



# A Mixed Method Approach to Explore the Dietary Pattern and To Assess the Effectiveness of Nutri Briefing Program on Knowledge And Eating Attitude Regarding The Dietary Practices Among Transgender Women Residing In Coimbatore District

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## Abstract:

**Aim & Objective:** To assess the effectiveness of Nutri Briefing Program on knowledge and eating attitude regarding healthy dietary practices among Transgender women residing in Goundampalayam area of Coimbatore district.

**Methodology:** A mixed method approach carried in two phases. Initially started with quantitative using snowball sampling technique with 60 Transgender women to assess the effectiveness of Nutri Briefing Program on knowledge and eating attitude regarding healthy dietary practices followed by which the qualitative phase using judgmental sampling among 5 Transgender women was explored about their dietary practices. The assessment of demographic variables and knowledge with self structured questionnaire, dietary pattern with food frequency and 24 hours dietary recall, nutritional status was elicited with anthropometric measurements, food insecurity using modified-4D FIS scale, and eating attitude using EAT-26 scale was done among the Transgender women.

**Result:** The study revealed that the calculated "t" value for the pre and post test level of knowledge was  $t = 23.880$  which is highly significant and for the level of eating attitude with statistically significant  $t = 12.894$  at  $p < 0.001$  level which indicates that nutrition education was highly effective in enhancing the knowledge and eating attitude of Transgender women towards the concept of healthy dietary practices. The qualitative study revealed that the Transgender women was identified with poor dietary practices due to work pattern, peer group influences, food preferences, economical issues was overwhelmed in food insecurity.

**Conclusion:** The study helped to enhance the knowledge and eating attitude regarding healthy dietary practices among Transgender women. The study also identified the factors involved in causing poor dietary practices among them.

**Key Words:** Transgender women, Nutri Briefing program, Knowledge and eating attitude, dietary practices, eating disorders, food insecurity.

## 1. INTRODUCTION :

Gender identity is the innate knowledge of who a person is. Transgender Women who are currently living as woman but was assigned as male gender at birth.(1) In the areas of public and private sectors, medical care, and so on, Transgender women are facing discrimination which makes them feel invisible at many circumstances which in other way lead to unhealthy dietary practices.(2) High levels of lifestyle diseases risk factors among Transgender women in south India indicated because of alcohol use, tobacco use, physical inactivity, obesity, unhealthy diet, hypertension, and



self-reported diabetes mellitus (DM). The high prevalence of the certain risk factors was seen among the Transgender women community compared to the general population. (3) Both communicable and non-communicable diseases are prevalent among them especially because of their work pattern. (4) Nutrition education programs will help them to know about the healthy diet and to change or correct their social norms and dietary practices and also to adopt healthy food choice in prevention of lifestyle diseases. (5)

### 1.1. STATEMENT OF THE PROBLEM

A mixed method approach to explore the Dietary Pattern and to assess the effectiveness of Nutri Briefing Program (NBP) on knowledge and eating attitude regarding dietary practices among Transgender women residing in Goundampalayam areas of Coimbatore District.

### 1.2. OBJECTIVES

#### Quantitative Approach:

- To assess the socio demographic variables, dietary pattern through Food frequency questionnaire and 24 Hours dietary recall and also to determine the nutritional status of Transgender women.
- To conduct and assess the effectiveness of Nutri Briefing Program (NBP) on knowledge and eating attitude regarding healthy dietary practices among Transgender Women.
- To elicit and associate the selected demographic variables on knowledge and eating attitude regarding healthy dietary practices among Transgender Women.

#### Qualitative Approach:

##### Purposes

- To explore the dietary pattern among Transgender women.
- To draw out the factors involved in dietary practices and Health status of Transgender women.
- To identify the poor dietary practices and its causes.
- To assess the food insecurity among Transgender women.

### 1.3 ALTERNATIVE HYPOTHESES

**AH<sub>1</sub>:** There will be a significant difference between the pretest and post-test level of knowledge and eating attitude regarding dietary practices among Transgender women residing at Coimbatore district at  $p < 0.05$  level.

**AH<sub>2</sub>:** There will be a significant association of selected demographic variables with the mean differed level of knowledge score and eating attitude regarding dietary practices among Transgender women at  $p < 0.05$  level.

## 2. MATERIALS AND METHODS :

A mixed method approach carried in two phases. Initially started with quantitative using snowball sampling technique with 60 Transgender women to assess the effectiveness of Nutri Briefing Program on knowledge and eating attitude regarding healthy dietary practices followed by which the qualitative phase using judgmental sampling among 5 Transgender women was explored about their dietary practices.

The study was conducted at Goundampalayam area of Coimbatore district. The study samples are Transgender women of 20-60 years of age (who fulfilled the inclusion criteria).

The tool consisted of two parts i.e., data collection tool and intervention tool.

PART A consist of the assessment of demographic variables and knowledge with self structured questionnaire, dietary pattern with food frequency and 24 hours dietary recall, nutritional status was elicited with anthropometric measurements, food insecurity using modified-4D FIS scale, and eating attitude using EAT-26 scale was done among the Transgender women.

### PART A

#### For quantitative:

##### Table 1: Assessment of Knowledge



S.No.	Content	No: of questions
1	Balanced diet	4
2	Lifestyle diseases	2
3	Healthy food choice and lifestyle practices	8
4	Food safety practices	3
	<b>Total</b>	<b>17</b>

**Scoring key of knowledge:** The correct answer was given '1' marks and the wrong answer was given '0' mark. The raw score was converted into percentage to interpret the level of Knowledge

**Table 2: Scoring interpretations of knowledge:**

Scores	Level of knowledge
≤ 50%	Inadequate knowledge
51-74%	Moderately adequate knowledge
75-100%	Adequate knowledge

**Table 3: Assessment of eating attitude scale regarding dietary practices**

The 6 point EAT-26 scale consisting of 26 statements was used to assess the eating attitude regarding the dietary practices among the Transgender women. The Eating Attitude Test (EAT-26) is probably the most widely used standardized measure of symptoms and concerns characteristic of eating disorders (Gamer & Garfinkel, 1979; Bohr, & Garfinkel, 1982). The EAT-26 scales has three subscales and they are 1) dieting 2) bulimia and food preoccupation and 3) oral control.(6) The questions which belong to the three subscales are:

Dieting subscale items	1,6,7,10,11,12,14,16,17,22,23,24,26
Bulimia & Food Preoccupation scale items	3,4,9,18,21,25
Oral control subscale items	2,5,8,13,15,19,20

**Table 4: Scoring key of EAT-26 scale:**

Questions	Always	Usually	Often	Sometimes	Rarely	Never
Score for questions 1-25	3	2	1	0	0	0
Score for question # 26	0	0	0	1	2	3

**Table 5: Scoring Interpretations of EAT-26 scale:**

Score	Interpretation
Scored 20 or more	Need for further investigation by qualified personnel about the three subscale items
Scored less than 20	Can still be consistent with serious eating problems

For qualitative:

**SECTION A: Demographic information** (semi-structured questionnaire)



**SECTION B: Interview guide questionnaire:** This section of the interview guide in qualitative study involves eliciting the information in 4 parts.

**Table 6: Interview guide questionnaire**

<b>Part A</b>	Information on dietary practices (semi-structured questionnaire)	<b>7 questions</b>
<b>Part B</b>	Factors involved in dietary practices (semi-structured questionnaire)	<b>4 questions</b>
<b>Part C</b>	Causes of poor dietary practices (semi-structured questionnaire)	<b>7 questions</b>
<b>Part D</b>	Food Insecurity among Transgender women (Modified Four Domain-Food Insecurity Scale)	<b>6 questions</b>

The Modified Four Domain Food Insecurity Scale is a modified form of 4D-FIS. The 4D-FIS covers the four domains of the food access dimension of food insecurity: quantitative (3 items), qualitative (6 items), psychological (3 items), and social (4 items). But in the modified 4D-FIS only the qualitative questions are provided and response options are often, sometimes, rarely and never. (7)

## PART II-

The Nutri Briefing Program is the intervention tool which includes the following.

- It is a **Power Point Presentation** regarding healthy dietary practices for 20 minutes which includes
  - ◆ Importance of balanced diet
  - ◆ Causes of poor dietary practices
  - ◆ Ill effects of poor dietary habits on health
  - ◆ Ways to promote healthy dietary practices
    - Eat well plate
    - Healthy food choices
    - Lifestyle modification
    - Food safety practices
- **Demonstration** of sample balanced menu plan for 10 minutes.
- Reinforcement of healthy dietary practices with pamphlets.

The post test assessment on the level of knowledge and eating attitude regarding healthy dietary practices was done using the same self structured knowledge questionnaire and EAT-26 scale to find out the effectiveness of Nutri Briefing Program.

The same data collection procedure with the same data collection tool was carried out among the Transgender women. There was no attrition in the setting area. The data obtained was analyzed during descriptive and inferential statistics to identify the effectiveness of the intervention program.

## Ethical consideration

Ethical clearance from the Institutional Ethical Committee, formal permission from the head of the institution was obtained from Ganga Institute of Health Sciences to conduct the study in the setting area. Obtained consent from the In -charge Head of the respective Transgender community from Coodu Association, and from each individual participant.

After brief information about self, the purpose of the study was explained to the Transgender Women. Privacy was provided and confidentiality regarding the data was assured to the Transgender Women so as to get their co-operation in the study. Also consent for recording in qualitative data was obtained.

## Data analysis

Quantitatively collected data analyzed by using the descriptive and inferential statistics. Frequency and percentage distribution used to analyze the demographic variables, dietary pattern, nutritional status, pre-test and post test level of knowledge and eating attitude. Mean and standard deviation to analyze the level of knowledge and eating attitude. Paired t test is used to analyze the effectiveness of Nutri Briefing Program on the knowledge and eating attitude among the Transgender women. One way ANOVA/unpaired t test is used for the association of mean differed



knowledge score and mean differed attitude score regarding dietary practices among Transgender women with selected demographic variables.

The qualitative study findings were analyzed by means of Giorgi's five stage analysis method.

### 3. RESULT :

The results of the **demographic variables** assessment explicit that many of the Transgender women (68.3%) are between the age group of 20-30 years of age, 46.7% had completed their high school level and most predominantly (41.7%) they are prostitutes who skip the meals usually. Most of the participants (85%) have their monthly income by over 6,175-18,496 which means they are of upper lower class. Many of the participants (53.4%) are doing a moderate level of activity and most predominantly (50%) they sleep for six hours. All the participants are watching television for 3 hours. Half of the participants are engaged in watching mobile/gadget for 3-5 hours and 5-7 hours respectively. Most of the participants (51.7%) are dining out 4-6 times a week. Mostly (95%) they belong to the non-vegetarian group and do not follow any diet restrictions. Most of the participants (85%) do have good appetite which means they are able to eat and enjoy moderate sized meals without any difficulties. Most participants have the habit of eating snacks and have the habit of taking biscuits, breads, crackers and some have the habit of having hot chips and popcorn. On the frequency of snacking, the majority of participants regularly have the habit of snacking. Majority of the participants drink water between meals.

The dietary pattern assessment through a **food frequency** questionnaire results that rice was the staple food for all the participants. Wheat was consumed weekly once by the majority of the participants. Other cereal foods are consumed occasionally and rarely. Black gram dhal was the stable pulse for the majority of the participants. Most of the participants had curry leaves, coriander leaves daily. Regarding roots and tubers, onion and potato daily. On other vegetables tomato is consumed daily by the majority of the participants. The intake of fruits is very low among the participants. Regarding meat and meat products egg is consumed weekly twice by the majority of the participants and broiler chicken is consumed weekly once by the majority of the participants. Buttermilk is consumed daily by the majority of the participants. The consumption of the dry fruits, nuts and oilseeds are very low among the Transgender women. Most of the participants have used vanaspathi and palm oil. Majority of the participants have consumed tea daily.

The dietary pattern assessment through **24 Hour dietary recall** results that the energy intake score of all the participants was 1141.17Kcal. Protein intake was 36.04g. Fiber intake was 3.5g. Fat was 13.0g. Calcium was taken 172.73mg. The carbohydrate intake was 214.57g. And the intake level of the participants was compared with the normal moderate women RDA. When the RDA is compared with the 24 hour dietary recall of the participants the intake level of total calories are very low. The protein intake which is very important for the transgender community that helps in quick recovery from the reconstructive procedures and other related surgeries was seem very low among the participants when compared with normal RDA of moderate adult women. The fat intake was seen low among the participants. The fiber intake was drastically very low compared to RDA of moderate adult women since they are not much knowledgeable about lifestyle diseases. The calcium intake was also very low. The carbohydrate intake was high among the participants hence proves that maximum of their total calories are satisfied from the carbohydrate intake.

The assessments of **anthropometric measurements** of Transgender women who are residing in Goundampalyam area of Coimbatore district are analyzed. The Mean and S.D. values of weight were 62.23 and 8.08; Mean and S.D. values of height were 161.25 and 5.61; Mean and S.D. values of BMI were 23.47 and 2.27; Mean and S.D. values of Waist circumference were 31.89 and 4.06. Mean and S.D values of Hip circumference were 29.59 and 3.77. Mean and S.D values of Waist Hip Ratio were 1.08 and 0.04. Mean and S.D values of Calf circumference were 12.41 and 0.76. The reference ranges for the anthropometric assessment were taken from the Asian adult women BMI ranges.

**Clinical signs** for the assessment of nutritional deficiencies were analyzed. And the results showed that the majority of the participants had not much of the clinical signs but the majority of the participants had abdominal disorders.

### **Effectiveness of Nutri Briefing Program (NBP) on knowledge and eating attitude regarding dietary practices among Transgender women. (N = 60)**

In the pretest 68.3% of the Transgender women had inadequate knowledge and 31.7% of them had moderately adequate knowledge regarding healthy dietary practices whereas after the intervention of education program 18.3%





gained moderately adequate knowledge and 81.7% had gained adequate knowledge in the post test which depicts that Nutri Briefing Program was effective in enhancing the knowledge towards the concept of healthy dietary practices.

In the pretest 12 of the participants had scores 20 or more than 20 which means they need for further investigation from qualified personnel. After the intervention of the education program only 2 of the participants need for further investigation when assessed in the post test. Thus, the post test depicts that the Nutri Briefing Program was effective in enhancing the healthy eating attitude.

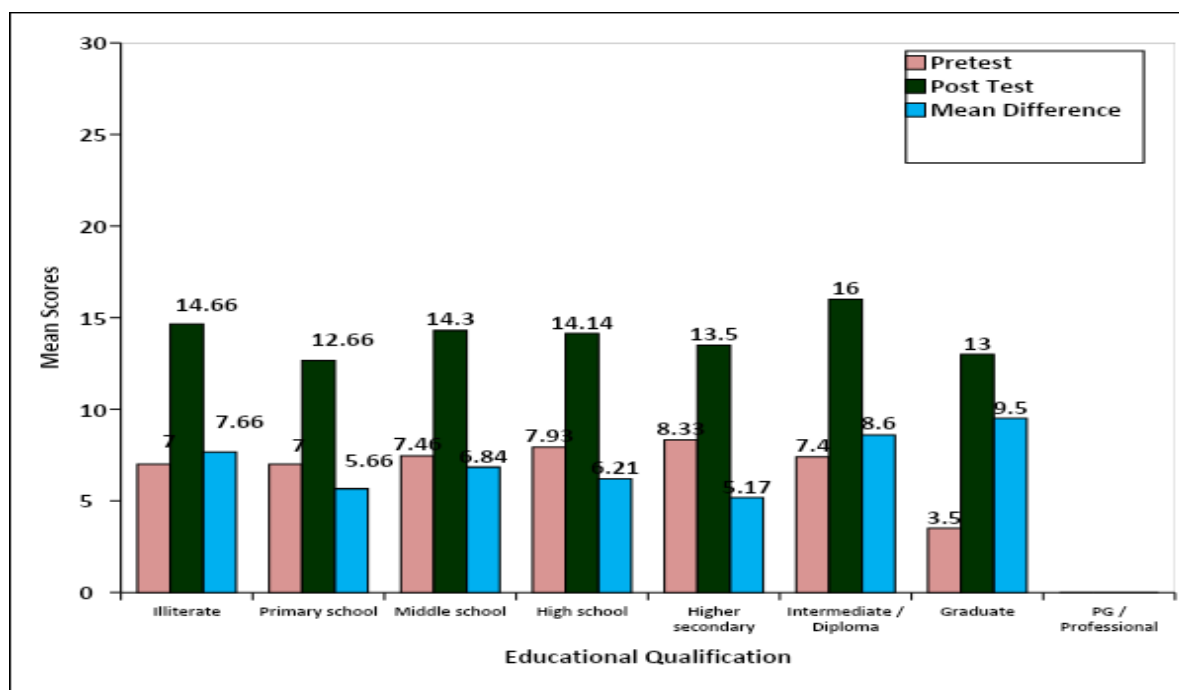
**Table 7: Effectiveness of Nutri Briefing Program (NBP) on knowledge and eating attitude regarding dietary practices among Transgender women. (N = 60)**

Variable	Test	Mean	S.D	Mean Difference	Paired 't' Test & p-value
Knowledge	Pretest	7.58	1.67	6.60	<b>t = 23.880</b> <b>p=0.0001, S***</b>
	Post Test	14.18	1.95		
Eating Attitude	Pretest	17.33	5.13	6.65	<b>t = 12.894</b> <b>p=0.0001, S***</b>
	Post Test	10.68	4.34		

\*\*\*p<0.001, S – Significant

The table 7 shows that there was significant difference between pre test and post test of knowledge whereas the calculated 't' value **t = 23.880** showed that there was a statistically significant at **p<0.001** level which indicates that nutrition education was highly effective in enhancing the knowledge of Transgender women towards the healthy dietary practices. There was significant difference between pre test and post test of eating attitude whereas the calculated 't' value **t = 12.894** showed that there was a statistically significant at **p<0.001** level which indicates that nutrition education was highly effective in enhancing the eating attitude of Transgender women towards the concept of healthy dietary practices.

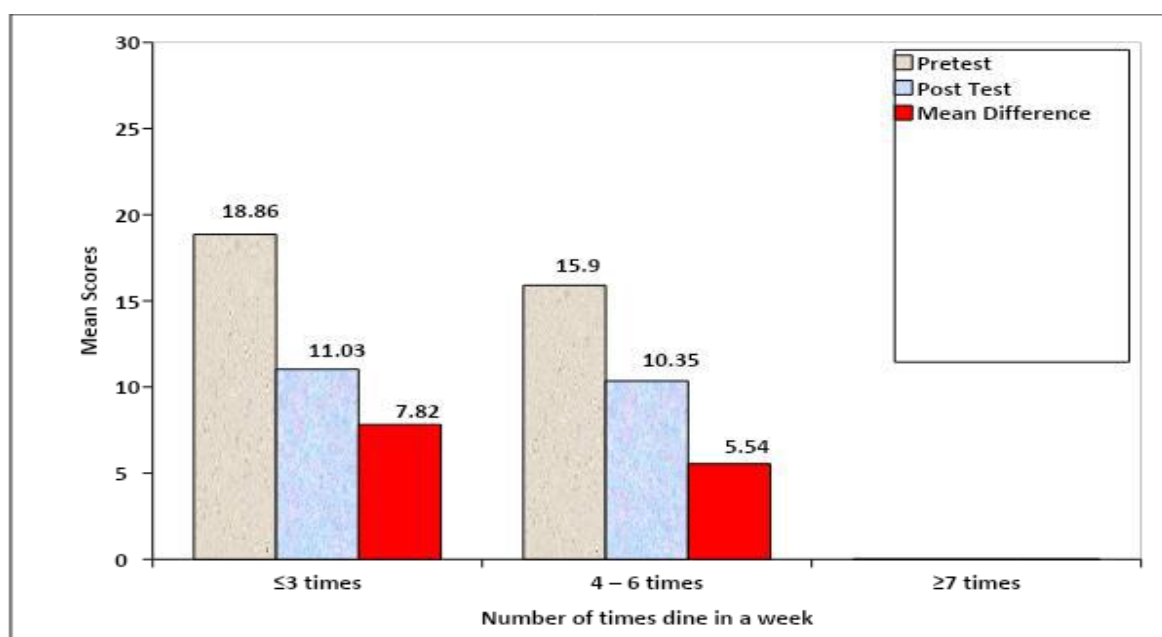
#### Association of mean differed knowledge scores regarding dietary practices among transgender women with selected demographic variables



**Figure 1:** The association of mean differed knowledge scores regarding dietary practices among transgender women with selected demographic variables and infers that there is more mean gain score (F=2.526) in knowledge with educational qualification of the transgender women.



### Association of mean differed eating attitude scores regarding dietary practices among transgender women with selected demographic variables



**Figure2:** Association of mean differed eating attitude scores regarding dietary practices among transgender women with selected demographic variables and infers that there is more mean gain score( $F=2.269$ ) in eating attitude with frequency of dining out in a week of the transgender women.

### For qualitative research approach

The exploration of information on the dietary practices and food insecurity among Transgender women by using ethnographic approach, themes were derived as information on dietary practices, factors involved in dietary practices, causes of poor dietary practices and food insecurity and clustered themes by narration, themes were coded into many sub-themes of work pattern, meal pattern, skipping meals, food preferences, diet counseling and supplements under the information on dietary practices. Socio cultural dietary practices. Peer group influences, physical and mental conditions, religious and economical issues under factors involved in dietary practices. Consumption of fast foods, junk foods, processed food and beverages. Alcohol and tobacco consumption, food allergies and others, food safety practices, work schedule, food preferences, peer group influences, emotional factors, physical appearance and quality of sleep under poor dietary practices. Economical issues and inadequate food and loss of appetite under food insecurity among Transgender women.

### 4. DISCUSSION:

The study revealed that the calculated 't' value for the pre and post test level of knowledge was  $t = 23.880$  which is highly significant and for the level of eating attitude with statistically significant  $t = 12.894$  at  $p < 0.001$  level which indicates that nutrition education was highly effective in enhancing the knowledge and eating attitude of Transgender women towards the concept of healthy dietary practices. The qualitative study revealed that the Transgender women was identified with poor dietary practices due to work pattern, peer group influences, food preferences, economical issues was overwhelmed in food insecurity.

### 5. LIMITATIONS:

- The researcher had difficulties in gathering the samples, identifying the residence of the study participants and the duration of study period.
- The researcher found difficulties in reviewing Tamil Nadu and Indian related literature.
- The researcher found that there is no standards of care exist to inform clinicians on nutrition assessment methods for transgender.



- The researcher found difficulty in framing the sample balanced menu because there is no evidence of RDA for the considered categories.
- The researcher also found difficulty in assessing the anthropometric measurements for the Transgender community because there is no evidence of standard normal anthropometric ranges for this invisible community.
- Also, the research investigator found difficult because of less standard information about the Transgender population.

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