CHAPTER

5

ETHNOBOTANICAL PRACTICES

It aimed to collect ethnobotanical data for its documentation and to know the relation of demographic variables on usage of traditional practices among the study population. The total number of mothers (N) interviewed during the study for this objective was N = 387 women. All respondents, whether users of traditional practices or non-users, were counted for socio-demographic details and their attitudes towards it.

The study area is an urban location; hence, the participants recruited for the study were of diverse socio-economic groups. The participants were not just restricted for Gujarat state but were also from other states of India. The respondents were co-operative with the study and responded well to the questions asked. The knowledge about herb was found mostly in respondents' local language.

A modified Kuppuswamy socio-economic scale was used to analyze the women's socio-economic status. It is most popular scale used in India for urban area, which accounts for education, occupation, and total monthly income of the family (Saleem & Jan 2021). As it requires regular updates, the recently updated modified scale of 2021 was used.

5.1 SOCIO-DEMOGRAPHIC CHARACTERS OF THE STUDY POPULATION

As shown in Table 2, the median age of the parturient female (N = 387) in the study population was 29 years, with a range of 20 years to 48 years.

66.67% of mothers followed the Hindu religion, followed by Muslim (15.76%), and the rest like Christian (7.24%), Sikh (4.91%), and Jain (5.43). Then birthplace was recorded as their state of India. The respondents were from India's 12 diverse states and union territories, representing 33.33% (12/36) of India's states and union territories. Among all, 67.7% of respondents were found to be born in Gujarat state, followed by Madhya Pradesh (4.95%) and Maharashtra (4.65%). With 1.29%, birthplace as West Bengal was found to be answered by the least respondents. While asking about the participants' marital status, 96.6% were found married and cohabiting with their partners. However, the rest respondents were non-cohabiting with their partner or were single (3.4%). The study found that 87.86% of respondents were living as nuclear family, followed by 8.53% in joint and 3.62% in extended families.

The domicile in the state was also studied for the population. Here, 63.3% of respondents were found residing in Gujarat state since birth, followed by 14.98%, who have been residing there for more than ten years. Looking at the education profile of the respondents, 2.84% were found illiterate. Up to higher secondary education was common in 84.5% of women, followed by graduation, post-graduated and more qualifications. Most of the studied mothers were unemployed and homemakers (85.27%). However, Employed, self-employed, and part-time women were reported as 6.72%, 4.91%, and 3.1%, respectively.

The Kuppuswamy socio-economic scale (2021) indicated that the major population studied belongs to the lower middle class, upper lower class, and lower class at 27.9%, 30.7%, and 25.32%, respectively. Upper and upper middles were represented only by 4.13% and 11.8% of women. The details of previous pregnancies are crucial to know the traditional herbal usage. Here, most of the mothers were primiparous (64.4%), followed by multiparous with two children (32.56) or more (3.10%). The regular diet of the studied mothers was vegetarian (63.56%) than non-vegetarian or mixed (36.43%). It was found that most of the respondents did not follow any dietary restrictions during pregnancy (89.66%). The study population was healthy at the interview, as 87.86% had posed no health-related issues. Rest women had diabetes, blood pressure, polycystic ovary syndrome, thyroid, obesity, and malnutrition.

The details in the table are given as the frequency of the responses recorded and their percentage to the total number of respondents.

TABLE 2: DEMOGRAPHIC CHARACTERISTICS OF THE STUDY POPULATION

Study population variable	*Frequency (N= 387)*	*Percentage (%)*
Age, Median (IQR) years	29 (20 – 48)	
Religion		
Hindu	258	66.67
Muslim	61	15.76
Christian	28	7.24
Sikh	19	4.91
Jain	21	5.43
Birthplace (state)		
Gujarat	262	67.70
Maharashtra	18	4.65
Rajasthan	13	3.36
Madhya Pradesh	19	4.91
Uttar Pradesh	12	3.10
Bihar	11	2.84
Tamil Nadu	9	2.33
Karnataka	7	1.81
Delhi	13	3.36
West Bengal	5	1.29
Andhra Pradesh	9	2.33
Kerala	9	2.33
Marital status		
Married and cohabiting	374	96.64
Married but not cohabiting	2	0.52
Single	3	0.78
Divorced or separated	3	0.78
Widowed	5	1.29
Size of family		
Nuclear	340	87.86
Joint	33	8.53
Extended	14	3.62
Time of residence in state		
By birth	245	63.30
5 years	52	13.43
10 years	32	8.26
> 10 years	58	14.98

Educational qualification		
Primary	17	4.39
Higher secondary	327	84.50
Graduation	20	5.17
Postgraduate and more	12	3.10
Illiterate	11	2.84
Occupation		
Unemployed or housewife	330	85.27
Employed	26	6.72
Self-employed	19	4.91
Part-time	12	3.10
Income group		
Low	35	9.04
Medium	333	86.05
High	19	4.91
Kuppuswamy socio-economic status (2021 scale) (Saleem & Jan, 2021)		
Upper (I)	16	4.13
Upper middle (II)	46	11.88
Lower middle (III)	108	27.90
Upper lower (IV)	119	30.74
Lower (V)	98	25.32
Parity		
One	249	64.34
Two	126	32.56
≥ Three	12	3.10
Regular diet		
Vegetarian	246	63.56
Non-vegetarian or mixed	141	36.43
Diet restrictions followed during pregnancy		
Yes	40	10.34
No	347	89.66
Presence of health problems not related to gestation		
Diabetes	9	2.33
Blood pressure	6	1.55
Polycystic ovary syndrome	4	1.03
Thyroid disease	10	2.58
Obesity	5	1.29
Malnutrition	3	0.78
More than one of the above	10	2.58
None of the above	340	87.86

5.2 ATTITUDE OF RESPONDENTS TOWARDS TRADITIONAL PRACTICES

Further, the questions were asked to know the attitude and usage of traditional practices during the gestation period. It included five test questions to classify the positive, negative, or neutral responses. Any three questions answered positively were classified as having a positive attitude. As shown in Table 3, 54 out of 387 respondents (13.96%) answered that they did not use traditional or herbal practices during gestation. However, 333/387 respondents (86.04%) agreed they had used traditional herbal practices. These two groups are treated further as users of traditional practices and non-users. 79.33% of respondents agreed that herbal drugs are cheaper, 78.29% agreed they are safe, 86.56% agreed they could be used during gestation, 86.26% agreed its more effective, and 82.43% agreed its readily available. Further, the inference could be drawn that 92.51% of mothers had a positive attitude toward herbal traditional medicines usage. However, 7.49% of women had a negative or neutral attitude toward traditional practices.

TABLE 3: DETAILS OF THE ATTITUDE TOWARDS TRADITIONAL, HERBAL PRACTICES DURING GESTATION

Attitude variable	*Frequency (N= 387)*	*Percentage (%)*
Practiced any herbal drugs during gestation		
Yes (Traditional practices user)	333	86.04
No (Traditional practices non-user)	54	13.96
Herbal drugs are cheaper		
Agree	307	79.33
Disagree	48	12.40
Unknown	32	8.27
Herbal drugs are safe		
Agree	303	78.29
Disagree	37	9.56
Unknown	47	12.14
Herbal drugs can be used in gestation		
Agree	335	86.56
Disagree	33	8.53
Unknown	19	4.91
Herbal drugs are more effective		
Agree	336	86.82
Disagree	34	8.79
Unknown	17	4.39

Herbal drugs are readily available		
Agree	319	82.43
Disagree	30	7.75
Unknown	38	9.82
Inferred attitude towards herbal drugs		
Positive	358	92.51
Negative / Neutral	29	7.49

The table representing attitude towards herbal drugs during gestation represents frequency and percentages.

5.3 TRADITIONAL PRACTICES: KNOWLEDGE AND SATISFACTION LEVEL

The questionnaire was continued for the respondents who declared that any traditional practices had been used during the gestation period (N=333). Their knowledge about herbal practices, satisfaction level, and adverse side effects (if any) were recorded, as shown in Table 4.

The majority of traditional practices user were found to be using more than one class of drugs and medicines during pregnancy (94.89%). The rest of the participants had used either unani/siddha (1.5%), ayurvedic (1.2%), or naturopathy or herbal drugs (0.9%). Further, most respondents answered that they used traditional practices almost throughout their gestation (84.08%) than 2.7% during antenatal, 3.6% during parturition, and 9.6% postpartum. When asked about known individuals using similar practices to theirs, respondents answered family members (85.29%) as the most common answer. Known individuals of distant ethnicity were least likely (1.8%) for this answer. Satisfaction level on the Likert scale was tested. Most respondents (83.18%) answered that they were very satisfied with traditional practices. 5.41% answered somewhat satisfied, 5.74% were neither satisfied nor dissatisfied, 3.9% were somewhat satisfied, and 1.8% were dissatisfied. Only 3.6% of respondents answered that side effects experienced during traditional practices used than 96.4% who had not.

5.4 BIVARIATE ANALYSIS TO PREDICT THE ASSOCIATED FACTORS OF TRADITIONAL PRACTICE

The use of traditional practices among women might depend on various associated variables. Fisher's exact test was used with contingency data for bivariate analysis to predict the variables associated with the use of traditional practices. The variables were converged to a

bivariate, as given in table 5. In analysis, the first variable was default set as a reference to calculate Odds ratios.

TABLE 4: KNOWLEDGE AND PRACTICES OF WOMEN USING HERBAL DRUGS DURING GESTATION.

Variable	*Frequency (N= 333)*	*Percentage (%)*
Class of drugs used during gestation		
Traditional/ herbal/ home remedies	3	0.90
Ayurvedic	4	1.20
Homeopathic	2	0.60
Unani/ Sidhha	5	1.50
Naturopathy	3	0.90
More than one class used	316	94.89
Period of gestation where herbal drugs are used		
Antenatal	9	2.70
Parturition	12	3.60
Postpartum	32	9.61
All the above	280	84.08
Other known individuals using similar herbal practices		
Family members	284	85.29
Members of same ethnicity	25	7.51
Members of another ethnicity	18	5.41
Ethnically distant known person	6	1.80
Level of satisfaction using herbal drugs (Likert scale)		
Very satisfied	277	83.18
somewhat satisfied	18	5.41
Neither satisfied nor dissatisfied	19	5.71
somewhat dissatisfied	13	3.90
Dissatisfied	6	1.80
Any side effects experienced while using herbal medicines		
Yes	12	3.60
No	321	96.40

Further, the odds of women born in Gujarat and being traditional practices users was 2.195 (CI 1.215 – 3.922) times more than women born outside Gujarat, with a statistically significant p-value of 0.011. Participants cohabiting with partners were shown to be more likely to be

herbal users than non-cohabiting with an odds ratio of 1.126 (CI 0.243 – 4.852) but was not statistically significant. With a significant p-value of ≤0.001, women residing in the nuclear family had 41.85 (CI 18.78 – 93.06) times the odds of being traditional practices user than women in joint and extended families.

However, the time of residence in Gujarat state by birth had non-significant odds of 1.032 (CI 0.415 – 2.424) times being herbs user. Further, women of higher secondary and above were 3.977 (CI 1.740 – 9.005) times more likely to be an herbal user than women having a primary or lower level of education (p-value 0.002). Occupation and income also play a major role in deciding attitudes toward traditional practices. The respondent being employed and using herbs was less likely than those being unemployed or housewives (OR 0.480 (0.238 – 0.978) was statistically non-significant. This suggested that unemployed women or housewives are more likely to be users.

Further, to understand the socio-economic status a modified Kuppuswamy scale (2021) was used in a bivariate format. A significantly (p-value ≤of 0.017) poor odds of 0.357 (CI 0.167 – 0.772) for middle- and high-income groups suggests that women from low-income group families are more likely to be herbal users. Respondents with up to two children have statistically non-significant odds of 2.321 (CI 0.658 – 8.186) for being herb users. Vegetarian respondents were 3.945 (CI 2.187 – 7.373) times more likely to be herb users, and it was significant (p-value ≤0.001).

Those respondents who did not follow diet restrictions were less likely to be traditional practices user, with non-significant odds of 0.611 (CI 0.261 – 1.327). It provides the likelihood of mothers being herb users if they had followed any diet restrictions during gestation. The attitude towards herbal practices can be a predictive variable for traditional herbal users. As shown in Table 5, women with a positive attitude towards traditional practices are 32.02 (CI 13.27 – 79.12) times more likely to use herbs during the pregnancy period. Moreover, this data was statistically significant, with a p-value ≤0.001.

The table suggests that religion, birthplace, family size, education, income, regular diet, and attitude toward traditional practices are statistically significant predictors of herbal use during gestation.

TABLE 5: BIVARIATE ANALYSIS FOR FACTORS PREDICTING THE USAGE OF HERBAL MEDICINES.

Variable	*Traditional practices users N = 333*	*Traditional practices non-user N = 54*	*Odds ratio OR (95% CI)*	*p-value*
Religion				
Hindu	248	10	1	
Others	85	44	12.84 (6.305-25.80)	≤0.001
Birthplace (state)				
Gujarat	234	28	1	
Other states	99	26	2.195 (1.215 – 3.922)	0.011
Marital status				
Cohabiting married	322	52	1	
Non-cohabiting	11	2	1.126 (0.243 – 4.852)	0.700 ns
Size of family				
Nuclear family	320	20	1	
Joint & extended	13	34	41.85 (18.78 – 93.06)	≤0.001
Time of residence in Gujarat state				
By birth	291	47	1	
Migrated	42	7	1.032 (0.415 – 2.424)	>0.999 ns
Education				
Higher secondary and above	315	44	1	
Primary and below	18	10	3.977 (1.740 – 9.005)	0.002
Occupation				
Employed	44	13	1	
Unemployed or housewife	289	41	0.480 (0.238 – 0.978)	0.059 ns
Income groups				
Low income	25	10	1	
Mid to high	308	44	0.357 (0.167 – 0.772)	0.017
Parity				
Up to two children	324	51	1	
More than two children	9	3	2.321 (0.658 – 8.186)	0.226 ns

Regular diet				
Vegetarian	227	19	1	
Non-vegetarian	106	35	3.945 (2.187 – 7.373)	<0.001
Diet restrictions followed during gestation				
Yes	32	8	1	
No	301	46	0.611 (0.261 – 1.327)	0.234 ns
Attitude towards traditional practices				
Positive	326	32	1	
Neutral or negative	7	22	32.02 (13.27 – 79.12)	<0.001

5.5 MULTIPLE LOGISTIC REGRESSION ANALYSIS OUTCOMES

The traditional herbal practices usage was found to be associated with multiple variables. Multiple logistic models were generated to check their association with herbal practice users. All variables found significant in bivariate analysis were used for model building, and only those found significant are presented in Table 6.

TABLE 6: MULTIVARIATE LOGISTIC REGRESSION ANALYSIS FOR PREDICTING THE FACTORS ASSOCIATED WITH TRADITIONAL PRACTICES USAGE.

Model	*Variable*	*Odds ratio*	*95% CI*	*p-value*
Traditional practice user ~ Marital status + Size of Family				
	Intercept	16.00	10.47 to 25.97	≤0.001
	Marital status (non-cohabiting)	88.00	13.88 to 989.9	≤0.001
	Size of family (joint & extended)	0.003	0.0006 to 0.014	≤0.001
Traditional practice user ~ Marital status + Size of Family + Occupation				
	Intercept	3.385	1.878 to 6.543	≤0.001
	Marital status (non-cohabiting)	88.00	13.88 to 989.9	≤0.001
	Size of family (joint and extended)	0.001	0.0002 to 0.006	≤0.001
	Occupation (unemployed or housewife)	11.65	4.520 to 32.52	≤0.001

Traditional practice user ~ Marital status + Size of Family + Occupation + Religion				
	Intercept	12.39	4.942 to 41.72	≤0.001
	Religion (others)	0.027	0.005 to 0.095	≤0.001
	Marital status (non-cohabiting)	573.5	60.12 to 931	≤0.001
	Size of family (joint and extended)	0.0007	0.0006 to 0.004	≤0.001
	Occupation (unemployed or housewife)	32.96	9.675 to 140.2	≤0.001
Traditional practice user ~ Education level + Occupation + Income				
	Intercept	2.500	1.238 to 5.459	0.014
	Education level (Primary and below)	0.205	0.088 to 0.499	≤0.001
	Occupation (unemployed or housewife)	1.380	0.312 to 4.348	0.619 ns
	Income (low)	2.533	0.666 to 12.47	0.199 ns
Traditional practice user ~ Parity + Regular diet + Diet restrictions				
	Intercept	4.000	1.938 to 9.326	≤0.001
	Parity (more than two)	0.989	0.275 to 4.662	0.988 ns
	Regular diet (non-vegetarian)	0.171	0.079 to 0.343	≤0.001
	Diet restrictions (no)	4.432	1.607 to 11.82	0.003

As shown in Table 6, first model was generated between herbs users vs. marital status and size of the family. It suggests that a respondent cohabiting with their partner while living in joint & extended family is more likely to use traditional practices (p-value ≤0.001).

The second model indicates that the respondent cohabiting with a partner, being employed, and living in a joint & extended family is more likely to use the traditional practice. This is supported by the statistical significance of the p-value ≤ 0.001.

The next model predicts that herb users are likely other religious women, cohabiting with their partner, are employed, and living in joint & extended family (p-value ≤ 0.001). Further, women with primary or below education level are more likely to use herbs (p-value ≤ 0.001). Nevertheless, its association with employed high-income group women was found non-significant.

Further, mother following non-vegetarian or mixed diet with diet restrictions during pregnancy was found more likely to be a traditional practice user (p-value ≤ 0.001). The prediction models, predict the associations with herbs user based on the variables provided and hence may provide deviations from bivariate predictors.

5.6 ETHNOBOTANICAL REPORT OF PLANT SPECIES USED BY RESPONDENTS

The numbers of plant species, their botanical details, and purpose and practice as responded by traditional practices user, N=333, are presented here. During the survey total of 62 plants were reported belonging to 60 genera and 41 plant families, as reported in Table 7. Table 7 indicates the list of plant names, their family, common name, local name (Gujarati language), part used, herbal formulation, the form of the herb used, its activity and mode of application with Relative Frequency of Citation (RFC[a]).

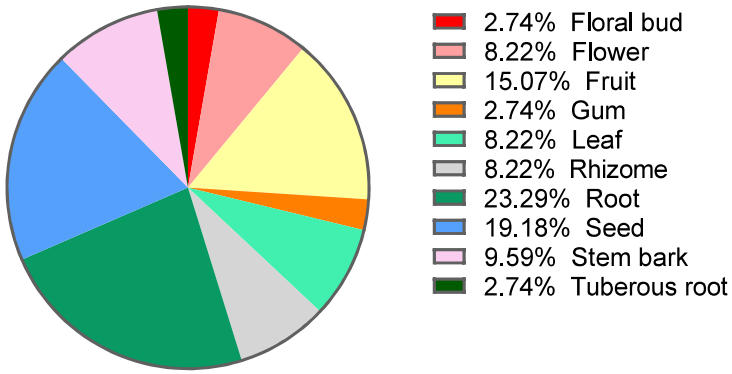

FIGURE 1. PIE-CHART SHOWING PART USED OF DIFFERENT PLANT SPECIES REPORTED.

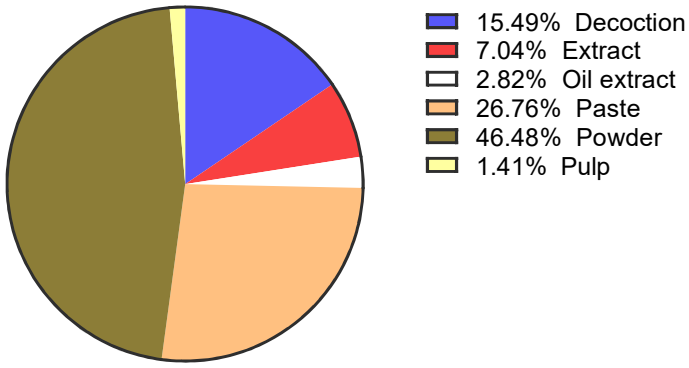

FIGURE 2. PIE-CHART SHOWING TYPES OF HERBAL FORMULATION USED FOR PLANTS.

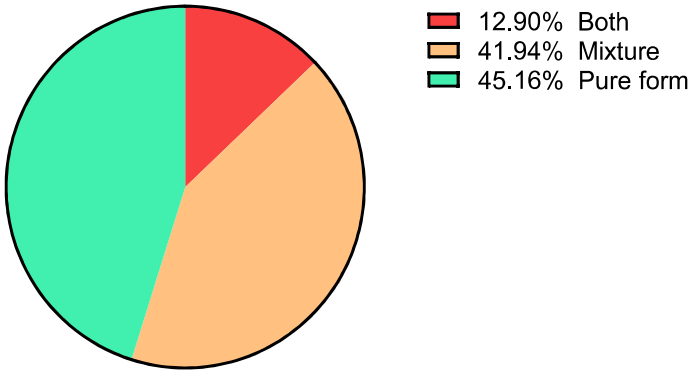

FIGURE 3. PIE-CHART FOR FORMS OF HERBS USED FOR PLANTS REPORTED.

The plants are found to belong to Fabaceae (17%) as the prominent family, followed by Zingiberaceae (10%) and Umbelliferae (10%) families. Malvaceae (7%) and Piperaceae (7%) were among the prominent families as per the details in table 7. Further, as shown in Figure 1, total 10 plant parts were found to be used, of the 62 taxa reported. Root (23.29%), seed (19.18%), and fruit (15.07%) were the highest, followed by stem bark (9.59%), rhizome (8.22%), Leaf (8.22%), and flower (8.22%).

Further, as represented in a pie chart in Figure 2, various types of herbal formulations are made from plants for applications. Major formulations reported are 46.48% powder, 26.76% paste, and 15.49% decoction, followed by extracts (7.04%) and pulp (1.41%). From the table it is evident that 90.32% of plants were used for internal applications, 8.06% for external, and 1.6% for both applications. As shown in Figure 3, 45.16% of plants were used in pure form, 41.94% as mixture, and 12.9% were used in both forms.

Relative Frequency of Citations (RFC^a) reports the number of times a particular herb is reported by respondents. The mean RFC^a was 0.26 ± 0.188, indicating the drug's popularity. The highest RFC^a of 0.68 was reported for *Tribulus terrestris* L. and the lowest value for *Desmodium gangeticum* DC. and *Anthocephalus cadamba* Miq. as 0.1 value.

TABLE 7. LIST OF PLANTS WITH THEIR BOTANICAL DETAILS AND PURPOSE AS RECORDED WITH RFC[a] VALUES.

Sr No	Scientific Name	Family	Common Name	Local Name	Parts used	Herbal formu-lation	Form of Herb	Activity	Appli-cation	RFC[a]
1	*Abrus precatorius* L.	Fabaceae	Indian wild liquorice	Ratti	Seed	Powder	Pure form	Abortifacient, Uterine stimulant	Internal	0.08
2	*Abutilon indicum* (L.) Sw.	Malvaceae	Country mallow	Balbij, Baladana	Seed	Powder	Pure form	Aphrodisiac, Diuretic, Haemorrhagic diseases	Internal	0.12
3	*Acacia nilotica* L.	Mimosaceae	Babul	Bawal gunder	Gum	Powder	Both	Demulcent for uterine disorders, astringent	Internal	0.31
4	*Achyranthes aspera* L.	Amaranthaceae	Prickly chaff Flower	Aghedo	Root, Flower	Paste	Pure form	Easy parturition, Abortifacient, emmenagogue, menorrhagia,	External	0.14
5	*Acorus calamus* L.	Araceae	The sweet flag	Vacha, Vaj, Ghodvach	Rhizome	Oil extract	Pure form	Hypotensive, sedative	External	0.14
6	*Alpinia galanga* Willd.	Zingiberaceae	Greater galangal	Panjad, Kulinjan	Rhizome	Paste	Pure form	Carminative	Internal	0.06
7	*Amaranthus spinosus* L.	Amaranthaceae	Spiny amaranth	Tandaljo	Seed, Root	Decoction	Pure form	Galactagogue, Menorrhoea, Maintenance of pregnancy	Internal	0.27
8	*Anacyclus pyrethrum* DC.	Asteraceae	Pellitory	Akkalkaro, Akkalgaro	Root	Paste	Pure form	Amenorrhoea	Internal	0.15

9	*Anethum sowa* Roxb. ex Flem.	Apiaceae	Indian dil fruit	Suva	Leaf, Fruit	Paste Decoction Powder	Pure form	Carminative, Galactagogue, Flatulence in children, Used as gripe water	Internal	0.53
10	*Anthocephalus cadamba* Miq.	Rubiaceae	Kadam	Kadamb	Root, Flower, Fruit, Stem bark	Paste	Mixture	Vaginal diseases, anticatarrhal, Female genital tract disorders	Internal	0.01
11	*Argemone mexicana* L.	Papaveraceae	Prickly poppy	Darudi	Root	Paste	Pure form	Easy parturition	External	0.05
12	*Aristolochia indica* L.	Aristolochiaceae	Indian birthwort	Sarpsand, Naagdamani	Root	Decoction	Pure form	Easy parturition, Abortifacient, laxative	Internal	0.03
13	*Asparagus adscendens* Roxb.	Asparagaceae	White musli	Safed mushali	Root	Powder	Pure form	Galactagogue, diuretic	Internal	0.09
14	*Asparagus racemosus* Willd.	Liliaceae	Asparagus	Shatavari	Root	Powder	Pure form	Galactagogue, puerperal diseases, lactic disorders, haematuria, bleeding disorders	Internal	0.60
15	*Asteracantha longifolia* Nees.	Acanthaceae	Long leaved barleria	Ekharo	Seed	Paste	Mixture	Easy parturition	External	0.19

16	*Azadirachta indica* A.Juss.	Meliaceae	Neem	Limdo	Root, Leaf	Paste Decoction Oil extract	Both	Easy parturition, worms, Regularization of menses, Blood purifier, contraceptive (external), fever during parturition	Internal, External	0.22
17	*Bambusa bambos* Druce.	Poaceae	Bamboo manna	Vaskapoor, Vanslochan	Leaf	Extract	Mixture	leucorrhoea, Carminative, dysmenorrhoea, emmenagogue	Internal	0.10
18	*Boerhaavia diffusa* L.	Nyctaginaceae	Hogweed	Satodi	Root	Paste	Pure form	Easy parturition, abortifacient, leucorrhoea	External	0.02
19	*Butea monosperma* (Lam) Kuntze	Fabaceae	Butea gum	Kamarkas	Bark, Flower	Powder Decoction	Pure form	Haemorrhages, Menstrual irregularities, Emmenagogue, given to parturient	Internal	0.09
20	*Calotropis gigantea* (L.) W.T.Aiton	Asclepiadaceae	Giant milkweed	Akado	Flower	Paste	Pure form	Reduce pain postpartum, alter menstruation	Internal	0.14
21	*Careya arborea* Roxb.	Lecythidaceae	Kumbi	Vapumbha, Kumbhi	Flower	Extract	Pure form	Galactagogue, Given to parturient	Internal	0.29
22	*Coriandrum sativum* L.	Umbelliferae	Coriander fruit	Dhana	Fruit	Decoction	Pure form	Carminative	Internal	0.31
23	*Curculigo orchioides* Gaertn.	Amaryllidaceae	Golden eye grass	Kali musli, kalirnusali	Rhizome	Extract	Pure form	Restorative tonic after childbirth	Internal	0.26
24	*Curcuma longa* L.	Zingiberaceae	Turmeric	Haldar	Rhizome	Powder	Pure form	Anti-inflammatory, Antioxidant property	Internal	0.49

25	*Cydonia oblonga* Mill.	Rosaceae	Quince fruit	Bihidana, Bedaana	Seed	Powder	Pure form	Soothing	Internal	0.12
26	*Datura metel* auct.	Solanaceae	Thornapple	Dhatura	Leaf	Paste	Mixture	excess menses, easy parturition, pre-anaesthetic	Internal	0.11
27	*Daucus carota* L.	Umbelliferae	Carot	Gajar bij	Seed	Extract	Pure form	Abortifacient, emmenagogue, menopause hot flushes	Internal	0.03
28	*Desmodium gangeticum* DC.	Fabaceae	Salparni	Samervo	Root, Leaves	Paste	Pure form	Abortifacient, anticatarrhal, emmenagogue, galactagogue, Haemorrhage, lumbago	Internal	0.01
29	*Eletteria cardamomum* (L.) Maton	Zingiberaceae	Cardamom	Elaichi	Fruit	Powder	Mixture	Carminative, Antiemetic	Internal	0.35
30	*Embelia ribes* Burm. F.	Myrsinaceae	Embelia	Vavding, Vayavadang	Fruit	Powder	Mixture	Galactagogue	Internal	0.26
31	*Ficus glomerata* Roxb.	Moraceae	Choraka patra	Umaro	Stem bark	Paste	Pure form	Postpartum recovery	Internal	0.07
32	*Foeniculum vulgare* Mill	Umbelliferae	Fannel fruit	Variyali	Fruit	Powder	Mixture	Emmenagogue, galactagogue, amenorrhoea, anti-inflammatory	Internal	0.54
33	*Glycyrrhiza glabra* L.	Fabaceae	Licorice	Jethimadh, Mulethi	Root	Powder	Mixture	Emmenagogue, Galactagogue, Gestational sugar control	Internal	0.50

34	*Gossypium herbaceum* L.	Malvaceae	Asiatic cotton	Kapas	Root	Decoction	Mixture	Emmenagogue, abortifacient, galactagogue, postpartum haemorrhage	Internal	0.25
35	*Lepidium sativum* L.	Brassicaceae	Chandrashula, Haalim	Asaliyo, Aseriya, Halim	Seed	Powder	Mixture	Easy parturition, Galactagogue, emmenagogue	Internal	0.56
36	*Linum usitatissimum*	Linaceae	Linseed	Alsi	Seed	Powder	Pure form	Laxative, Nutraceutical	Internal	0.42
37	*Mesua ferrea* L.	Guttifereae	Cobras saffron	Nagkesar	Floral bud	Powder	Mixture	Haemostatic for uterine bleeding	Internal	0.14
38	*Mimusops elengi* L.	Sapotaceae	Spanish cerry	Borsalli	Flower, Stem bark	Paste	Mixture	leucorrhoea, improves women fertility,	Internal	0.02
39	*Mirabilis jalapa* L.	Nyctaginaceae	Four-o'clock plant	Trisandhi	Leaf	Paste		Uterine discharge		0.12
40	*Mucuna pruriens* Baker.	Fabaceae	Cowhage	Kaucha	Seed	Powder	Mixture	Leucorrhoea, vaginal laxity	Internal	0.29
41	*Myristica fragrans* Houtt.	Myristicaceae	Nutmeg	Jaiphala, Jayfar	Seed	Powder Paste	Mixture	Antiemetic, Flatulency, and diarrhoea for child,	Internal	0.54
42	*Nelumbo nucifera* Gaertn.	Nymphaeaceae	Sacred lotus	kamal gatta, kamal kakdi	Seed, Rhizome	Paste	Mixture	Haemostatic, Menorrhagia, Rhizome given to new born for diarrhoea	Internal	0.20
43	*Pandanus facicularis* L.	Pandanaceae	Screw pine	Ketki	Root	Extract	Mixture	leucorrhoea, amenorrhoea	Internal	0.29

44	*Papaver somniferum* L.	Papaveraceae	Poppy seeds	Khaskhas	Seed	Paste	Mixture	Sedative, analgesic	Internal	0.41
45	*Phoenix dactylifera* L.	Arecaceae	Date palm	Khajur	Fruit	Pulp	Pure form	Laxative, Cooling, Nutraceutical	Internal	0.43
46	*Piper longum* L.	Piperaceae	Long pepper	lindipeepar, Pipali	Fruit	Powder	Mixture	tonic after childbirth	Internal	0.40
47	*Piper longum* L.	Piperaceae	Piper root	Pipali mool, Ganthoda	Root	Powder	Both	General tonic, hematinic, emmenagogue, galactagogue	Internal	0.63
48	*Piper nigrum* L.	Piperaceae	Black pepper	Kala mari	Seed	Powder	Both	Carminative, Gastro-intestinal stimulant, flatulence	Internal	0.36
49	*Pueraria tuberosa* DC.	Fabaceae	Indian kudju	Vidarikand, Bhonykoru	Tuberous root	Powder	Pure form	Galactagogue	Internal	0.40
50	*Saraca asoca* (Roxb.) DeWilde.	Caesalpiniaceae	Ashoka	Ashok	Stem bark	Decoction	Mixture	leucorrhoea, amenorrhoea, uterine tonic, menorrhagia, dysmenorrhea	Internal	0.21
51	*Sida cordifolia* L.	Malvaceae	Country mallow	Bala	Root	Powder	Mixture	Leucorrhoea, uterine tonic	Internal	0.09
52	*Smilax china* L.	Liliaceae	China root	Chopcheenee	Tuberous root	Powder	Mixture	Uterine tonic	Internal	0.03
53	*Symplocos racemosa* Roxb.	Symplocaceae	Symplocos bark	Lodhar, Lodhra	Stem bark	Powder	Mixture	Uterine disorders, vaginal diseases, Menstrual disorders, Menorrhagia, leucorrhoea, spasmogenic	Internal	0.22

54	*Syzygium aromaticum* (L.) Merr. And L.M. Perry	Myrtaceae	Clove	Laving	Floral bud	Decoction	Both	Carminative, antispasmodic	Internal	0.09
55	*Terminalia arjuna* (Roxb.) W. & A.	Combretaceae	Arjun terminalia	Arjun	Stem bark	Powder	Pure form	excess menses, herpes, and leukoderma	Internal	0.24
56	*Trachyspermum ammi* (L.) Sprague ex Turril	Umbelliferae	Bishop's weed	Ajwain, Ajmo	Fruit	Decoction Powder	Mixture	Carminative, antispasmodic, gripe water for children, flatulence	Internal	0.39
57	*Tribulus terrestris* L.	Zygophyllaceae	Caltrops fruit	Gokharu	Fruit	Powder	Mixture	Emmenagogue, used for uterine disorders, Improves fertility in female	Internal	0.68
58	*Trigonella foenum-graecum* L.	Fabaceae	Fenugreek	Methi	Seed	Powder	Both	Flatulence, Galactagogue, Uterine tonic	Internal	0.63
59	*Vitex negundo* L.	Verbenaceae	Five leaved chaste tree	Nirgundi, Nagodbiya, Harenu, Renuka	fruit	Powder	Mixture	Excess vaginal discharge, abortifacient	Internal	0.22
60	*Withania somnifera* Dunal.	Solanaceae	Wintercherry	Ashwagandha, Aasandh	Root	Powder	Mixture	Anti-inflammatory, Antioxidant, diuretic, sedative, galactagogue	Internal	0.49

61	*Zingiber officinale* Roxb.	Zingiberaceae	Ginger	Sunth	Rhizome	Paste Decoction Powder	Both	Antiemetic, Antispasmodic, anti-inflammatory	Internal	0.56
62	*Balsamodendron myrrha* Nees.	Burseraceae	None	Hiraabola	gum-resin	Powder	Both	Painful and irregular menstruation, blood purifier, emmenagogue	Internal	0.38

TABLE 8. LIST OF TRADITIONAL PRACTICES DOCUMENTED DURING THE SURVEY.

SR NO.	PERIOD OF USAGE	TYPE OF PRACTICE	BRIEF DESCRIPTION
1	Postpartum	Raab	A slurry is cooked by adding Ghee, Jaggery, wheat flour, cardamom, and dry fruits. The preparation is given a fresh to new mothers.
2	Postpartum	Methi laddu	A flour balls are prepared by cooking wheat flour, ghee and jaggery. To that Fenugreek powder, poppy seeds, cardamom, and dry fruits are added and handful balls are prepared. Optionally, grated coconut and udad flour is added.
3	Postpartum	Udad pak	A preparation of black gram flour-based delicacy cooked with ghee, jaggery, ganthoda, sunth and bawal gundar and dry fruits is known as udad pak.
4	Postpartum	Dry fruits laddu	A wheat flour-based preparation of sweet with ghee, sugar, cardamom, ganthoda, poppy seeds and dry fruits. Preparation is made as balls.

5	Antenatal	Ukaala	A water-based decoction is prepared by boiling Nirgundi, ardusi and wood apple is given twice a day.
6	Postpartum	Gundar pak	A sweet dish prepared with sunth, ganthoda, bawal gundar and dry fruits based on wheat flour is known as gundar pak.
7	Postpartum	Suwadana Pani	A water-based decoction by adding ghee, jaggery and suwadana (dill).
8	Antenatal and Postpartum	Ukaala	A water decoction is prepared with ginger and tulsi leaves.
9	Postpartum	Ukaala	A water decoction made with tea, ginger, clove and black pepper. Consumed fresh.
10	Postpartum	Suji laddu	A suji (semolina) based sweet dish prepared with ghee, jaggery and dry fruits.
11	Postpartum	Batrisu vasanu /katlu	A sweet dish prepared with wheat flour, ghee, jaggery and freshly grounded around 32 herbs, known as batrisu vasanu powder.
12	Antenatal and postpartum	Till laddu	A jaggery balls prepared by melting the jaggery added with till (sesame seeds).
13	Antenatal and postpartum	Mukhvas	A mixture of dried roasted seeds of variyali (fennel), till (sesame), suwadana (dill) and alsi (flaxseeds).
14	Postpartum	Sukhadi	A sweet prepared with wheat flour or gram flour, ghee, jaggery and dry fruits.
15	Postpartum	Hirabola	The oleo-gum-resin is mixed with sweet dish and given for recovery of mother.

16	Antenatal and postpartum	Ubatan	Herbal bath mixture prepared with masoor flour, haldi, Chandan, coconut milk and gram flour.
17	Postpartum	Ragi dish	Ragi flour, sattu flour, sugar and cardamom mixed and prepared as a sweet dish.
18	Postpartum	Kheer	A milk based sweet prepared with haleem (asariyo) seeds and added sugar.
19	Postpartum	Masanumas	A commercial mixture available with added extracts of yesthimadhu, sagbean, ksheerkakoli.
20	Parturition	Castor oil	Pure castor oil is taken during last week of gestation to ease parturition.
21	Parturition	External application	Plants namely neem and kariyatu are tied on to women for ease of parturition
22	Parturition	Internal application	Aghedo root or satodi root paste is inserted in the birth canal to ease parturition.
23	Parturition	Sweet delicacy	Powdered taj, asariyo and akkalkaro is cooked with wheat flour, ghee and jaggery.
24	Postpartum	Internal application	Umaro tree bark paste is consumed to relieve pain

There were 10 plants with RFC values above 0.5, like, *Glycyrrhiza glabra* L., *Anethum sowa* Roxb. ex Flem., *Myristica fragrans* Houtt., *Foeniculum vulgare* Mill, *Zingiber officinale* Roxb., *Lepidium sativum* L., *Asparagus racemosus* Willd., *Piper longum* L., *Trigonella foenum-graecum* L. These plants were presented with various purposes as shown in the Table 7. The herbs used were galactagogue, emmenagogue, menorrhagia, dysmenorrhea, general tonic, uterine tonic, abortifacient, easy parturition, antiemetic, and carminative. The purposes listed are as reported by the participants during the study.

Table 8 shows the list of traditional and herbal practices documented from the survey population. As shown in Table 8, total 24 different practices were reported during study. Most of the practices were related to postpartum 19/24 (79.16%) period followed by parturition related and antenatal practices. The types of practices are distinct from each other; however, many are of preparing delicacy dishes served to new mothers. Decoction based on water (ukaala) is also reported by many participants. Certain practices are about consuming the drug, and a few are for external applications on the body. The present study helped in documenting these traditional practices popularly used in the study sample.