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RESEARCH ARTICLE

QUANTITATIVE ANALYSIS OF ETHNOMEDICINAL PLANTS BY DETERMINATION OF USE-VALUE (UV), INFORMANT CONSENSUS FACTOR (ICF) USED IN LOWA, PURBA BARDHAMAAN

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ABSTRACT

Ethnoscience is a term to encompass studies describe local people's interaction with the natural surroundings. Ethnomedicine with no doubt remains the main revenue contributing to both orthodox and tradional medicine. In developing countries like the India, the use of plants as medicine plays an important role especially in providing affordable and accessible health care. A comprehensive study on documenting traditional medicinal practices way carried at Lowa Santoshpur, Dwanari, Purba Burdwan district in WestBengal, India and analyzed for the first time. However, studies to determine the use-value (UV) of these plants, the informant consensus factor (ICF), the frequency of citation (FC) and Relative Frequency of Citation (RFC) have been scarce; hence, this study was conducted. For most of the communities there is a little published data on ethnomedicinally important plants, so data was collected on survey basis. Few, a total of 64 medicine practices were described for treatment of 21 diseases. They were documented from 182 informants. Among the documented data herbs and leaves are the most utilized pant, dominant families were the Fabaceae. The highest ICF value was 0.955 for digestive system disorders. Based on UVs, the most commonly used ethnomedicinal plant species in the study area were *Azadirachta indica* (0.37). The highest RFC was recorded for *Azadirachta indica* (0.049). The present study showed the traditional treatment using medicinal plants is still widespread in the study area. This study will promote furthur phytochemical and pharmacalogical investigations and possibly lead to the development of new drugs.

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INTRODUCTION

The term 'Ethnoscience' originated from a combination of 'Ethnology' and 'science'. The term was coined by John Harshberger in 1895. It is without doubt a multidisciplinary subject. Ethnobotany has a very long history dating back for example, i. Aspirin (acetylsalicyclic acid) derived from willow tree (saliaceae), ii. Reserpine which is derived from Rauwolfia (Apocynaceae), iii. Quinine, derived from cinchona (Rubiaceae). The Sushruta, Samhita contains more than hundred chapters and explain cause of more than one thousand number of diseases. The growing interest in ethnobotany can be observed through the increased number of journals such as, Journal of Ethnobiology, Journal of Ethnopharmacology, Journal of Ethnobotany etc. In spite of the significant contribution of traditional medicine in primary health care and its potential, the system has faced problems of continuity and sustainability. The World Health Organization even has estimated that approximately 80% of the population worldwide depends on this traditional system of medical support (Caunca, 2021). The formal study of these plants has proven to be a powerful tool in understanding how different indigenous communities relate to natural resources, notably for medical and pharmaceutical applications (de Albuquerque, 2009). Today a substantial number of drugs are developed from plants which are active against number of diseases. In developed countries 25% of drug prescribed in conventional medicine are related directly or indirectly to naturally occurring substances of plant region. However, the traditional knowledge passed on orally generation to generation without any written document and still retained by various indigenous group like Fakir, Ojha etc (Mondal, 2015). There has been a continuous decline in traditional medical practices due to migration of traditional medicinal healers to other jobs and many more possible reasons. The documented data were quantitatively analyzed for the first time in this area. The information was obtained through open-ended, semi-structured questionnaires. The benefits, importance and coverage of ethnomedicine were expressed through several quantitative indices including Informant Consensus Factor (ICF), Use Value (UV), Frequency of Citation (FC) and Relative Frequency of Citation (RFC) (Faruque, 2018). For conservation of these knowledge through detail, surevey is important. Therefore, this study focused on surveying and documenting the traditional medicinal practices used for healing different ailments in Lowa, Santoshpur.

Objective: To Know and understand the local flora and their ethnobotanic role. For proper documentation of indigenous knowledge about medicinal plant.To preserve the unwritten traditional knowledge about plants.To conserve the national heritage from extinction. To make people aware of the role of ethnobotany in cultural, society and health of the people.

METHODOLOGY

Ethnobotanical knowledge requires detailed knowledge to preserve it. Dozens of local people were contacted to record maximum data. Data

were collected from local tribal people, teachers, students, Fakirs, Ojhas through some specific questionnaires. Care was taken regarding the characteristic features of the plants while collecting the data Plants were identified according to the standard method of Bentham and Hooker. Ethnobotanical field data collection was conducted from May 2022 to October 2022. The study sites were visited three times. Semistructured interviews, guided field walks, observation, and focus group discussion were employed following standard ethnobotanical methods (Alexiades and Sheldon, 1996). Data related to the informant's characteristics (sex, age, and educational level), ailments treated using medicinal plants, preparation methods, routes of administration, threats of medicinal plants, conservation practices, and other uses of medicinal plants were collected (Martin, 1995). The specific list of plants obtained. is presented in the Table no-2.

Survey Station: Most of the people living around the school belong to the ascetic community. They retain their tribal culture. Burdwan Sadar Subdivision is home to many different communities and castes. The main sources of this visit are Dwarnari, Loa, Santoshpur, which belong to Loa Ramgopalpur Gram Panchayat while other sources are Ghagra, Batalban and Loapur which belong to Loapur Krishnarampur Gram Panchayat. These villages are located in the vicinity of our Lowa Dibakar Vidyamandir High School.

Table 1. Spatial locations of collected ethnomedicinal information in Lowa, Santoshpur, Purba Bardhamaan

Sample no.	Name of the area	Longitude	Latitude
1.	Amarpur	22.98428486180909	87.97603273583961
2.	Betalbon	23.34447072303163	87.55413721346693
3.	Dwarnari	23.34154264393084	87.55539724038873
4.	Ghagra	23.354410507608403	87.56146428074504
5.	Lowa	23.341663854363993	87.56043829561908
6.	Lowapur	23.33868676823813	87.5470006097006
7.	Sandhipur	22.8539233825528	87.51245226725842
8.	Santoshpur	23.342229302974204	87.57044106275279

A map of the study area:

Quantitative Ethnobotany: Data were entered in an Excel sheet and frequencies and percentages were used to summarize ethnobotanical data. These parameters were used to check for informant consensus factor (ICF), Use value (UV), relative frequency of citation (RFC).

Informant Consensus Factor (ICF): Informant consensus factor (ICF) for different ailment categories was calculated for testing homogeneity or consistency of the informants' knowledge about a particular remedy for a particular ailment. It is used to highlight plants of cultural relevance and agreement in the use of plants. The value of this factor ranges from 0 to 1. (Trotter, 1986). A high ICF value indicates an agreement among respondents in the use of taxa within a medicinal category. The relative importance of a species is evaluated by the proportion of respondents who cited it.Informant Consensus Factor (Logan, 1986). It was calculated using the following formula:

$$ICF=(Nur-Nt)/(Nur-1)$$

Where, "Nur" refers to the total number of use reports for each disease cluster and "Nt" refers the total number of species used for that cluster. This formula was used to find out the homogeneity in the ethnomedicinal information documented from the traditional informants.

Use Value (UV)

The UV was calculated using the following formula (Phillips, 1994).

$$UV=\sum/N$$

Where, "U" refers to the number of uses mentioned by the informants for a given species and "N" refers to the total number of informants interviewed. If a plant secures a high UV score that indicates there are many use reports for that plant, while a low score indicates fewer use reports cited by the informants.

Frequency of Citation (FC) and Relative Frequency of Citation (RFC)

The FC was calculated as follows:

FC=(Number of times a particular species was mentioned)/(total number of times that all species were mentioned)×100.

It was evaluated by dividing the number of informants who mentioned the use of the species (FC) by the total number of informants participating in the survey (N). The RFC index ranges from "0" when nobody referred to a plant as useful to "1" when all informants referred to a plant as useful. RFC = FC/N.

RESULTS

Demographic profile of the respondants: A total 182 informants were interviewd. The informants were categorized into 5 different age groups. Out of these 21% people are above 60 years old. 9 % were between 50 to 60 years old, 15 % are between 40 to 50 years old, 6% are between 30 to 40 years old and only 4 % are below 30 years old among which maximum arre the school students. This is documented in Figure 1.

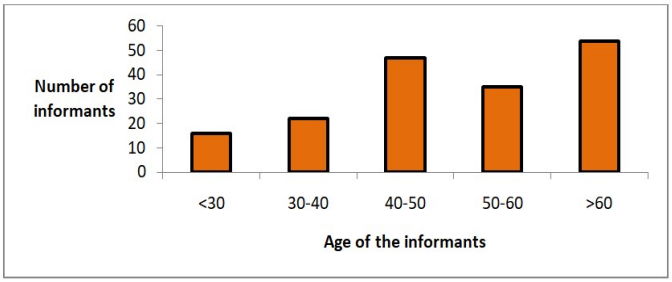

Figure 1. Demographic characteristics of the informants

Parts of the plant used as ethnomedicine: The most utilized plant part were leaves (61%) followed by branches (21%), fruits (13%) and roots (7%) depicted in Figure 2. The possible reason is as leaves are active in food and metabolite production Fruits are second highest and roots are the third highest because of higher concentration of bioactive compounds than other parts of plants (Ghorbani 2005 and Basualdo, 1995).

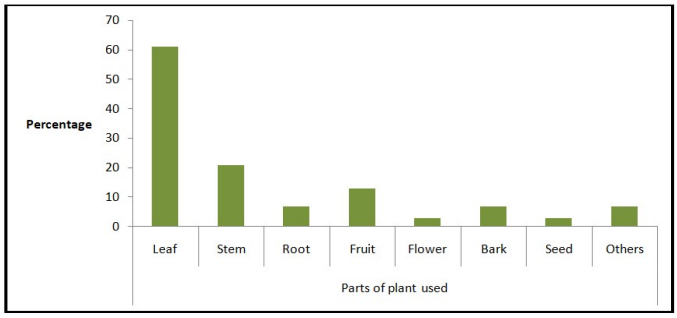

Figure 2. List of plant pasrts along with their frequency of use among species recorded for the preparation of ethnomedicine

***Nature of the plant*:** 64 ethnomedicinal species in 39 families were documented in Table no.-2. Most of the documented species were herbs (52%) followed by trees (22%), shrubs (14%) and climbers (13%) provided Figure no. 3. The reason for dominance of herbs is due to study area being located in agricultural field which get 6-8 hrs of sunlight in a day and highly fertile soil which is ideal for herbs plantation. Similar results were reported with analogous studies conducted elsewhere (Ghorbani, 2005; Kayani *et al*., 2015 and Khan, 2015).

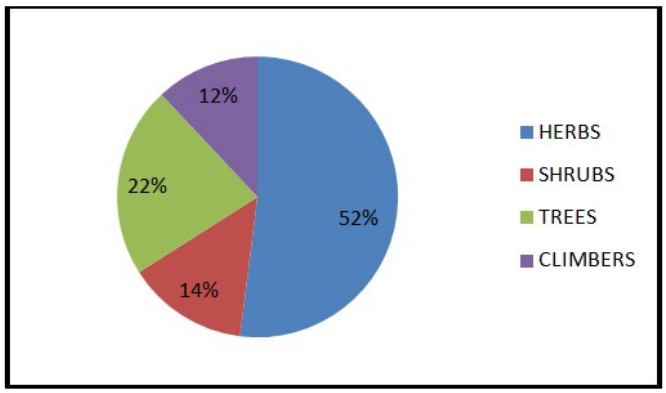

Figure 3. Nature of the documented plant species

Dominant familes were Fabacea (7 species) followed by Asteracea (3), Cucurbitacea (3), Arecea (3), Amarantheacea (3) and others are one or two other families were represented between 1 and 3 species. Similar results were reported by other ethnobotanists (Ghorbani, 2011; Bibi, *et al*., 2014 Islam, 2006; Singh, 2014; Fortini, 2016; Güzel *et al*., 2015), reported that the Asteraceae was the second largest family in their studies.

Mode of preparation of ethnomedicine: The most frequently used mode of preparation was as Leaf extract (21%) followed by Paste (19%), direct utilization (15%) and dermal application (13 %) will be found in Figure no. 4. It was reported that juices were the second highest mode of preparation in other studies (Sadat-Hosseini, 2014).

***Predominance of diseases in the locality*:** For treatment of 21 different ailments a total of 64 herbal medicines were described in this study which are grouped into 10 different categories in table no 2. the most frequest disease was recorder as digestive system disorder(35%) followed by dermal wound (13%), oral inflammation (10%), Diabetes (8%), Pain (11%) and toothache, skin disorder are 8%.

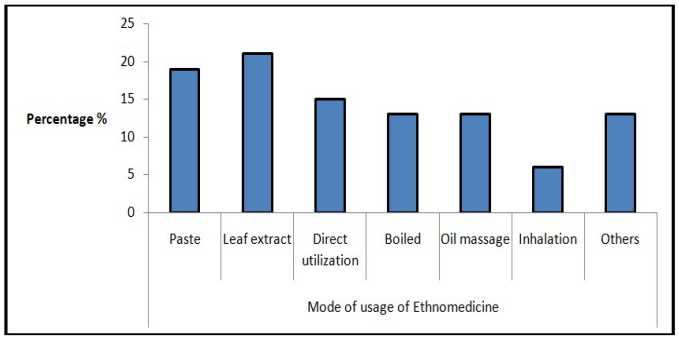

Figure 4. Mode of preparation of ethnomedicine

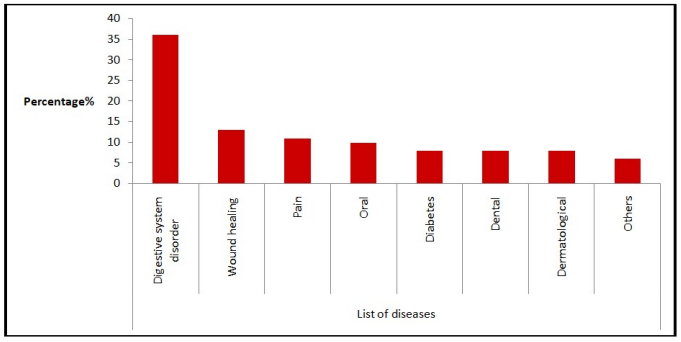

Figure 5. Predominance of disease in the locality

Quantitative Ethnobotany

Informant's Consensus Factor (ICF): A total of 64 ethnomedicinal species were documented among the informants of indigenous communities studied. All documented plant species plant species were presented in table no 2 detailing their scientific names, plant part used, ailments treated, ethnomedicinal uses, UV, FC and RFC. This study thus highlights the dependence of traditional healers of these people in obtaining their ethnomedicines from natural environment. The documented ethnomedicinal plants were used to treat 21 different ailments which were grouped into 8 different categories. The ICF values ranged from 0.662 to 0.955. The highest ICF value of 0.955 was for digestive system disorders followed by wound healing (0.952) and skin disorder (0.950), while the lowest ICF value was 0.660 for breast tumor (Table 2). It was found that digestive system disorders had the highest ICF value (Ghorbani *et al*., 2011), whereas in other work it was also noted as second highest ICF value (Juárez-Vázquez, 2013). This ranking might be due to a lack of adequate knowledge about the pathogenicity of disease and drinking polluted water. The highest number of ethnomedicinal species were used to treat digestive system disorders (18 species) followed by treatment of diabetes (6 species) and pain (6), while only one species was documented to treat breast tumor (Table 2). Digestive system disorders were those most commonly treated with ethnomedicines in previous studies within Bangladesh (Islam *et al*., 2014 and Rahman *et al*., 2016) and were also found to be the most common disorders treated in other parts of the world (Hanlidou *et al*., 2004; Macía *et al*., 2005; Lee *et al*., 2008; Aston Philander *et al*., 2011) where as, it is reported that such disorders were the second most common category treated (de Albuquerque *et al*., 2007). This means that each informant mentioned a different plant species being utilized for that category; hence, there was no consensus at all.

Species Use Value (UV): In the present study, the UV (Table 2) ranged between 0.005 to 0.380. On this basis, the five most commonly used ethnomedicinal plant species were *Azadirachta indica* (0.37), *Psidium guajava* (0.35), *Mentha spicata* (0.330), *Zingiber officinale (0.300, Cajanus cajan (0.29)*.

Table 2. Documented plant species and their taxonomy

Sl.No.	Scientific name	Medicinal Part Uses	Use in the Diseases	Ethnobotanical uses	UV	FC	RFC
1.	*Abelmoschus esculentus*	Root	Dysentery	Roots dried and powdered; taken with sugar	0.2	0.52	0.003
2.	*Achyranthes aspera*	Root	Hair line bone crack	Root pasted with seeds of *Tamarindus indica* applied on the affected area for few days	0.005	0.13	0.0007
3. Ar	*Aerva jabanika*	Leaf	Wound healing	Leaf extract	0.01	0.26	0.001
4. A	*Allium sativum*	Stem	Muscle ache	Heated with oil and applied externally	0.11	2.73	0.015
5. .	*Alocasia macrorrhizos*	Stem	Oral inflammation	Roasted and pasted; taken with honey	0.016	0.39	0.002
6. A	*Aloe vera*	Leaf	Gastritis	Leaf extract	0.12	2.72	0.015
7. .	*Amaranthus viridis*	Leaf	Acne	Leaf extract applied directly on acne	0.01	0.26	0.001
8.	*Amorphophallus paeoniifolius*	Stem juice	Wasp bite	Applied externally	0.01	0.26	0.001
9.	*Andrographis paniculata*	i. Leaf	i. Diabetes	Paste	0.10	2.47	0.014
10.	*Averrhoa carambola*	Fruit	Ascariasis	Fruit juice taken with *Azadirachta indica* leaf extract	0.027	0.65	0.004
11. a	*Azadirachta indica*	i. leaf ii. Bark	i. Mump ii. Ascariasis iii. fever iv. Sin disorder	i. Leaf paste applied with turmeric ii. Bark soaked water iii. Powdered bark taken orally	0.37	8.83	0.049
12. .	*Basella alba*	Leaf	Insomnia	Leaf extract; taken with honey	0.016	0.39	0.002
13.	*Benincasa hispida*	Fruit	Tuberculosis	Cooked	0.01	0.26	0.001
14. Br	*Bryophyllum*	Leaf	i.Kidney stone	Paste	0.01	0.26	0.001
15. c	*Caccinia grandis*	Leaf	i. Diabetes ii. oral inflammation	i. chewing directly ii. paste	0.038	0.91	0.005
16. ci	*Cajanus cajan*	Leaf	Jaundice	Paste	0.29	6.75	0.037
17.	*Calotropis gigantea*	Leaf	Pain	Leaf extract heated with oil and massage on the affected area	0.01	0.26	0.001
18.	*Carica papaya*	i. Young leaves ii. Fruit gum iii. Ripe fruit	i. Malaria ii. Ringworm iii. Heart attack	i. leaf extract ii. Fruit gum taken with water iii. Fruit eaten directly	0.07	1.69	0.009
19. C	*Catharanthus roseus*	Leaf	Diabetes	Inhalation	0.13	03	0.016
20.	*Centella asiatica*	Leaf	Stomachache	Chewed directly	0.22	5.2	0.028
21.	*Cinnamomum tamala*	Leaf	i.Sore throat ii. allergy	i.Smoke inhalation ii.Boiled and taken with water	0.04	1.03	0.006
22.	*Cissampelos pareira*	Stem	Hair line bone crack	To tie up the affected area	0.01	0.26	0.001
23.	*Cissus quadrangularis*	i. Leaf ii.Stem	Hair line bone crack	i. Leaf extract increase vitamin C and calcium ii. Stem extract taken with milk	0.01	0.26	0.001
24. .	*Citrus limetta*	Fruit	Acidity	Juice in lukewarm water; taken in empty stomach	0.032	0.78	0.004
25. C	*Colocasia esculenta*	Stem juice	Ear inflammation	Applied externally	0.16	0.39	0.002
26. .	*Coriandrum sativum*	Leaf	i.Piles ii.Gum swelling	Leaf extract taken directly	0.08	1.95	0.011
27. Cy	*Cynodon dactylon*	i. Leaf ii. Root	i. wound healing ii.. Nausea	i. leaf paste ii. Root extract taken with sugar	0.06	1.43	0.008
28.	*Eclipta prostrate*	Leaf	Nose inflammation	Leaf paste	0.01	0.26	0.001
29. E	*Euphorbia tithymaloides*	Root	Diabetes	Cooed	0.02	0.52	0.003
30.	*Ficus bengalensis*	Adventitious root	Dysentery	Boiled with milk	0.016	0.39	0.002
31. .	*Ficus sycomorus*	i. Fruit ii. Leaf	i.Dysentery ii. Breast cancer	i. Cooked ii. Leaf taken directly	0.16	3.77	0.021
32.	*Hibiscus rosa sinensis*	Leaf	Wound healing	Leaf paste	0.08	1.95	0.011
33. H	*Hygrophila auriculata*	i. Leaf ii. Stem	Anemia	Leaf and stem boiled water	0.10	2.47	0.014
34.	*Ipomea aquatica*	Leaf	Wasp bite	Paste applied externally	0.01	0.26	0.001
35.	*Jatropha gossypiifolia*	Soft stem	Toothache	Chewed	0.04	1.03	0.006
36.	*Justicia adhatoda*	i.Young leaf ii. Young Stem	i. Cold and cough ii.Hair line bone crack	i. leaf extract with honey ii. Stem pasted with leaf applied on affected area and left for few days	0.005	0.13	0.0007
37.	*Lablab*	Fruit	Arthritis	Cooked	0.01	0.26	0.001

……Continue

38. m	*Macno tyloma*	Seed	Kidney stone	Soaked in water and pasted	0.016	0.39	0.002
39.	*Magnifera indica*	i.Leaf ii.Inflorescense	i.Diabetes ii.Nose bleeding	i. leaf boiled in water and the water is taken ii. Dried inflorescence is inhaled	0.02	0.52	0.003
40. M	*Marsilea quadrifolia*	Leaf	Insomnia	Cooked	0.05	1.30	0.007
41. M	*Mentha spicata*	Leaf Stem	Gas	Chewed	0.33	7.78	0.043
42. mi	*Mikania micrantha*	Leaf	i. painkiller	i. paste	0.05	1.17	0.006
43. .	*Momordica charantia*	Leaves and flower	Hyperacidity	Fried in ghee	0.038	0.91	0.005
44. M	*Moringa oleifera*	Leaf	Hypertention	Cooked	0.01	0.26	0.001
45.	*Musa sp.*	i. Root ii. Inflorescence	i. Anemia ii. Hypertention	i. Powdered root taken orally daily ii. Inflorescence cooked	0.03	0.78	0.004
46.	*Nyctanthes arbor-tristis*	Young leaves	Anemia	Leaf taken directly	0.016	0.39	0.002
47.	*Opuntia*	Leaf	Earache	Leaf heated and extracted used externally	0.04	1.03	0.006
48.	*Phyllanthus emblica*	Fruit	i. Scurvy ii. Asthma	Dried fruit is prowdered	0.12	2.86	0.016
49.	*Piper methysticum*	Stem	i. Diabetes ii. Insomnia	Stem extract taken with water	0.005	0.13	0.0007
50. p	*Psidium guajava*	Leaf	i. toothache ii.appetite stimulant	Leaf chewed directly	0.35	8.31	0.046
51. P	*Pterocarpus santalinus*	Stem	Skin disorder	Paste applied externally	0.04	0.91	0.005
52. R	*Raphanus sativum*	Root	Fever	Cooked	0.01	0.26	0.001
53.	*Saccharum officianarum*	Stem	Jaundice	Juice	0.065	1.56	0.009
54.	*Santalum album*	Stem	Skin disorder	Paste applied externally	0.01	0.26	0.001
55.	*Sapindus mukorossi*	Fruit	Dandruff cleaning	Fruit extract	0.016	0.39	0.002
56.	*Saraca asoca*	Bark	i. irregular menstrual cycle	i. paste	0.01	0.26	0.001
57. S	*Scoparia dulcis*	Leaf	Toothache	Paste applied directly	0.016	0.39	0.002
58.	*Tagetes erecta*	Leaf	Wound healing	Leaf paste	0.23	5.32	0.029
59.	*Talinum paniculatum*	Leaf	Dengue	Cooked	0.016	0.39	0.002
60. .	*Tamarindus indica*	Leaf	Indigestion	Taken directly	0.02	0.52	0.003
61. te	*Terminalia arjuna*	Bark	Heart disorder	Water, soaked with bark	0.005	0.13	0.0007
62.	*Tinospora cordifolia*	Stem	Fever	.Stem extract taken directly	0.01	0.26	0.001
63. vi	*Vigna mungo*	Seed	Pain killer	Soaked in water and pasted	0.07	1.56	0.009
64. Z	*Zingiber officinale*	Stem	Indigestion	Shredded, taken with salt	0.30	7.01	0.038

In the study with the Manobo tribe of Agusan del Sur, the three medicinal plants with the highest UV were *Anodendron borneense, Piper decumanum,* and *Micromelum minutum* (Faruque and Uddin, 2014). In this study the least used species were *Piper methysticum* and *Terminalia arjuna* (0.005 each) used as anti tumor agent. Aspects of these results can be correlated with previous work. An ethnobotanical survey in Bangladesh where *Z. officinale* was reported as having the highest UV in their study (Rahman et al., 2016), but in the present study it had 0.300 UV as fifth highest value. It was recorded that *M. chamomilla* as having their third highest UV whereas *Mentha spicata* is the third highest in our study (Fortini et al., 2016).

***Relative Frequency of Citation (RFC)*:** In our study, RFC values ranged from 0.0007 to 0.049. The highest RFC was recorded for *Azadirachta indica* (0.049), followed by *Psidium guajava* (0.046), *Mentha spicata* (0.043), *Zingiber officinale* (0.038), *Cajanus cajan* (0.037). The ethnomedicinal plants species having high RFC values indicated their abundant use and widespread knowledge among the local communities. *Azadirachta indica* had the highest frequency of citation (FC-8.83) but it is a rare species in the study area; conversely *Jatropha gossypiifolia* (FC-1.03) and *Cynodon dactylon* (FC-1.43) with low frequency of citation were abundantly distributed in the study areas.

DISCUSSION

This approach could guide institutions in making relevant policies and in the development of medical drugs. The informants utilized in this study predominantly >60 years old (31%), with 27% of the remainder age range from 40-50 years and remaining 42 % belongs to other age groups. This reflects the older profile of the knowledge repository in this community regarding medicinal plant use. This survey also reported that many of the documented plants are prescribed for use in combinations. Mixtures of medicinal plants and other known or unknown ingredients were recorded. Most commonly, such mixtures included turmeric (*Azadirachta indica*), milk (*Cissus quadrangularis*), honey (*Alocasia macrorrhiza*), salt (*Z. officinale*) and sugar (*Cynodon dactylon*). Most of the mixtures of medicinal plants are used to treat gastrointestinal disorders. The general belief is that such mixtures might enhance the pharmacological activities of medicinal plants (Juárez-Vázquez, 2013). For the ICF, a high value means that the informants have a consensus for a specific plant that may be used for a particular category. The lowest ICF value (0.66) for the treatment of breast tumour suggests a lower level of consensus among informants on the use of a plant species to address this disease category. In addition, with the availability of commercial medicines that provide modern alternatives to herbal medicine, a low ICF value reflects the reduced use of some traditional remedies (Abayao, 2002).

The ICF values may vary from culture to culture reflecting the differences in medicinal plants found and used in these areas, and the ailments that these plants are being used for. With regard to the actual plant materials more commonly used by the people of the Lowa, Santoshpur as assessed by our research, the highest use reports were generated for *Azadirachta indica*, *Zingiber officinale*. These plants were also reported by other researchers for treating other various disorders in Bangladesh. *Azadirachta indica* is used in eczema and allergy (Khan, 2015); chicken pox and measles (Kayani, 2015); high blood pressure, gastritis, flatulence, and jaundice (Uddin, 2013). Zingiber officinale is also used to relief from sore throat [33] and vomiting (Islam, 2006). However, having multiple therapeutic applications like *Azadirachta indica* in treatment of fever, ascariasis, skin disorder and mumps could also suggest the presence of a wide range of potent phytochemicals in these medicinal plants; hence, can also be subjected to further studies. Lastly, the findings of this study on the most preferred plant species used to address a particular ailment category are supported by a number of publications: the use against certain infectious and parasitic diseases of *S. alata* is supported by its reported antifungal and antihelmintic properties (Oladeji, 2020). The use to treat eye-related ailments and wounds of *M. oleifera* is supported by its reported antimicrobial, antiviral, and antioxidant properties (Clark, 2018 and Qi, 2019). The efficacy of *M. indica* to specifically treat diabetes is supported by its antidiabetic property (Samanta, 2019). The utilization of *O. tenuiflorum* to treat common colds is attributed to a variety of its pharmacological properties (Bano, 2017). The use to treat diarrhea of *C. cainito* could be due to its antimicrobial and astringent properties (Oranusi, 2015). Future work is necessary to investigate the pharmacological properties of these plants species, in order to validate their traditional use. Furthermore, two ethnomedicinal species (*T.arjuna* and *F. sycomorous*), with third and fifth highest use values respectively, are used to treat heart ailments and breast tumour by indigenous communities; therefore, these species warrant particular pharmacological investigation.

CONCLUSION

The present study showed that traditional treatment using medicinal plant is still prevalent in the studied areas. This shows that the preservation and conservation of indigenous knowledge are vital for the sustainable utilization of the plant resources. There is a need for immediate conservation of the threatened and disappearing species to avoid their extinction from the wild. diverse resources. Plants with high informant agreement can be subjected to further pharmacological studies to validate their traditional uses .To the best of our knowledge this is the first ethnobotanical study in this study area. This survey may be a preliminary contribution of microbotany of these area using standerd research methods focusing on medicinal plants and their local uses. It can lead to the discovery of new bioactive molecules. It may help to explore new era of Ayurveda in future.

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