Ethnobotanical Survey of Medicinal Herb Used by Healer of Sekhukhune, Limpopo, South Africa For Management of HIV/AIDS During Covid-19

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ABSTRACT

Ethnopharmacological relevance

Introduction

HIV/AIDS rests one of the greatest important worldwide healthiness challenges, distressing masses of individuals global. Meanwhile the commencement of the infection, countless worldwide reaction approaches have been developed and executed, directing to moderate its impression and finally exterminate it. Although these policies devise generated extraordinary improvement, there are quiet key obstacles hindering the worldwide battle alongside the virus.

Aim

To survey was to recognise and document plants customarily castoff to manage HIV/AIDS and extravagance its unscrupulous contagions Sekhukhune, a rural District, Limpopo Province, South Africa.

Materials and methods

Semi-structured interviews and focus group debates were directed with 35 traditional health practitioners from June 2020 to June 2021 to obtain evidence about therapeutic plants used in the controlling of HIV/AIDS related**.**

Results

Twenty eight plant species have its place to 22 families were recognised for the controlling of HIV and cure of related infections in Sekhukhune. The recognised plant species have its place frequently to the families in Asphodelaceae (3.7%), Fabaceae (11.11%), Asteraceae (9.09%), Capparaceae (3.7%), Mesembyanthemaceae (3.7%), Sapindaceae(3.7%),Myrtaceae(3.7%),Euphorbiaceae(3.7%),Malvaceae(3.7%),Hypoxidaceae(13,63),Verbanaceae(3.7%),Hyacinthaceae(3.7%),Geraniaceae(3.7%)Salicaeae(3.7%),Anacardiaceae(3.7%),Zingiberaceae(3.7%),Caricaceae(3.7%),Ebenaceae(3.7%),Hyacinthaceae(3.7%),Lamiaceae(3.7%),Acacia(3.7%),Amaryllidaceae (3.7%).

Conclusion

This survey offers citations of therapeutic plants castoff in the controlling of HIV and usage of usually related symptoms, organised with the ARV, which strength offer a possible central that will meaningfully contribute in dropping the encumbrance of HIV contagions in South Africa. We foresee that this paper will offer some contextual for supplementary studies in unindustrialized new, active, non-toxic and inexpensive phytomedicines.

Keywords: South African traditional medicine, HIV, AIDS ethnobotanical survey; Opportunistic, gonorrhoea; syphilis; chlamydia; impotence; fungal infections; medicinal plants

INTRODUCTION

Subsequently the flinch of the HIV/AIDS epidemic in the early 80's, around 77.5 million individuals have developed diseased with HIV and above 34.7 million have surrendered to the infections [31]. Aimed at the supplementary new covid-19 contagion which commenced in 2019, there have remained 206,958,371 established cases as of August 18, 2021 worldwide with 4,361,996 definite deaths, as of July 28, 2021 [1,2,4,5,34].The human immunodeficiency virus (HIV) distresses masses of individuals universal, which can central to the acquired immunodeficiency syndrome (AIDS).Human immunodeficiency virus (HIV) is an contagion that occurrences the body's immune system, exactly the white blood cells called CD4 cells. HIV extinguishes these CD4 cells, weakening a person's protection against unscrupulous contagions, such as tuberculosis, covi-19, and mycological contagions, undecorated bacterial contagions and some tumours [6,7,8,9,10,31] .Afterward an HIV contagion, the patient regularly vestiges asymptomatic for a substantial period as the body's immune system attempts to thrive the contagion. Nevertheless, over time the virus reproduces speedily, thereby dropping the quantity of vigorous immune cells and eventually disposing the individual to other infections. These extra contagions are called devious infection caused by pathogens taking gain of the conceded immunity/immune system in the exaggerated individual. Devious contagions of HIV include tuberculosis (TB), candidiasis of numerous quantities of the respirational and gastrointestinal system, multiple forms of lymphoma and *Herpes simplex* . HIV is the paramount menace factor for improvement or recrudescence of beforehand dormant TB infection and worse during covid-19 pandemic. TB is a primary basis of death amongst HIV-positive people, accounting for around 26% of HIV/AIDS-related deceases [31]. The connection amongst HIV and TB, the maximum communal, is near sufficient for these two contagions to be pronounced as co-epidemic [24] . WHO's 2022–2030 worldwide health segment approach on HIV aims to reduce HIV contagions from 1.5 million in 2020 to 335 000 by 2030, and deaths from 680 000 in 2020 to below 240 000 in 2030 [31]. Admittance to antiretroviral drugs for the controlling of HIV contagion and augmented responsiveness to control the rate of new infections have attained some quantity of accomplishment, for low- and middle-income countries [14]. However antiretroviral might inferior the manifestation of in patients living with HIV and interruption its advancement to AIDS, there are still weaknesses to the use of orthodox treatments. These embrace poverty, drug resistance, shortage of health personnel and the related lateral properties of antiretroviral therapy [16].Hypersensitivity response or impulsive, neutropenia, myopathy, anemia, neuropathy, mitochondrial toxicity, lactic acid build-up, pancreatitis, fever, rash, nausea, vomiting, diarrhea, abdominal pain, fatigue, achiness, shortness of breath, sore throat, dark-coloured urine, lipoatrophy, and jaundice are some of adverse effect of the ARVs [22].These shortcomings may be central to patients resorting to substitute and/or outdated drugs as a means of accomplishing the goal of health improvement. The use of traditional herbal treatment for the controlling of HIV and cure of associated is reasonably prevalent amongst diverse groups internationally, and predominantly in Africa [23], exclusively throughout covi-19 epidemic as the primary relief and greatest accessible treatment.

Diverse societies use therapeutic plants in a range of customs for the controlling of HIV and cure of associated infections [26]. Ethnobotanical surveys have been exploited in the exploration for locally significant therapeutic plants that can be used to accomplish a diversity of illnesses, and also as an aid in drug innovation [25] .

Therapeutic plants have an extensive olden times of curative numerous ailments. Accepted mixtures from plants are a ridiculous reservoir of bioactive antiviral mixtures. Current scientific and technological developments have through it conceivable to effortlessly isolate complexes since such plants with an extensive range of natural activities [28]. While there are no systemic side-effects described for humans in the literature [30] , numerous diverse side effects have been testified due to active components, impurities or interfaces with remedies [29] . Herbal drugs have stood a test of time for their security, effectiveness, traditional acceptability and slighter side effects. The hostile effects might noticeable in procedure of modifications in stages of biomolecules such as enzymes and metabolic yields, normal operative and histomorphology of the organs [17]. Henceforward, there is necessity to study the special effects of these plants which have possible healing benefits to determine their security in animals by means of biochemical and haematogical indices. The Limpopo province is one of the deprived provinces in South Africa. Scarcity is relatively high in the rural areas still urban poverty is also

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imperative [27]. They stated on the traditional therapeutic plants castoff for HIV and associated infections in other sections of the South Africa and the whole world. Nevertheless, around is no papers on the therapeutic plants castoff by traditional healers for these disorders in Sekhukhune, the study site. Consequently, I accompanied a study to file medicinal plants castoff in the controlling of HIV and cure of its distrusted in this Sekhukhune, South Africa. The explicit purposes were to recognise plants and plant parts castoff in the management of HIV and cure of, and to define the most collective method of preparation and administration of these plant harvests. A essential point to highlight is the preservation of these plants to safeguard sustainability**.**

METHODS

Description of study area

The Sekhukhune District is situated in the Limpopo Province, the northernmost part of South Africa. It lies in the south-eastern part of the province, neighbouring on the Capricorn and Mopani Districts in the north, Mpumalanga in the south and east, and the Waterberg District in the west. The district is the smallest in the province, making up (shields an area of 13,528 km^2)11% of its geographical area. Geographically Sekhukhune District stay amongst 24°50′S and 29°50′E (Fig. 1). It is included of four indigenous municipalities: Elias Motsoaledi, Ephraim Mogale, Makhuduthamaga and Fetakgomo Tubatse. The area's towns and villages are serviced by its major river – the Olifants. The flora of the region was categorised by as aris-semi savannas [32]. It is categorized by a combination of trees, shrubs and grasses [33] **.**

Figure 1 South Africa

Figure 2 Sekhukhune District Municipality

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The Study area population

The surveyed district is inhabited by Black African 98.6%, Coloured 0.1%,Indian/Asian 0.2%,White 1.0% .Black people Northern Sotho 82.2%,Southern Ndebele 4.4%,Zulu 3.3%,Tsonga 2.0%, Other 8.1% mostly from Bapedi ethnic group, as well as few Ndebele. The Bapedi ethnic group constitutes the largest cultural group in the Limpopo Province (South Africa), comprising 57% of the total provincial population. The study was, however, restricted to the area around Sekhukhune in order to ensure that healer interviewed, livestock owners, elderly were Sepedi speaking and use mountain, bush and river as their closest source of medicinal plants.

Data collection

Initially a survey was intended and piloted with ten informers to classify the correctness for the information assembly and future on adjusted allowing to the informers answer. The improved form was then castoff to wrinkle HIV/AIDS medicinal plants information of the survey district commencing each informer independently. Furthermost of individuals live in the pastoral zone in Sekhukhune, henceforth usage of foliage for HIV/AIDS treatments with symptoms such as: Rash, Diarrhoea, Cough ,Anorexia ,Pallor ,Weight loss ,Fever ,Headache ,Herpes zoster ,Reddening of the lips ,Chronic cough, Weakness ,Skin ulceration, Vomiting, Abdominal pains ,Chills ,Constant headache ,Difficulty swallowing ,Painful urination ,Genital ulcers ,Oral Ulcers ,Sexually transmitted infections, Skin lesions, Skin pigmentation changes [35] Informers were permissible to talk spontaneously deprived of any reluctance. Our absolute perseverance remained to grow the comprehensive list of medicinal plants castoff and/or acknowledged by alone informer. Altogether consultations remained accepted out in native language (*Sepedi*) of the survey area. In accumulation, informers were separated into two assemblies and whole three effort group deliberations were also ingenuous to gain supplementary evidence on medicinal plants at the communal level and to demonstrate the dependability of information collected through semi-structured dialogues. Questionnaires premeditated to the informers (traditional healers) about medicinal plants information were largely concentrated on native name of medicinal plant, types of HIV/AIDS infection cured, remedy preparation, plant part used, use of single or mixture of plants for remedy preparation, mode of administration, dose requirement, recovery time, and usable duration regarding each medicine. The questionnaire also restricted questions about general information of informers such as name of the respondent, gender, age, education, and occupation.

Field survey

Ground work was agreed out from June 2020 to June 2021. A whole four ground excursions (each trip of 10 days) were finished in respectively months. Previous to information gathering indigenous agents of the districts were stayed and knowledgeable approximately the focal subject of the survey and to produce their vocal agreement for information assortment and publication. The procedures for the gathering of data and voucher specimens throughout the field study surveyed that designated by Saikia [36]. Total 35 informers were nominated on the source of their traditional information concerning cure in diverse communities of Sekhukhune.

Ethical compliance

Ethical consensus was reserved separately from all the informers by ensuring them that their traditional information would be secure. This was completed in mandate to recognize informers' collaboration in conserving the traditional information of the survey area and builds their assurance for providing trustworthy facts. Out of 35 informers 25 were males and 10 were females. Age of the informants were ranged between 36 and 100 years old.

Table 1 Demographic Data of Participants

Parameters		**Participants(N)**	**N (%)**
Gender	Female	10	29
	Male	25	71
Age	36–46	3	8

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	47–57	6	17
	58–68	7	20
	69–79	11	32
	80-90	6	17
	90-100	2	6
Education	No Formal Education	10	29
	Primary	13	37
	Secondary	7	20
	Tertiary	2	6
	Others	3	8
Collaboration with modern medicine	Collaboration	15	43
	Non-Collaboration	20	57
Occupation	Herbalists	30	86
	Retirees	4	11
	Housewives	1	3
Residence	Urban	3	9
	Rural	32	91
Marital status	Single	13	37
	Married	15	44
	Widowed	6	17
	Divorced	1	2

Data analysis

Different quantitative tools such as Frequency of citation (FC) and relative frequency of citation (RFC), Family importance value (FIV), Fidelity Level (FL), and Use Value (UV) were castoff to investigate the significance of therapeutic plants and informers' information about classifications of HIV/AIDS opportunistic infections.

Use value (UV)

Use value is premeditated to measure all possible custom of herbal types. UV of plants provides a measureable investigation for plant citation. UV expresses the comparative prominence of herbal flora renowned locally. UV was investigated bestowing to [15].

$UV = u/N$

Where u is the total informers declaring numerous usages of a herbal and N is whole number of informers. UV is generally (1) if the quantity of usages is superior, and (0) if the usage testimony for plants species is a lesser amount of. UV not convey information on numerous or solitary use of plant is significantly small. UV does not convey any information on the solitary or various uses of plant species.

Frequency of citation (FC) and relative frequency of citation (RFC)

FC is castoff for assessing the maximum desired herbal or extra used herbal species. RFC was scrutinised to sophisticated the information of traditional flora approximately custom of healing flora in the study site.

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RFC = FC/N (0 < RFC < 1)

Wherever RFC is signified by relative frequency citation, FC (Frequency of Citation) is the quantity of informers who quantified the herbal flora and N is entire amount of informers [39].

RESULTS AND DISCUSSION

Socio-demographic characteristics of participants

The Limpopo province denotes around 13% of the entire inhabitants of South Africa. The jurisdiction has the uppermost residents progress proportion in the country, near 3.9% per year. The mainstream of the inhabitants is Africans and around 90% of the alive in the pastoral areas. Communally 35 informers were nominated from several settlements of Sekhukhune district, Limpopo, South Africa. The mainstream of traditional healers were men (71%). Based on age, the informers were separated into seven groups ,36–46 (8%),47–57 (17%), 58–68 (20%), 69–79 (32%), 80-90 (17%) ,90-100 (6%). Informers constitute, 30 herbalists, 4 retirees and 1 housewife. Concerning education, 29% of the informers were uneducated, 37% of the had attended primary school, 20% secondary education level, 6% tertiary education and only 8% of participants had attended universities. The majority of traditional healers (44%) in the study area were married, followed by single (37%), widowed (17%) and 2% divorced. Greatest of the informers remained active in pastoral zones (91%) and solitary 9% living in built-up zones, the plant flora was herbs 51%, followed by shrubs (23%) followed by trees (18%) and lastly climber (8%). The 28 medicinal plants belonged to 17 families, with Fabaceae (5 species), Asteraceae (4 species) represent the most dominant family in this survey site followed by Rutaceae, Anacardiaceae with 2 species each and the rest with one (table 3).

Plant parts used in herbal medicines

Amongst the diverse parts of therapeutic plants castoff by traditional healers, the subversive parts (root, rhizome, tuber, corn, leaves) were greatest regularly castoff to make the remedies for curative treatments, while the whole plant and leaves were second and third correspondingly. The greatest supportable usage of the plants to confirm sustainability is to usage leaves to escape the danger of extermination of most of the medicinal plants. Tabuti [18] stated that the usages of root and tuber parts be able to threaten medicinal plant inhabitants or species sustainability. The dialogue outcome on diverse plant parts exploited exposed that leaves (60,7%) were conveyed to be the greatest commonly castoff herbal slice to formulate herbal medicine whichever by singly or mixes by other plant parts. Leaves remained pursued by roots (14,28%), whole (10,71%) followed by bark and seed with (7,14%) contributed (Fig.1).

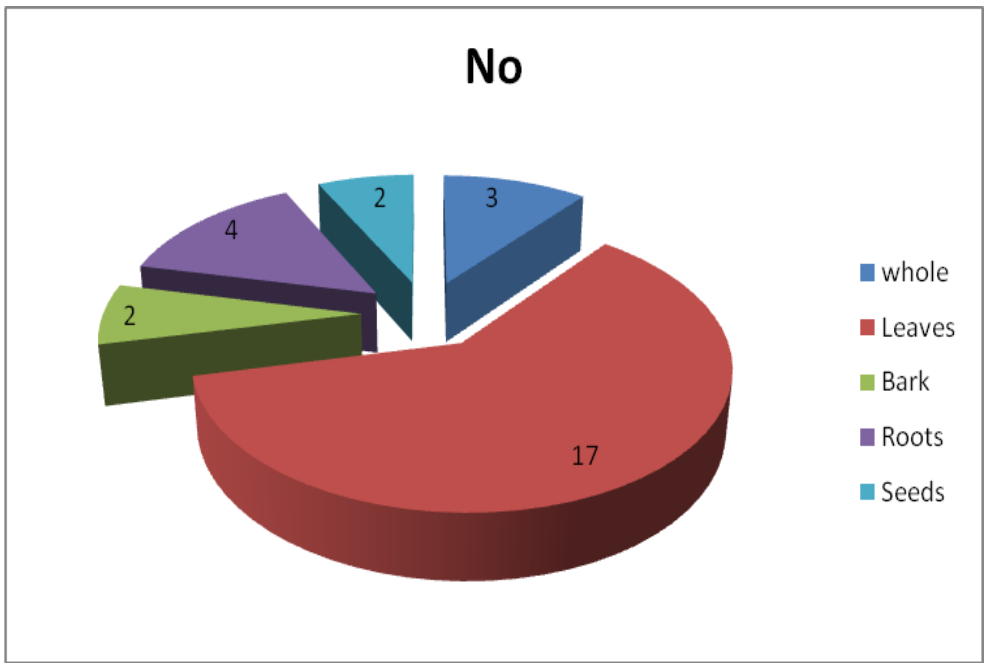

Figure 1 Parts used

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Collection sites

Herbal remained customarily collected from roadsides (41%), followed by Abandoned land (23%), distressed environments (15%), family botanical gardens (10%), highland 8% and Rivers 3% as foundations of therapeutic plants (Fig. 2).

Collection sites of plant in Sekhukhune District

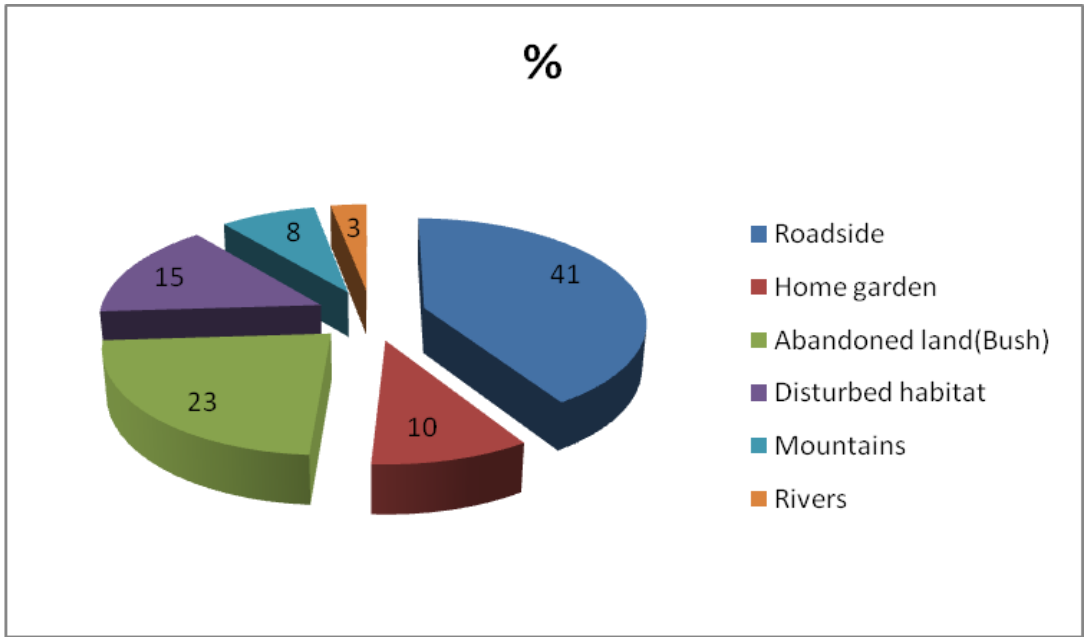

Figure 2 Collection site

Quantitative ethnobotanical analysis

Fidelity level

Extraordinary FL was perceived for therapeutic of HIV/AIS, TB and Diabetes mellitus. The plant used Artemisia afra (1), Eucalyptus camaldulensis (1) Hypoxis hemerocallidea (0,94) Helichrysum caespititium (0.91), Carpobrotus edulis (0.91), Schotia brachypetala (0.91), Sclerocarya birrea (0.91), Senna italica (0.89), (Table 2).

Use value

Herbal with the maximum UV values were Artemisia afra (1) Eucalyptus camaldulensis (1), The lowest UV was on Pelargonium spp(0.48), Euclea crispa (0.48)and each with a UV value of Dodonaea viscose(0.42) (Table 2). Use value calculation of Syzygium cordatum (0.14) was not considered because of less than ten use-report.

Relative frequency of citation (RFC %)

The RFC represented the conspicuous species castoff for HIV/AIDS associated contagions founded on the proportion amongst the quantity of informers (FC) for a plants and the overall number of participants in the research survey. RFC ranged from 0 to 0.95 and we classified all species into 3 groups: RFC 0. to 0.35(0-49) (8 species); RFC, 0.357 to 0.707(50-99) (9 species); RFC 0.714 to 0.957(100-140) (11 species) (Table 3). Bestowing to this ethnobotanical histories, the mainstream of herbal in the third group were stated with great therapeutic prospective. The maximum values remained documented for Artemisia afra (1) used in the form for HIV/AIDS, Coughing, influenza, Fever and TB. Other high RFC species were Aloe aborescens, Senna italic

Limitations and strong points

One of the study limitations was that it was only shown on the traditional healers who belief that medicinal plant must be integrated into ARV for the benefits of clients and with no complete information on the period of

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diagnosis and ART initiation. This study capacity be more imperfect by non-existence of convenience of other probable independent variables. Conversely, powers include the procedure of national HIV/AIDS data with a large sample size and the application of the quantile regression model. Despite the fact, the traditional worsening perfect accepts the comparable effects of self-determining variables on the distribution of the reliant on variable, the various quantities in diverse deliveries of ART instigation reasonable the use of quantile deterioration in this survey.

Individual versus combination use

Table 2 most common combinations

Symptoms	Plants Combination	Participants
Fever, General weakness, Runny nose, Loss of smell, Loss of taste, fatigue, achiness, shortness of breath, sore throat, dark-colored urine, lipoatrophy	Eucalyptus camaldulensis / Artemisia afra + Hypoxis hemerocallidea + Schotia brachypetala + Euclea crispa	6
Fever, Shortness of breath at rest, Loss of smell, Loss of taste, fever, rash, nausea, vomiting, diarrhea, abdominal pain	Eucalyptus camaldulensis / Artemisia afra + Boscia albitrunca + Carpobrotus edulis	5
Sore throat, Fever, Runny nose, Shortness of breath at rest, Chills, Fatigue, General weakness, Loss of appetite, headache	Eucalyptus camaldulensis / Artemisia afra / Cannabis sativa + Peltophorum africanum / Sclerocarya birrea / Aloe marlothii	8
Sore throat, Fever, Shortness of breath at rest, General weakness, headache, Loss of smell, Loss of taste, fever, rash, nausea, vomiting, diarrhea, abdominal pain	Eucalyptus camaldulensis / Artemisia afra / Cannabis sativa + Aloe marlothii	9
Sore throat, Fever, Runny nose, Shortness of breath at rest, anemia, neuropathy, mitochondrial toxicity, lactic acid build-up, pancreatitis	Eucalyptus camaldulensis / Artemisia afra / Cannabis sativa + Aloe marlothii / Senna didymobotrya	4
Sore throat, Fever, Runny nose, Shortness of breath at rest, Chills, Fatigue, General weakness, Loss of appetite, headache, Loss of smell, Loss of taste, Hypersensitivity reaction or rash, neutropenia, myopathy	Eucalyptus camaldulensis / Artemisia afra / Cannabis sativa + Aloe marlothii + Senna didymobotrya	3

Provisions of the therapies established 8 single abstracts from 8 species depending on the infection and 27 combinations with 12 species were recorded 5 species with one indigenous species transversely altered municipalities (Table 2). Types that were used exclusively contain Artemisia afra**,** Schotiabrachy petala**,** Lippia javanica **,** Sutherlandia frutescens**,** Aloe aborescens**,** Elephantorrhiza Elephantina were castoff independently and in recipes. Only prominent combination and communal or well-known combination were documented. Traditional health experts prefer mixtures mostly as they say it prevent feather contagion and reduced venomousness in those herbal that are harmfulness.

Qualitative ethnobotanical analysis

Fidelity level

Plant species such as Drimia elata existed not automatically significant in controlling of HIV/AIDS infections in line for to a small quantity of usage information [38].Herbal with solitary usage description such as Combretum hereroense and Myrothamnus flabellifolius remained not calculated for Fidelity Level (FL) due to very insufficient usage description in HIV/AIDS. Imperative herbal kinds with extraordinary FL standards and through a significant quantity of usage information remained Artemisia afra (1) Eucalyptus camaldulensis (1)

Hypoxis hemerocallidea (0.94) Schotia brachypetala(0.91), Sclerocarya birrea (0,91), Hermannia quartiniana (0,91) Carpobrotus edulis (0,91) These herbal necessity more antimicrobial studies against pathogens of different HIV/AIDS related infections and antiviral/antiHIV.

Use value

The herbal with the maximum Use Value (UV) were well-thought-out imperative in line for to extraordinary use-reports. Notwithstanding existence reflected vital, [38] noted that the UV cannot discriminate if the plant is castoff for solitary or various determinations. Although that, the FL standards designated the reputation of plant species to numerous infections.

CONCLUSION

Although development has were made in treatment and deterrence, addressing concerns of admittance, finance, humiliation, and discernment residues crucial to attaining operative control and ultimate extermination of the infection. South Africa is overwhelmed with the encumbrance of HIV and its associated symptoms. The exploitation of therapeutic plants to extravagance the accompanying with HIV can make noteworthy involvement to decreasing the encumbrance of this contagion in the republic. The current survey manuscript the preparation of the controlling of HIV and handling of the normally related in Sekhukhune, Limpopo, South Africa, with the use of therapeutic herbal. Herbal remained usually castoff since they stayed inexpensive and generally more available than other means, although most of traditional healer belief that combination with ARV provides much benefits for their client especially during covid-19.

Abbreviations

UV=Use value, **ARV**= antiretroviral, **HIV**= Human immunodeficiency virus, **FL**= Fidelity level, **AIDS**= acquired immunodeficiency syndrome

Declarations

Ethical approval

The study was carried out according to the relevant ethical guidelines and regulations.

Consent for publication

The author give consent for publication

Competing interest

The authors declare that they have no competing interests.

Funding

Not applicable to this project

Author contribution

Only ones author work to the study

Availability of data and materials

Not Applicable

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Table 3 of medicinal plants use for HIV/AIDS and other related infection.

Scientific Name (Voucher No.)	Botanical Family	Vernacular Name	Part(s) Used	Preparation & Administration	Ailment/ Infection	Citation (FC)	Frequency Index (FI %)	Use Value (UV)
Aloe aborescens Mill. (JKM4)	Asphodelaceae	Kgopha-ya-fase	Root	Boiled 20 min, 1 tin cup orally, 3×/day	HIV/AIDS	29	82.87	0.83
Artemisia afra Jacq. ex Willd. var. afra (JKM8)	Asteraceae	Lengana	Leaf	Boiled 15 min, 1 tin cup orally, 3×/day	Tuberculosis	35	100	1
Boscia albitrunca (Burch.) Gilg & Gilg-Ben. (JKM10)	Capparaceae	Mohlophi	Root	Mixed & boiled 20 min, 1 tin cup orally, 3×/day	HIV/AIDS	21	60	0.6
Carpobrotus edulis (L.) L. Bolus subsp. edulis (JKM13)	Mesembryanthemaceae	Lepolomo-la-go-naba	Leaf	Squeezed juice, 1 tin cup orally, 3×/day	Diabetes, Goiter	32	91.4	0.91
Dodonaea viscosa var. angustifolia (JKM18)	Sapindaceae	Mofenshe	Root	Mixed & boiled 20 min, 1 cup orally, 3×/day	HIV/AIDS	15	42.8	0.43

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Elephantorrhiza elephantina (Burch.) Skeels (JKM19)	Fabaceae	Mosehlana/ Moshisane	Root	Boiled 20 min with Peltophorum africanum, 1 cup orally, 3×/day	HIV/AIDS	25	71.4	0.71
Eucalyptus camaldulensis Dehnh. (JKM22)	Myrtaceae	Mopilikomo	Leaf	Boiled 5–20 min, 1 cup orally, 3×/day	Tuberculosis	35	100	1
Euphorbia maleolens E. Phillips (JKM23)	Euphorbiaceae	Rofa-bja-Tau	Whole plant	Pounded with other roots, taken orally with porridge, 3×/day	HIV/AIDS	17	48.57	0.49
Helichrysum caespititium (DC.) Harv. (JKM27)	Asteraceae	Bokgatha/ Mabjana/ Mmeetse	Whole plant	Boiled or pounded, taken orally or with porridge, 3×/day	Diabetes, Hypertension, Blood purifier	32	91.14	0.91
Hermannia quartiniana A. Rich. (JKM28)	Malvaceae	Unknown	Root	Boiled 20 min, 1 cup orally, 3×/day	Diabetes mellitus	32	91.14	0.91
Hypoxis hemerocallidea (Fisch.) Mey. & Avé-Lall. (JKM29)	Hypoxidaceae	Titikwane/ Sesogadi	Tuber	Pounded or boiled, taken with porridge or orally, 3×/day	HIV/AIDS, Tuberculosis	33 / 29	94.24 / 82.85	0.94 / 0.83
Hypoxis iridifolia Baker (JKM30)	Hypoxidaceae	Monna maledu, Modiboya	Root	Boiled 5–10 min, 1 cup orally, 3×/day	Diabetes mellitus	27	77.14	0.77
Hypoxis obtusa Burch. ex Ker Gawl. (JKM31)	Hypoxidaceae	Monna maledu/ Swikiri poo	Tuber	Boiled, administered anally with syringe, 3×/week	Blood clotting	25	71.42	0.71
Lippia javanica (Burm. f.) Spreng. (JKM32)	Verbenaceae	Mosunkwane	Leaf	Boiled or inhaled via smoke/steam, 3×/day	Chest complaints, Tuberculosis, Nose bleeding	30	85.7	0.86
Merwilla plumbea (Lindl.) Speta. (JKM34)	Hyacinthaceae	Sekakgopha	Leaf	Boiled 5–10 min, 1 cup orally, 3×/day	Diabetes mellitus	21	60	0.6
Pelargonium spp (JKM36)	Geraniaceae	Selumi	Root	Boiled or pounded, 3–4×/day	HIV/AIDS, Hypertension	17	48.57	0.49
Peltophorum africanum Sond. (JKM38)	Fabaceae	Mosehla	Bark	Boiled alone or mixed, 1 cup orally, 3×/day	HIV/AIDS, Hypertension	31	88.57	0.89
Salix mucronata subsp. capensis (JKM39)	Salicaceae	Mmilo	Seed, Fruit	Pounded, taken with warm water, 3×/day	Tuberculosis	26	72.28	0.72
Sclerocarya birrea subsp. birrea (JKM40)	Anacardiaceae	Morula	Bark	Boiled with other plants, 1 cup orally, 3×/day	Blood clotting	32	91.41	0.91
Siphonochilus aethiopicus (JKM42)	Zingiberaceae	Serakulu	Rhizome	Boiled, steam inhaled	Asthma	26	74.28	0.74

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Carica papaya L. (JKM44)	Caricaceae	Mophopho “wapoo”	Root	Boiled 20 min, 1 cup orally, 3×/day	Diabetes mellitus	29	82.85	0.83
Euclea crispa subsp. crispa (JKM46)	Ebenaceae	Mokwerekwere	Root	Boiled with other roots, 1 cup orally, 3×/day	HIV/AIDS	17	48.57	0.49
Eucomis pallidiflora subsp. pole-evansii (JKM47)	Hyacinthaceae	Mathuba-difala	Bulb	Mixed & boiled, 1 cup orally, 3×/day	Tuberculosis	21	60	0.6
Tetradenia riparia (JKM48)	Lamiaceae	—	Leaves, Flowers	Boiled, taken orally, 3×/day	Tuberculosis	31	88.57	0.89
Acacia hockii (JKM49)	Fabaceae	—	Bark, Leaves, Gums	Mixed & boiled, 1 cup orally, 3×/day	Tuberculosis	29	82.85	0.83
Allium sativum (JKM50)	Amaryllidaceae	Garlic	Bulb	Mixed & boiled, 1 cup orally, 3×/day	Tuberculosis	28	80	0.8
Senna italica (JKM51)	Fabaceae	Morotelatshotshi	Root	Boiled 5–8 min, 1 cup orally, 3×/day	Tuberculosis	31	88.57	0.89
Schotia brachypetala (JKM52)	Fabaceae	—	Root, Bark	Boiled 20 min, 1 cup orally, 3×/day	Tuberculosis	32	91	0.91