects suffering from Hemorrhoids was selected for the study. The questionnaire was framed to get information on the dietary pattern and life style of the patient suffering from Hemorrhoids. The questionnaire framed, contained definite concrete and well-defined questions. Out of the 60 subjects surveyed, 31.7 percent of the subjects were males and 68.4 percent were females and (58.4%) were from the nuclear families and (41.7%) of the subjects were from the joint families. Family history of hemorrhoids was observed only in 16.7 percent of the subjects and 83.4 percent of the subjects had no such family history, Out of 60 subjects surveyed, 50 percent of the subjects complained of painful defecation. Also 23.4 percent of the subjects complained of rectal bleeding. Studying the dietary habits of patients with hemorrhoids is a valuable endeavor. We might consider analyzing factors like fiber intake, hydration levels, consumption of spicy foods, and certain food groups like fruits and vegetables in their diets. This information could provide potential dietary modifications to manage or prevent hemorrhoids.

**Keywords:** Hemorrhoids, Fiber, Spices, Fruits and vegetables





## Introduction

In an individual's anal canal, hemorrhoids, also known as piles, are masses or clumps of tissue made up of muscle and elastic fibers with swollen, protruding blood vessels and surrounding supportive tissue (Kona, 2010) [1]. The prolapse of an anal cushion, which can cause pain and bleeding, is the condition's hallmark (Health Grades, 2011) [2]. Adults with this syndrome are not uncommon. Hemorrhoids will cause symptoms in both men and women over 50 once in their lifetime (Bailey, 2004) [3]. Nonetheless, there have been cases where this illness has also been identified in older people and youngsters (Navarra *et al.*, 2000) [4]. With 3.3 million ambulatory care visits in the US, hemorrhoids are thought to be the fourth most common gastrointestinal outpatient diagnosis (Everhart *et al.*, 2009) [5]. Depending on their position with respect to the pectinate line, which separates the upper 2/3 and lower 1/3 of the anus, they are categorized as "internal" or "external." Cells resembling those lining the remainder of the intestines cover internal hemorrhoids, which are situated above the pectinate line. Below the skin's surface, external hemorrhoids appear and are covered in skin-like cells. Hemorrhoids don't become problematic until they start to swell and start to itch, hurt, or bleed. The degree of tissue descent into the anal canal determines the subsequent grading of internal hemorrhoids or genuine hemorrhoids. Hemorrhoids are classified into four grades: -

**Grade 1:** - The anus lining typically has minor inflammations. They're not really noticeable. The mucosa in grade 1 hemorrhoids hardly prolapses, but if they are severely strained, the anal sphincter may close, trapping them. Venous congestion then sometimes follows, causing pain or hemorrhage.

**Grade 2:** - The patient reports an evident lump due to more protruding mucosa in their hemorrhoids; nevertheless, unless thrombosis occurs, this lump goes away quickly and spontaneously after defecating. Not only do grade 2 hemorrhoids (piles) stay inside the anus, but they

are larger than grade 1 piles. They won't need assistance, even if they are pushed out during the passing of stool.

**Grade 3:** Hemorrhoids in this grade are typically caused by chronic hemorrhoidal illness, in which the anal sphincter dilates due to persistent prolapsing, causing the hemorrhoids to protrude with little provocation and often requiring manual replacement.

**Grade 4:** Hemorrhoids in this grade are typically external and always protruding unless the patient replaces them, lies down, or raises the foot of the bed. The dentate line also spreads in fourth-degree hemorrhoids, and an external variable consisting of persistent, redundant perianal skin is present (Dennison *et al.*, 1989) [6].

The actual cause of hemorrhoids remains unknown. The chances of suffering from hemorrhoids increase with age. However, even children and the elderly have also been diagnosed with this condition. There are certain common factors that increase your risk of suffering from hemorrhoids. These are caused by temperament, body habits, customs, passions, sedentary life, tight-laced clothes and climate. Chronic diarrhea, poor bathroom habits, postponing bowel movements and a poor fiber diet are also considered to be contributing causes. Although hemorrhoids are painful, they are not life threatening and often go away on their own lacking treatment. If you have them often, you may develop symptoms of anemia, such as weakness and pale skin due to blood loss, although this is rare. (April Kahn *et al.*, 2019).

A range of symptoms, such as anal bleeding, prolapse, itching, and/or irritation of the perianal area, can be indicative of hemorrhoids illness. Patients with hemorrhoids illness may have a considerable reduction in their quality of life (QoL) as a result of all these bodily discomforts (Ng *et al.*, 2020) [7]. Additionally, the necessity of preventing hemorrhoids illness by proper risk factor management is highlighted by the frequency of recurrence, the persistence of pain, and the not insignificant complication rate even following surgery (Eberspacher C. *et al.*, 2021) [8].

Technology access: Research conducted in Uttarakhand state by Jha *et al.* (2021) [9] on the use of ICT tools by farmwomen found that most of them need capacity building programs because they are not proficient in using devices like smartphones, the internet, televisions, and so on.

Income inequality in agriculture: Rani *et al.* (2022) [10] have noted the different issues that women in Punjab's Sub Mountainous Region encounter when working in agriculture. The majority of women admitted that even if they had lots of free time, it was meaningless because they were unemployed and couldn't even provide a minimal level of living for their family and themselves.

Social network analysis (SNA) can identify the people and institutions that serve as the agricultural network's main hubs. These "key communicators" frequently have a significant impact on the communication of agricultural knowledge (Jyothi *et al.*, 2016) [11].

It was found that most farmers had a medium level of innovativeness. This could be because most farmers were middle-aged and may have been interested in implementing new ideas earlier than other farmers (Jyothi *et al.*, 2019) [12].

In the agricultural and fishing industries, Farmer Producer Organizations (FPOs) encounter numerous obstacles that impact their expansion and advancement (Chandegara *et al.*, 2023) [13].

In order to accomplish the intended result and provide farmers with technical inputs from the lab to land in order to promote scientific agriculture techniques, KVKs are ideally situated to lead and foster local innovation (Bhuvana *et al.*, 2020) [14].

Training is a vital component for the speedy transmission of technology, as well as a means of enhancing socioeconomic conditions and agriculture (Dobariya *et al.*, 2017) [15].

Keeping the above points in view, the current study was planned and carried out with the following objectives:

- To study the normal bowel habits of the subject.
- To study the normal behavioral pattern of the subject which may lead to hemorrhoids.

- To study the frequency and duration of occurrence of hemorrhoid in the subject.
- To study the dietary habits of the subjects and their dietary intake with relation to fluid and fiber intake.

## Materials and Methods

The study was carried out in city of Hisar district, Haryana because investigator was familiar with the place and not many studies have been conducted previously on these lines. A sample of 60 male and female subjects suffering from Hemorrhoids was selected for the study. The questionnaire was framed to get information on the dietary pattern and life style of the patient suffering from Hemorrhoids. The questionnaire framed, contained definite concrete and well-defined questions. It consisted of an exhaustive list of questions, which were prepared and arranged in a systematic order to facilitate smooth communication for collection of data.



**Information related to disease:** - This part of the questionnaire included information regarding the disease, any family history of the disease, any treatment undertaken, whether the patient suffered from any other disease and the medication he / she followed.

As activity pattern is closely linked to Hemorrhoids, therefore, questions related to information regarding activity pattern i.e. sedentary / moderate / heavy, any exercise done by the patient and regularity in doing exercise were included.

**Dietary Information:** - This part of the questionnaire was aimed at collecting the information regarding the dietary habits of the subject i.e. whether lacto-vegetarian / ova-vegetarian / non-vegetarian. Questions related to the patient's food choices and food habits were included under this part.

The following statistical measures were used for the interpretation of data collected in the study:

- **Arithmetic Mean:** - It is obtained by dividing the sum of observations by total number of observations:

$$\text{Arithmetic Mean (X)} = \frac{\sum X}{N}$$

Where  $\sum X$  = Sum of observations.

$N$  = Number of observations.

- **Standard Deviation (S.D.):** -

Standard deviation is the measure of variation and is widely used to show the scatter of individual measurements in a given distribution. By definition it is the square root of average of the scattered deviation of the measurements from the mean.

$$\sigma = \sqrt{\frac{\sum x^2}{N}}$$

$x = X - \bar{X}$  (where  $X$  is actual mean value and  $\bar{X}$  is the standard value).  
 $N$  = Number of observations.

## Results

### 1. General information

The following general information was collected about the subjects.

**1.1. Age:** - Sixty subjects selected for the study were in the age group of 20-80 years. The distribution of the subjects according to their age is shown in Table 1.1.

**Table 1.1.** Distribution of the subjects according to their age. ( $n = 60$ )

| Age (in years) | Number | Percentage |
|----------------|--------|------------|
| 20-35          | 34     | 56.7       |
| 35-50          | 16     | 26.7       |
| 50-65          | 6      | 10         |
| 65-80          | 8      | 6.7        |

From the current study, it was found that maximum number of the subjects (56.7%) suffering from hemorrhoids belonged to the age group of 20-35 years followed by the age group of 35-50 years which constituted 26.7 percent of the subjects. Only 6.7 percent and 10 percent of the subjects belonged to the age group of 65-80 years and 50-65 years respectively.

**1.2 Sex of the subjects:** - Distribution of the subjects according to the sex is represented in table 1.2.

**Table 1.2.** Distribution of the subjects according to their sex. ( $n = 60$ )

| Sex    | Number | Percentage |
|--------|--------|------------|
| Male   | 19     | 31.7       |
| Female | 41     | 68.4       |

Distribution of the patients according to the sex exposes that majority of the subjects suffering from hemorrhoids were females i.e. 68.4 percent, while only 31.7 percent of the subjects were males. Thus, it is apparent that occurrence of hemorrhoids is higher in females than males. It has been well-established through a number of studies that hemorrhoids are much more dominant in females than males.

### 1.3 Type of Family

The type of family that is whether the family is nuclear or joint also affects the nutrition of the individual. Table 1.3 Shows the distribution of the respondents giving to the type of the family.

**Table 1.3.** Distribution of the respondents according to the type of family ( $n = 60$ )

| Type of family | Number | Percentage |
|----------------|--------|------------|
| Nuclear        | 35     | 58.4       |
| Joint          | 25     | 41.7       |

It is observed that the majority of the subjects were from the nuclear family i.e. 58.4 percent while 41.7 percent of the individuals were from the joint family. This shows that hemorrhoids are more widespread in persons who live in nuclear families as compared to those who live in joint families. The reason for this can be the more consumption of junk foods in the nuclear families as both the husband and wife may be working and less attention may be paid to food

preparation at home. On the other hand, sharing of responsibilities, duties and spending time with the family helps to strengthen family bonds and reduces mental stress. Therefore, the occurrence of hemorrhoids is less in joint families.

#### 1.4 Marital status of the subjects

Table 1.4 gives the distribution of the subjects according to the marital status.

**Table 1.4.** Distribution of the subjects according to the marital status. ( $n = 60$ )

| Marital Status | Number | Percentage |
|----------------|--------|------------|
| Married        | 40     | 66.7       |
| Single         | 20     | 33.4       |

The above table shows that majority of the subjects i.e. 66.7 percent were married, while 33.3 percent of the subjects were single.

#### 1.5 Educational level of the subjects

The literacy level of the subjects also affects the dietary intake and the particular habits such as personal hygiene of the subjects. Table 1.5 shows the educational level of the subjects.

**Table 1.5.** Distribution of the subjects according to the educational level. ( $n = 60$ )

| Education Level | Number | Percentage |
|-----------------|--------|------------|
| Illiterate      | 10     | 16.7       |
| High school     | 13     | 21.7       |
| Graduate        | 28     | 46.7       |
| Post-graduate   | 9      | 15         |

A close observation of the above table tells that majority of the subjects were graduates i.e. 46.7 percent, followed by the subjects who have passed the high school i.e. 21.7 percent. Only 15 percent of the subjects were illiterate whereas 16.7 percent were post-graduates.

#### 1.6 Economic Status

Income has a foremost role in determining the food intake and food habits of individuals. The data pertaining to the monthly income of the subjects is given in table 1.6.

**Table 1.6.** Distribution of the respondents according to the monthly income. ( $n = 60$ )

|           | Income per month | Number | Percentage |
|-----------|------------------|--------|------------|
| Group I   | < 5000           | 9      | 15         |
| Group II  | 5000-10000       | 8      | 13.4       |
| Group III | 10000-20000      | 26     | 43.4       |
| Group IV  | > 20000          | 17     | 28.4       |

Table 1.6 shows that the prevalence of hemorrhoids is more in the high-income groups i.e. group III and group IV (43.4% and 28.7% respectively) while it is less in the low-income groups i.e. group I and group II (13.4% and 15% respectively). This must be due to the more consumption of refined and processed foods in the high-income groups.

#### 1.7 Activity pattern of the subjects

Table 1.7 gives the distribution of the subjects according to the activity pattern.

**Table 1.7.** Distribution of the subjects according to the activity pattern. ( $n = 60$ )

| Active Pattern | Number | Percentage |
|----------------|--------|------------|
| Sedentary      | 50     | 83.4       |
| Moderate       | 10     | 16.7       |
| Heavy          | —      | —          |

Results show that majority of the subjects i.e. 83.4 percent of the subjects were following sedentary activity pattern while only 16.7 percent of the subjects followed a moderate activity pattern. None of the subjects followed a heavy activity pattern. This clearly indicates that occurrence of hemorrhoids is more dominant in people who lead a sedentary life.

## 2. Information related to the disease

The following information was collected about the disease from the subjects.

### 2.1 Family history of the disease

The history of the disease in the patient's family was obtained and is given in Table 2.1.

#### the disease ( $n = 60$ )

The above table clearly shows that hemorrhoids is not a hereditary disease as only 16.7 percent of the subjects were having a family history of hemorrhoids while 83.4 percent of the subjects had no family history of hemorrhoids. This means that the wrong eating habits and sedentary life style are major contributing factors that predispose one to hemorrhoids and heredity does not play a role in causing hemorrhoids.

### 2.2 Frequency of occurrence of hemorrhoids

How frequently the subject complains of hemorrhoids determines the severity of hemorrhoids. The frequency of the incidence of the hemorrhoids in the subject is given in Table 2.1.

**Table 2.1.** Distribution according to the number of the subjects who had family history of

| Family history of the disease | Number | Percentage |
|-------------------------------|--------|------------|
| Yes                           | 10     | 16.7       |
| No                            | 50     | 83.4       |

**Table 2.2.** Distribution of the subjects according to the frequency of occurrence of hemorrhoids ( $n = 60$ )

| Frequency of occurrence of hemorrhoids | Number | Percentage |
|----------------------------------------|--------|------------|
| Very frequently                        | 35     | 58.4       |
| Less frequently                        | 25     | 41.7       |

Table 2.2 shows that out of 60 respondents surveyed 58.4 percent complained of very frequent incidence of hemorrhoids whereas 41.7 percent of the subjects reported less frequent incidence of the disease.

### 2.3 Duration of the disease

The length of time for which hemorrhoids remains is also an important indicator of the severity of the problem. Table 2.3 shows the duration for which the problem remains.

**Table 2.3.** Distribution of the subjects with regard to the duration of the disease ( $n = 60$ )

| Duration of the disease | Number | Percentage |
|-------------------------|--------|------------|
| Chronic                 | 24     | 40         |
| Acute                   | 36     | 60         |

The above table shows that majority of the subjects i.e. 60 percent had acute (4-5 days) of hemorrhoids whereas 40 percent of the subjects had very chronic of the disease (15 days - months).

### 2.4 Time spent for bowel evacuation

Table 2.4 shows the length of time spent by the subjects in the toilet for bowel evacuation.

**Table 2.4.** Distribution of the subjects according to the time spent for the bowel evacuation. ( $n = 60$ )

| Time spent for bowel evacuation | Number | Percentage |
|---------------------------------|--------|------------|
| < 10 minutes                    | 22     | 36.7       |

(continued on next page)

| Time spent for bowel evacuation | Number | Percentage |
|---------------------------------|--------|------------|
| About 20 minutes                | 27     | 45         |
| About 30 minutes                | 9      | 15         |
| > 30 minutes                    | 2      | 3.4        |

Results of the current study indicate that 45 percent of the subjects spent about 20 minutes in the toilet for bowel evacuation followed by 36.7 percent of the subjects who spent less than 10 minutes in the toilet and 15 percent of the subjects who spent about 30 minutes in the toilet. Only two of the subjects out of 60 spent more than 30 minutes in the toilet.

## 2.5 Feeling of incomplete bowel evacuation:

Table 2.5 shows the number of the subjects who often felt that they have not emptied their bowel completely after passing the stool.

**Table 2.5.** Distribution of the subjects according to how they feel after bowel evacuation ( $n = 60$ )

| Feeling of incomplete bowel evacuation | Number | Percentage |
|----------------------------------------|--------|------------|
| Yes                                    | 40     | 66.7       |
| No                                     | 20     | 33.4       |

Table 2.5 shows that majority of the subjects i.e. 66.7 percent felt that they have not completely emptied their bowel after passing the stool while 33.4 percent of the subjects felt relieved after passing the stools.

## 2.6 Painful Defecation

Table 2.6 depicts the number of subjects who felt pain while passing the stools.

**Table 2.6.** Distribution of the subjects according to any pain felt while passing stools. ( $n = 60$ )

| Painful Defecation | Number | Percentage |
|--------------------|--------|------------|
| Yes                | 30     | 50         |
| No                 | 30     | 50         |

Out of the total 60 subjects surveyed, 50 percent of the subjects felt pain while passing stools, while 50 percent of the subjects did not complain of any pain while passing the stools.

## 2.7 Rectal Bleeding

Rectal bleeding during hemorrhoids can be caused due to the presence of any of the problems such as painful fissures, constipation. Table 2.7 shows the number of the subjects who complained of rectal bleeding.

**Table 2.7.** Distribution of the subjects according to the occurrence of rectal bleeding ( $n = 60$ )

| Rectal bleeding | Number | Percentage |
|-----------------|--------|------------|
| Present         | 14     | 23.4       |
| Absent          | 46     | 76.7       |

The results show that majority of the subjects i.e. 76.7 percent did not complain of any rectal bleeding while 23.4 percent of the subjects suffered from this problem.

## 2.8 Effect of hemorrhoids on appetite:

Retention of the feces in the colon for an extended period can sometimes lead to the loss of appetites. Table 2.8 shows the number of subjects who complained of loss of appetite due to hemorrhoids.

**Table 2.8.** Distribution of the subjects according to the effect of hemorrhoids on the appetite ( $n = 60$ )

| Loss of appetite | Number | Percentage |
|------------------|--------|------------|
| Yes              | 36     | 60         |
| No               | 24     | 40         |

The above table shows that the majority of the subjects i.e. 60 percent reported loss of appetite due to hemorrhoids while in 40 percent of the subjects the appetite was not affected due to hemorrhoids.

**2.9 Use of laxatives:** Table 2.9 shows the number of the subjects who use laxatives to relieve hemorrhoids.

**Table 2.9.** Distribution of the subjects according to the intake of laxatives ( $n = 60$ )

| Use laxatives | Number | Percentage |
|---------------|--------|------------|
| Yes           | 32     | 53.4       |
| No            | 28     | 46.7       |

Majority of the subjects i.e. 53.4 percent were taking laxatives for relieving hemorrhoids, while 46.7 percent of the subjects were not taking any kind of bulking agents for relieving hemorrhoids.

## 2.10 Need of laxatives to pass stools:

Continuous and excessive use of laxatives over a long period of time leads to the damage of the nerves and the muscles of the colon thus causing hemorrhoids which is chronic in nature. Table 2.10 depicts the number of the subjects who always felt the need of laxatives to pass stools.

**Table 2.10.** Distribution of the subjects according to the need of laxatives for passing stools ( $n = 60$ )

| Need of laxatives | Number | Percentage |
|-------------------|--------|------------|
| Always            | 20     | 33.4       |
| Not always        | 40     | 66.7       |

Results of the present study show that majority of the subjects i.e. 66.7 percent did not always feel the need of laxatives to pass the stools whereas 33.4 percent of the subjects reported that they always wanted laxatives to pass stools.

## 2.11 Regularity in attending to the call of nature:

Table 2.11 depicts the number of the subjects who often neglect the urge to defecate and have no regularity in attending to the call of nature.

**Table 2.11.** Distribution of the subjects according to their regularity in attending to the call of nature ( $n = 60$ )

| Neglect the urge to defecate | Number | Percentage |
|------------------------------|--------|------------|
| Yes                          | 22     | 36.7       |
| No                           | 38     | 63.4       |

The results show that majority of the subjects i.e. 63.4 percent regularly attend to the call of nature while 36.7 percent of the subjects often neglect the urge to defecate.

## 2.12 Psychological stress

Stress is one of the contributory factors in causing hemorrhoids. Table 2.12 shows the number of subjects who often remain tense.

**Table 2.12.** Distribution of the subjects according to the psychological stress level ( $n = 60$ )

| Often remain tense | Number | Percentage |
|--------------------|--------|------------|
| Yes                | 34     | 56.7       |
| No                 | 26     | 43.4       |

Out of the 60 subjects surveyed, majority of the subjects i.e. 56.7 percent reported that they often remained tense at work place as well as at home. This shows that their psychological stress level is high whereas the other 43.4 percent of the subjects reported that they remain relaxed without any psychological stress.

### 2.13 Consultation with the Physician

Table 2.13 gives the distribution according to the number of the subjects who have consulted the physician regarding the problem of hemorrhoids.

**Table 2.13.** Distribution according to the number of the subject who have consulted the physician ( $n = 60$ )

| Consulted the physician | Number | Percentage |
|-------------------------|--------|------------|
| Yes                     | 15     | 25         |
| No                      | 45     | 75         |

Table 2.13 shows that most of the subjects i.e. 75 percent had not consulted the physician regarding the problem of hemorrhoids and only 25 percent of the subjects had consulted the physician regarding the problem and its treatment.

### 2.14 Physical Activity

Exercise and increased physical activity play a major role in preventing and curing constipation. Table 2.14 depicts the number of the subjects who exercised daily and the time they spent in exercising.

**Table 2.14.** Distribution of the subjects according to their regularity in exercising and the time they spend in exercising. ( $n = 60$ )

| Exercise daily  | Number | Percentage |
|-----------------|--------|------------|
| 30 minutes      | 15     | 25         |
| 1 Hour          | 6      | 10         |
| 2 Hour          | 1      | 1.7        |
| Do not exercise | 38     | 63.4       |

The above table clearly shows that 25 percent of the subjects do exercises daily for 30 minutes followed by 10 percent of the subjects who exercised daily for one hour and 1.7 percent of the subjects who exercised daily for 2 hours. Majority of the subjects i.e. 63.4 percent were not indulged in any extra physical activity.

2.15 Diseases the subjects were suffering from besides hemorrhoids Besides hemorrhoids patients were suffering from painful fissures and constipation, colon cancer, stricture of the colon, hypothyroidism, arthritis and diabetes mellitus. Table 2.15 depicts the number of patients who suffer from diseases other than hemorrhoids.

**Table 2.15.** Distribution of the subjects with regard to any disease they suffer from besides hemorrhoids. ( $n = 60$ )

| Diseases               | Number | Percentage |
|------------------------|--------|------------|
| Constipation           | 40     | 66.7       |
| Colon Cancer           | -      | -          |
| Hypothyroidism         | 2      | 3.4        |
| Arthritis              | 5      | 8.4        |
| Stricture of the colon | -      | -          |
| Diabetes mellitus      | 3      | 5          |

Results of the current study reveal that out of the total 60 subjects surveyed, 66.7 percent of the subjects were suffering from constipation, 3.4 percent of the subjects complained of hypothyroidism; 8.4 percent of the subjects were suffering from arthritis and 5 percent of the subjects were suffering from diabetes.

### 3 Information related to the food habits of the subjects

The following information was collected about the food habits of the subjects

**3.1 Food habits of the subjects:** The subjects were divided into three categories according to their food habits as shown in table 3.1.

**Table 3.1.** Distribution of the subjects according to their food habits

( $n = 60$ )

| Food habits      | Number | Percentage |
|------------------|--------|------------|
| Lacto-vegetarian | 24     | 40         |
| Ova-vegetarian   | 10     | 16         |
| Non-vegetarian   | 26     | 43.4       |

It can be observed from the table that greater number of the subjects were non-vegetarians i.e. 43.4 percent and 40 percent of the subjects were lacto-vegetarians while only 16 percent of the subjects were ova-vegetarians. This clearly shows that the incidence of hemorrhoids is higher in non-vegetarians as animal foods lack the essential dietary fiber.

3.2 Number of meals taken per day:

Table 3.2 gives the distribution of the subjects according to the number of meals they take in a day.

**Table 3.2.** Distribution of the subjects according to the number of meals taken per day ( $n = 60$ ).

| Number of meals per day | Number | Percentage |
|-------------------------|--------|------------|
| Two                     | 21     | 35         |
| Three                   | 36     | 60         |
| Four                    | 3      | 5          |

The results show that majority of the subjects i.e. 60 percent took three meals per day followed by 35 percent of the subjects who took two meals per day while only 3 of the subjects out of 60, took four meals per day.

### 3.3 Regularity in taking the Meals

Table 3.3 gives the distribution of the subjects according to their regularity in having their meals.

**Table 3.3.** Distribution of the subjects according to the regularity in taking the meals ( $n = 60$ )

| Meal Pattern | Number | Percentage |
|--------------|--------|------------|
| Regular      | 40     | 66.7       |
| Irregular    | 20     | 33.4       |

The above table shows that majority of the subjects i.e. 66.7 percent were taking their meals regularly while 33.4 percent of the subject did not take the meals frequently.

**3.4 Salad consumption:** Raw vegetables consumed as salads are also a good source of dietary fiber and thus can be of great help in preventing and curing hemorrhoids. Table 3.4 gives the details about the salad consumption by the subjects.

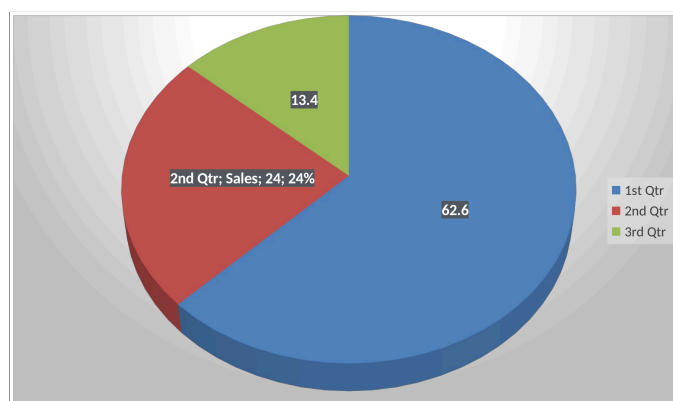


**Figure 1.** Distribution of the subjects according to the salad consumption ( $n = 60$ )

The results of current study show that only 13.4 percent of the subjects consumed the salads daily; 62.6 percent of the subjects had an ir

regular intake of the salads while 24 percent of the subjects rarely consumed any salads.

### 3.5 Consumption of wheat flour with / without the bran

Wheat bran is the best-known source of dietary fiber and has a marked laxative effect. Thus, wheat bran is brilliant in preventing and curing hemorrhoids.

**Table 3.5.** Distribution of the subjects according to the consumption of the wheat flour with or without the bran ( $n = 60$ )

**Table 3.5.** Gives the spreading of the subjects with regard to whether they sieve the flour before making chapattis or not.

| Sieve the flour | Number | Percentage |
|-----------------|--------|------------|
| Yes             | 50     | 83.4       |
| No              | 10     | 16.7       |

The above table indicates that majority of the subjects i.e. 83.4 percent sieved the wheat flour before making chapattis and only 16.7 percent of the subjects did not sieve the wheat flour before making the chapattis.

### 3.6 Fruit consumption:

Along with fiber, fruits and vegetables also contain certain natural antioxidants which can prevent hemorrhoids. Table 3.6 gives the distribution of the subjects according to the fruit consumption.

**Table 3.6.** Distribution of the subjects according to the fruit consumption ( $n = 60$ )

| Fruit Consumption | Number | Percentage |
|-------------------|--------|------------|
| Daily             | 10     | 16.7       |
| Alternate days    | 14     | 23.4       |
| Sometimes         | 20     | 33.4       |
| Rarely            | 16     | 26.7       |

Table 3.6 shows that 16.7 percent of the subjects consumed the fruits daily and 23.4 percent of the subjects consumed the fruits on alternate days. Out of the 60 subject's 33.4 percent had an irregular intake of fruits and 26.7 percent of the subjects rarely consumed fruits.

### 3.7 Form in which fruit is consumed:

Table 3.7 gives the distribution of the subjects according to the form in which they consume the fruit i.e.:-

- Whole of the fruit or making juice out of it.
- With or without the skin of the fruit as some of the fruits like apple, pears, and plums can be consumed along with the skin.

**Table 3.7.** (A) Distribution of the subjects according to the form in which they consume the fruit. ( $n = 60$ )

| A | Form of the fruit | Number | Percentage |
|---|-------------------|--------|------------|
|   | Whole fruit       | 45     | 75         |
|   | Fruit juice       | 15     | 25         |

**Table 3.7.** (B) Distribution of the subjects according to the form in which they consume the fruit. ( $n = 60$ )

**Table 3.7.** (A) shows that 76.7 percent of the subjects like to consume whole of the fruit whereas 23.3 percent of the subjects prefer taking fruit juice.

| B | Form of the fruit | Number | Percentage |
|---|-------------------|--------|------------|
|   | With the skin     | 34     | 56.7       |
|   | Without the skin  | 26     | 43.4       |

**Table 3.7.** (B) shows that 56.6 percent of the subjects consume the fruits like apple, plums, pears, etc. with their skin while 43.4 percent of the subjects consume these fruits without skin.

### 3.8 Fluid consumption

When increasing amount of fiber are used, it is suggested that larger amount of water should be consumed as it prevents hardening of the stools and blockage of intestine. For fiber to work efficiently more fluid has to be taken. Drinking 3½ to 4 liters of water per day along with increased intake of dietary fiber proves to be very useful in curing hemorrhoids. Table 3.8 gives the distribution of the subjects according to their fluid intake.

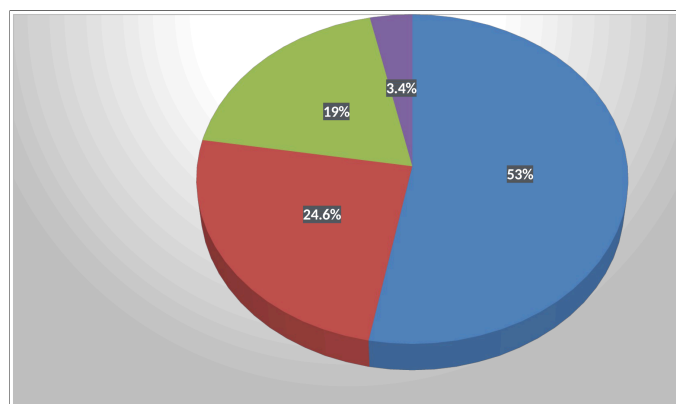


**Figure 2.** Distribution of the subjects according to their fluid intake ( $n = 60$ )

The results show that 53 percent of the subjects consumed 10-14 glasses of water per day; 24.6 percent of the subjects consumed 7-10 glasses of water per day; 19 percent of the subjects consumed 4-7 glasses of water per day and only 1.4 percent of the subjects consumed 2-4 glasses per day. This clearly shows that less water intake or less fluid intake is a major contributory factor in causing hemorrhoids.

### Discussion

Among hemorrhoid sixty respondents selected for the study were in the age group of 20-80 years. Distribution of the patients according to the sex exposes that majority of the subjects suffering from hemorrhoids were females i.e. 68.4 percent, while only 31.7 percent of the subjects were males. Thus, it is apparent that occurrence of hemorrhoids is higher in females than males (Table 1.1 and 1.2). The finding of the current study reflect those of G. G. Ravindranath *et al.* (2018) [16] study, who takes 63 hemorrhoid affected patients, 42 (66.67%) were males and 21 (33.33%) were females. The most common age group affected was with hemorrhoids was below 40 years of age.

It can be observed from the (Table 3.1) that greater number of the subjects were non-vegetarians i.e. 43.4 percent and 40 percent of the subjects were lacto-vegetarians while only 16 percent of the subjects were ova-vegetarians. This clearly shows that the incidence of hemorrhoids is higher in non-vegetarians as animal foods lack the essential dietary fiber. The above (Table 2.14) clearly shows that 25 percent of the subjects do exercises daily for 30 minutes followed by 10 percent of the subjects who exercised daily for one hour and 1.7 percent of the subjects who exercised daily for 2 hours. Majority of the subjects i.e. 63.4 percent were not indulged in any extra physical activity. The current study's findings support those of G. G. Ravindranath *et al.* (2018) [16] study, Less than 40% of the patients were vegetarians, with more than half of the patients having a mixed diet. Very few patients did exercise on a regular basis, While Rajesh Kumar Badal *et al.* (2019) [17] shows that 45 patients were on vegetarian diet while 42 were on mixed diet. The difference was non-significant ( $P > 0.05$ ). 15 were doing exercise while 72 do not. The difference was significant ( $P < 0.05$ ).

The above (Table 2.1) clearly shows that hemorrhoids is not a hereditary disease as only 16.7 percent of the subjects were having a family history of hemorrhoids while 83.4 percent of the subjects had no family history of hemorrhoids. A close observation of the above (Table

1.5) tells that majority of the subjects were graduates i.e. 46.7 percent, followed by the subjects who have passed the high school i.e. 21.7 percent. Only 15 percent of the subjects were illiterate whereas 16.7 percent were post-graduates. Results of the current study reveal in (Table 2.15) that out of the total 60 subjects surveyed, 66.7 percent of the subjects were suffering from constipation, 3.4 percent of the subjects complained of hypothyroidism; 8.4 percent of the subjects were suffering from arthritis and 5 percent of the subjects were suffering from diabetes. Similarly of G. G. Ravindranath *et al.* (2018) [16] study more number of women history of hemorrhoids in their family (47.6%), while the history in the males was only 26.2%. Most of the men had an educational background of at least till high school while most of the women were uneducated. Straining and constipation was seen in majority of the patients while many of them also had chronic cough.

In (Table 2.6) Out of the total 60 subjects, 50 percent of the subjects felt pain while passing stools, while 50 percent of the subjects did not complain of any pain while passing the stools. The (Table 2.7) results show that majority of the subjects i.e. 76.7 percent did not complain of any rectal bleeding while 23.4 percent of the subjects suffered from this problem. Similarly (Malviya *et al.*, 2019) [18] most common symptoms were bleeding per rectum (67.5%). Other symptoms were pain during defecation (53.5%), pruritus ani (37.2%), discharge (26.0%), prolapsed swelling (25.1%) and soiling (9.3%)

## Conclusion

Hemorrhoids are among the most prevalent conditions seen in individuals under 40, particularly in those who are under stress. To prevent this disease, a healthy diet that includes enough amounts of fiber and less spice is crucial. In order for these individuals to alter their lifestyle and take the required precautions to prevent needless complications, appropriate education must be provided. Symptomatic hemorrhoids are a frequent benign condition that is typically encountered in people who have one or more risk factors, such as obesity, poor eating habits, persistent constipation, or lack of physical activity. Therefore, the patients should receive education on how to alter their eating habits, up their daily physical activity, and avoid constipation.

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