Medicinal Plants Used Traditionally for Skin Related Problems in the South Balkan and East Mediterranean Region—A Review

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A review research was conducted to provide an overview of the ethnobotanical knowledge of medicinal plants and traditional medical practices for the treatment of skin disorders in Albania, Cyprus, Greece, and Turkey. The geographical and ecological characteristics of the Balkan Peninsula and Mediterranean Sea, along with the historical connection among those countries, gave rise to the development of a distinct flora and to the uses of common medicinal plants against various skin ailments, respectively. The review focuses on the detailed study of 128 ethnobotanical surveys conducted in these areas and the species used for skin ailments were singled out. The analysis showed that 967 taxa belonging to 418 different genera and 111 different families are used in the treatment of skin related problems. The majority of the plants belong to the families of Asteraceae (11.7%), Lamiaceae (7.4%), Rosaceae (6.7%), Plantaginaceae (5.4%), and Malvaceae (3.8%). Their usage is internal or external to treat ailments such as wounds and burns (22.1%), hemorrhoids (14.7%), boils, abscesses, and furuncles (8.2%). Beside specific skin disorders, numerous species appeared to be used for their antifungal, antimicrobial, and antiseptic activity (9.1%). Literature evaluation highlighted that, the most commonly used species are Plantago major L. (Albania, Turkey), Hypericum perforatum L. (Greece, Turkey), Sambucus nigra L. (Cyprus, Greece), Ficus carica L. (Cyprus, Turkey), Matricaria chamomilla L. (Cyprus, Greece), and Urtica dioica L. (Albania, Turkey), while many medicinal plants reported by interviewees were common in all four countries. Finally, to relate this ethnopharmacological knowledge and trace its expansion and diversification through centuries, a comparison of findings was made with the use of the species mentioned in Dioscorides’ “De Materia Medica” for skin disorders. This work constitutes the first comparative study performed with ethnobotanical data for skin ailments gathered in the South Balkan and East Mediterranean areas. Results confirm the primary hypothesis that people in Albania, Cyprus, Greece, and Turkey are closely related in terms of traditionally using folk medicinal practices. Nevertheless, more field studies conducted, especially in remote places of these regions, can help preserve the traditional medical knowledge, aiming at the discovery of new phytotherapeutics against dermatological diseases.
INTRODUCTION

Herbal therapies have been used for the treatment of skin conditions for centuries in the Balkan countries, while several plant compounds are still used in topical treatments (Jarić et al., 2018). The most frequent categories for which medicinal plants and their preparations are used are wounds, hemorrhoids, boils, and eczema, while they are also commonly applied for their antibacterial and anti-inflammatory activity contributing to skin healing. For example, Plantago major L. is the most cited species for the treatment of traumas, wounds, and boils while Urtica dioica L. is principally mentioned to be applied topically against eczemas. Among the preparation forms, ointment, decoction, compress, and poultice are some of the most representative and regularly comprise the basis for the formulation of commercial products employed widely to cure skin ailments (e.g., Histoplastin Red®, Contractubex Gel®). The Balkan Peninsula and the Mediterranean Sea appertain to an area characterized by a high plant biodiversity and an important tradition in folk medicine. The diversity of the flora and the presence of endemism are strongly connected to the geographical position, the climate, and the geological composition (Varga et al., 2019; Emre et al., 2021). Phytogeographical analysis of the study area shows that 51% of the taxa are “narrow” (restricted to the Balkan Peninsula and Italy or the Balkan Peninsula and Anatolia), and 49% are more widely distributed (Strid, 1986). Environmental heterogeneity is high in the Mediterranean basin and this contributes to the high vascular plant species richness, especially in the eastern Mediterranean, due to evolutionary history and past climate. In particular, Last Glacial Maximum climate may have significantly shaped the current longitudinal and altitudinal patterns of species and genetic diversity trend in the Mediterranean (Fady and Conord, 2010). More specifically, all four countries included in the present review are divided in different phytogeographical regions. The floristic regions of Greece are 13 and are represented by North East, North Central, Northern Pindos, East Central, Southern Pindos, Ionian Islands, Sterea Ellas, West Aegean Islands, Peloponnisos, Kiklades, North Aegean Islands, East Aegean Islands, Kriti, and Karpathos (Annotations [Internet], 2022). Turkey has various macro/micro climates and vegetation types along with three overlapping phytogeographic regions represented by the Euro-Siberian, the Mediterranean, and the Irano-Turanian (Özşahin et al., 2019). This combination of geography and geography with topographic and climatic variation (Çolak and Rotherham, 2006) results in unusual levels of plant diversity and endemism. The phytogeographical divisions of Cyprus are 8 and are defined by the following regions: Akamas peninsula, Troodos range, the South area around Limassol, Larnaca area, the east part of Central plain, the west part of Central plain, the northern slopes and peaks of Pentadactyllos, and Karpasia peninsula (Hadjichambis et al., 2004). The phytogeographical districts of Albania are represented by district of Berat, district of Burrel, district of Delvinë, district of Dibër, district of Elbasan, district of Kolonjë, district of Korçë, district of Lezhë, district of Librazhd, district of Mat, district of Përmet, district of Pogradec, district of Pukë, district of Sarandë, district of Tepelenë, district of Tirane, district of Tropojë, and district of Vlorë (Barina and Piškó, 2011). Despite the rich diversity and importance of flora as well as the presence of endemism in the study area, only a small proportion of the classified plants have been investigated and chemically characterized (Hoffmann et al., 2020). However, during the last years the therapeutic potential of an important number of medical plants traditionally used in dermatology has been explored, and some of them have been developed and approved as drugs or medical devices for the treatment of skin disorders (Tabassum and Hamdani, 2014). In defiance of all the prodigious advancements in modern phytochemical and medical research, ethnopharmacology of traditional medicinal plants in the Balkan and Southeast Mediterranean Region could be served as an important tool, providing a comprehensive approach to health systems in the countries of the area, preserving cultural diversity and strengthening the traditional medicine itself. The traditional practices and the ethno-botanical knowledge deriving from herbal manuscripts, could be exploited and used as a founding pillar, leading to the discovery of new bioactive natural products for the treatment of various problematic skin conditions. The aim of this review is to reveal, compare and contrast the traditional medical practices and the ethno-botanical knowledge of medicinal plants for the treatment of skin disorders in Albania, Cyprus, Greece, and Turkey. This was accomplished through a profound literature research on the ethnopharmaceutical field studies conducted in these four countries and through the listing of the information reported in order to collect the plant uses against problematic skin conditions. As a second target and to associate the bulk of ethnopharmaceutical data and confirm its expansion and diversification through centuries, we drew a parallel between the uses of the medicinal species reported against skin disorders in the articles we studied, and the ones mentioned in Dioscorides’ De Materia Medica for the same purpose.

Skin Disorders

The skin represents the largest organ of the integumentary system with a surface of 2 m². Its main function is to protect the underlying tissues such as muscles, bones, and internal organs. The skin is made up of a series of tissues of ectodermal and mesodermal origin and as a sequel of the orifices it continues with the respective mucous membranes forming a layer without interruptions. It is also characterized by an important distensibility and resistance (Anastasi et al., 2012). The skin acts as a protective envelope to the body and is closely connected to the underlying fascial endoskeleton through blood vessels, nerves, retinacular ligaments, and lymphatics. It consists of the epidermis which is mainly made of epithelial and is
the most superficial and biologically active of the skin’s layers. As the basal layer of the epithelium (stratum basale) is constantly renewing. The second skin layer is the dermis which is considered to be the “core” of the integumentary system and provides most of the mechanical strength to the skin. The dermis is composed by the papillary and the reticular, both composed by connective tissue with fibers of collagen. Finally, the hypodermis, also called the subcutaneous layer, mainly consists of loose connective tissue and connects the skin to the underlying fibrous tissue of the bones and muscles (Wong et al., 2016). Skin disorders represent a very common problematic event and can affect all individuals during their life. Even a slight and superficial wound can lead to more serious pathological states, and trigger conditions that are difficult to control such as secondary bacterial infections, failure or abnormal progression of the healing process that promotes chronic wounds or scar formation both aesthetically and functionally altered. Since ancient times, all populations— including the Balkans—used various medicinal plants as a remedy against problematic skin ailments. Traditional medical practices have represented for hundreds of years the only resource for skin care, and still today maintain a very important role thanks to the multitasking characteristics possessed by the phytocomplex (Gertsch, 2011). Skin diseases are classified in various ways. One of these is based on the next three factors: 1) site of involvement such as facial rashes, lesions on sun-exposed sites, 2) pathogenesis such as genetic abnormalities, infectious etiology, or autoimmune mechanisms, 3) main structure affected such as epidermal diseases, abnormalities of melanocytes, and vascular changes. These good-standing categorizations are getting enriched as the science of dermatology expands and evolves. The genetic predisposition and immune system represent two important factors that can affect the various classification methods. The most common symptoms that turn up and characterize a skin pathological condition, include pain which is manifested as stinging and/or burning, itch that may be sporadic or persistent, localized or generalized, as well as functional disability (Mphande, 2020).

Dioscorides and “De Materia Medica”

Over the last decades, research on medicinal plants has increasingly focused on the study of historical medico-botanical texts to identify plant species for further drug discovery and to comprehend the development of modern pharmacopoeias (Touwaide, 1992; Buenz et al., 2005; Leonti et al., 2010; Adams et al., 2011; Dal Cero et al., 2014). As a case in point, it is widely acknowledged that Dioscorides’ De Materia Medica has influenced and guided the development of Mediterranean and European traditional herbal medicine (Gurib-Fakim, 2006). Pedanius Dioscorides was born in Anazabra in the Cilicia Region of Anatolia in the first century A.D. It is known that he was a military physician in the Roman Army who travelled extensively in order to seek and explore medicinal substances to treat various ailments including skin diseases (Yildirim, 2013). Between AD 50 and 70, Dioscorides wrote his fundamental work that consists of a five-volume book in his native Greek, Περὶ ὀλῆς ἅτρικῆς (Peri hyles iatrikēs), known in Latin as De Materia Medica. Among many Greek manuscripts and texts, De Materia Medica, became the precursor to all modern pharmacopoeias and transmitted the idea that investigation and experimentation performs a crucial role for pharmacology (Rooney, 2012). De Materia Medica is the most important text of botany and pharmacognosy, as well as the most detailed pharmacognostic guide that passed down from the ancient Mediterranean world, representing the prime historical source of information about the medicines used by the Greeks, Romans and other ethnic groups of antiquity. De Materia Medica incorporates 800 chapters in which Dioscorides monographed 600 different kinds of plants, 35 animals, and 90 minerals, summarizing the quintessence of medicinal remedies. Moreover, it includes detailed information about those drugs, such as their medical activities, methods of administration, habitat and methods of cultivation, botanical descriptions also illustrated by plant drawings, contraindications, dosages, veterinary, and non-medical uses (Gunther, 1968). In addition, Dioscorides drew on previous writings, his own experience as a physician as well as on local traditions in the Mediterranean and the Near East. Based on geographical references in the text, Dioscorides’ compilation is thought to be the fruit of extensive journeys while the predominant but contentious view is that he travelled extensively throughout Anatolia, Egypt, Arabia, Persia, Gallia, North Africa, and Caucasus (Staub et al., 2016). De Materia Medica is the most comprehensive and systematic work on simple drugs. It was translated into Syriac, Arabic, and Persian, as well as Latin and manually copied along with the botanical illustrations. It served as a corner stone for both western and eastern pharmaceutical and herbal knowledge, exerting a profound influence on the development of medicine in the Near East as well as in Europe. De Materia Medica of Dioscorides was closely and extensively studied by many medical writers and doctors of the Eastern and Western cultures. That is justified by the fact that the herbal remedies of Pedanius Dioscorides were transmitted to mediaeval Europe and the special characteristics of Arabic therapy was the widespread employment of drugs of all kinds (Yildirim, 2013). During the Middle Ages, the manual copies became more stylized and started to differ from the original botanical illustrations so, at the present time, the certainty about the accuracy of some species is diminished, hence the suggestions concerning the plant species described (Gaur et al., 2021). The information obtained by Dioscorides’ manuscript have undoubtedly influenced the traditional medical practices of the Balkans and the Mediterranean basin from the aspect of medicinal plants usage for the treatment of various skin diseases.

Background History of the Study Area

Albania, Cyprus, Greece, and Turkey have long-standing historical and cultural ties linked to their geographical position, constant presence of their communities in Eastern Mediterranean, trade, and population movements. They share relations since antiquity, however this review is focused on the development of distinct medicinal plants commonly used against various skin ailments from the time of Dioscorides (i.e., the Roman Empire), through the Byzantine and the Ottoman Empire, to modern era. After the fall of Roman Empire,
Eastern Mediterranean region was under the control of Byzantium. During these centuries, medicinal plants’ therapeutic value was enriched by Arab herbal medicine, evolved, developed and preserved mainly through the transcription of herbals and codices by monks in monasteries (Iskaksal, 2005; Azaizeh et al., 2006; Pan et al., 2014). The Ottoman Empire specifically at its peak in the 16th and 17th centuries CE, controlled not only southwestern Europe, mainland Greece, and the Balkans, but also parts of northern Iraq, Azerbaijan, Syria, Palestine, parts of the Arabian Peninsula, Egypt, and parts of the North African strip, in addition to the major Mediterranean islands of Rhodes, Cyprus, and Crete (Khan, 2020). Under the Ottoman rule the populations coexisted and lived through their Byzantine heritage and were solidly influenced by each other regarding cultural issues including healing techniques and medicinal remedies. It is important to underline the interdependence of Cyprus, Albania, and Turkey with the Greek customs and traditions. In addition, the island of Cyprus was mainly part of the Byzantium, the Eastern Roman Empire. After the fall of Rome, the knowledge of Greek medicine survived in the Byzantium and during the times of the Ottoman Empire many Greek Orthodox monasteries featured well-organized hospitals of the Byzantine traditions. These hospitals employed pharmacists to gather medicinal plants and prepare remedies, originating from Greek folk medicinal practices (Littlewood et al., 2002). The only extensive manuscript of local origin in this respect, is “Iatrosophikon,” which is a monastic scripture from the Ottoman period that contains prescriptions written down by the monk Mitrophanous (1790–1867) at the Greek Orthodox monastery of Makhairas in Cyprus (Lardos, 2006). Another historical highlight related to the modern history of Greece and Albania that represents the base of the Greek-Albanian relationship is “Northern Epirus,” the status of the Greek minority in Albania (Dervishi, 2019). Northern Epirus is a term used to refer to those parts of the historical region of Epirus, in the western Balkans, which today are part of Albania. The term is used mostly by Greeks and is associated with the existence of a substantial ethnic Greek population in the region (Smith and Hurst, 1999). This population, which is present in the Albanian territory until nowadays, supports the interconnection of the two countries and continues the past cultural exchange. Moreover, during the 17th-19th centuries, Epirus became the most famous center of folk medicine in the Balkan Peninsula. In an environment of economic affluence accompanied by an impressive cultural and intellectual life, the art of herbal healing developed and flourished. The medicine practitioners of the area were called “Vikoyiatri” which means doctors that come from Vikos gorge, a mountainous area situated in Epirus (Vokou et al., 1993). During spring and summer, they used to travel all over the Balkans, up to Istanbul (Constantinople during the Byzantine times), Bulgaria, Romania, and Russia, while even the Sultan or other Turkish officers asked for their advice or help (Vokou et al., 1993). However, at the end of the 19th century with the introduction of “western drugs” in the pharmacopoeias they were considered as charlatans and their invaluable knowledge on herbal medicine faded away. The first official pharmacopoeia of the newly formed Greek state (1830) was written in Greek and Latin by Vouros I., Landerer X.J., and Sartori J. in 1837, and it was mainly a translation of the Bavarian one. Earlier efforts, including the General Pharmacopeia based on scripts of Dionysios Pyrros of Thessaly published in Istanbul by Brugnatelli in 1818, were not officially recognized. In 1831, Dionysios Pyrros published additionally a two-volume medical guide in which he described 450 medicines and 150 medicinal plants for the treatment of 362 ailments. Likewise, no recognition was made for the “Greek Pharmacopoeia” by Foteinou G., published in Ismir, Turkey, in 1835 (Karabelopoulos et al., 2004).

**METHODS**

Some of the most important scientific databases such as Scopus, PubMed, ScienceDirect, and Google scholar were browsed to perform a literature search in order to identify all the published ethnobotanical field studies conducted in Albania, Cyprus, Greece, and Turkey (Figure 1) up until May 2020. The search was carried out by employing specific keywords or their combinations. The keywords used were “ethnobotanical,” “ethnobotany,” “ethnopharmacological,” “ethnopharmacology,” “ethnomedical,” and “ethnomedicine,” followed by the word “Balkans” or the name of each country studied. Only published field studies that included interviews with informants were considered, so published reviews such as the important work of Jarić et al. (2018) or the study of Iatrosophikon manuscript by Lardos (2006) were excluded from this review. Through the extensive literature search, data concerning 128 published ethnobotanical field studies were found and elaborated. Most of the studies (Paksoy et al., 2016) concerned traditional medicine in Turkey, 14 studies referred to Greece, 7 studies to Albania and 5 studies to Cyprus. The data relative to plant uses against skin disorders were manually retrieved from each study and recorded as multiple entries in an Excel file (.xlsx format). Afterwards, data for each species were merged in a single row with multiple columns including the botanical name, the vernacular name, the family, the country, and the region where the ethnobotanical study has been conducted, the plant part used, the preparation form with eventual details in case of a recipe and the ailments treated or the therapeutic effects. The skin diseases extracted from the publications were summarized and classified based on the terminology used in dermatology and grouped in 37 different categories (Table 1). In order to facilitate the data elaboration, plant subspecies were clustered with their corresponding species, when applicable. In addition, the botanical names of the plants reported were validated through the databases “The Plant List” (The Plant List [Internet], 2013) and “The Global Biodiversity Information Facility” (GBIF.org [Internet], 2020). If the original plant name from the references is a synonym of an accepted species, it is mentioned in parenthesis e.g., Centaurea cyanus L. (synonym of Cyanus segetum Hill), where Cyanus segetum Hill is the accepted species and Centaurea cyanus L. the synonym. Furthermore, synonyms
of an accepted species, that was already reported in a study, are also mentioned in parenthesis, e.g., *Allium ampeloprasum* L. (= *Allium porrum* L.). Data curation and statistical analysis was performed in EXCEL.

**RESULTS AND DISCUSSION**

**Plant Species Reported in Ethnobotanical Research of the Study Area**

The bibliographical analysis indicated a total of 967 taxa belonging to 418 different genera and 111 different families that were used against skin related diseases. Specifically, 27 different families are reported in Albania, 40 in Cyprus, 74 in Greece, and 110 in Turkey (Figure 2).

Out of 111 different families reported, the families mostly cited were Asteraceae (542 uses, 11.7%), Lamiaceae (345 uses, 7.4%), Rosaceae (312 uses, 6.7%), Plantaginaceae (252 uses, 5.4%), Malvaceae (177 uses, 3.8%), Urticaceae (154 uses, 3.3%), Hypericaceae (142 uses, 3.1%), Moraceae (118 uses, 2.5%), Fabaceae (109 uses, 2.3%), Boraginaceae (108 uses, 2.3%), Juglandaceae (107 uses, 2.3%), Pinaceae (103 uses, 2.2%), Euphorbiaceae (100 uses, 2.2%), Apiaceae (89 uses, 1.9%), Solanaceae (85 uses, 1.8%), Adoxaceae (82 uses, 1.8%), Anacardiaceae (75 uses, 1.6%), Papaveraceae (73 uses, 1.6%), and Polygonaceae (72 uses, 1.6%). The families Lamiaceae, Apiaceae, and Anacardiaceae were reported in three of the four countries (Cyprus, Greece, and Turkey), as well as Adoxaceae (Albania, Greece, and Turkey), Boraginaceae only in two countries (Greece and Turkey), while the rest are present in ethnobotanical studies conducted in all four countries (Figure 3).

Many different ways of preparation were reported. The most cited ones were decoction or infusion, taken as a drink or used externally. Other methods reported were using plants to prepare a poultice, an ointment, a compress, or just using the plant externally. A total of 3,947 reports on plant parts were reported. The most cited plant parts used were the leaves (1105 reports, 28.0%), the aerial parts (525 reports, 13.1%), the fruits (457 reports, 11.6%), the flowers/inflorescence (396 reports, 10.0%), the roots/rhizome/radix (369 reports, 9.3%), the whole space plant/herb (252 reports, 6.4%), the seeds (184 reports, 4.7%), the stems (148 reports, 3.7%), the latex (133 reports, 3.4%), the bark (128 reports, 3.2%), and the resin (74 reports, 1.9%). Other parts used, including bulbs and essential oils had 176 reports (4.5%) (Figure 4).

In Figure 5 the most cited genera in relation to their total use in skin related diseases are shown, along with the number of reported taxa of the same genus. These are *Plantago* L. sp. (5 taxa, 242 uses, 5.2%), *Urtica* L. sp. (4 taxa, 146 uses, 3.1%), *Hypericum* L. sp. (15 taxa, 142 uses, 3.1%), *Malva* L. sp. (5 taxa, 124 uses, 2.7%), *Allium* L. sp. (12 taxa, 120 uses, 2.6%), *Juglans* L. sp. (1 taxon, 107 uses, 2.3%), *Euphorbia* sp. (23 taxa, 97 uses, 2.1%), *Achillea* L. sp. (15 taxa, 96 uses, 2.1%), *Rosa* L. sp. (10 taxa, 93 uses, 2.0%), *Sambucus* sp. (2 taxa, 85 uses, 1.8%), *Ficus* L. sp. (2 taxa, 73 uses, 1.6%), *Pinus* L. sp. (5 taxa, 73 uses, 1.6%), *Juniperus* L. sp. (7 taxa, 64 uses, 1.4%), *Verbascum* L. sp. (22 taxa, 54 uses, 1.2%), *Rubus* L. sp. (9 taxa, 79 uses, 1.7%), *Teucrium* L. sp. (5 taxa, 56 uses, 1.2%), *Laurus* L. sp. (1 taxon, 47 uses, 1.0%), *Salvia* L. sp. (15 taxa, 47 uses, 1.0%), *Prunus* L. sp. (11 taxa, 45 uses, 1.0%), and *Morus* L. sp. (3 taxa, 45 uses, 1.0%). Genera *Teucrium* L. and *Morus* L. were reported in only two countries, Greece and Turkey, as well as *Prunus* L. sp. that was reported only in Albania and Turkey. *Rubus* L. sp. was reported in three of the countries (Albania, Greece, and Turkey), as well as *Laurus* L. sp. and *Salvia* L. sp. (Cyprus, Greece, and Turkey), while the rest were reported in ethnobotanical studies conducted in all four countries. Specifically, 45 different genera are reported in Albania, 70 in Cyprus, 168 in Greece, and 383 in Turkey.

The most cited plants species used for the treatment of skin ailments were *Plantago major* L. (140 uses, 3.0%), *Juglans regia* L. (107 uses, 2.3%), *Urtica dioica* L. (101 uses, 2.2%), *Hypericum perforatum* L. (81 uses, 1.7%), *Plantago lanceolata* L. (80 uses, 1.7%), *Ficus carica* L. (72 uses, 1.6%), *Allium cepa*
L. (62 uses, 1.3%), *Rosa canina* L. (62 uses, 1.3%), *Malva neglecta* Wallr. (59 uses, 1.3%), *Malva sylvestris* L. (59 uses, 1.3%), *Sambucus ebulus* L. (48 uses, 1.0%), *Laurus nobilis* L. (47 uses, 1.0%), *Juniperus oxycedrus* L. (40 uses, 0.9%), *Olea europaea* L. (39 uses, 0.8%), *Sambucus nigra* L. (37 uses, 0.8%), *Allium sativum* L. (36 uses, 0.8%), *Vitis vinifera* L. (35 uses, 0.8%), *Achillea millefolium* L. (35 uses, 0.8%), *Matricaria chamomilla* L. (34 uses, 0.7%), and *Rubus sanctus* Schreb. (32 uses, 0.7%). It is important to underline that *P. major*, *U. dioica*, *R. canina*, and *S. ebulus* were reported in ethnobotanical studies in three of the four countries of the study area (Albania, Greece, and Turkey), as well as *L. nobilis*, and *M. chamomilla* (Cyprus, Greece, and Turkey). *J. oxycedrus* and *R. sanctus* were reported in ethnobotanical studies in two countries (Greece and Turkey), *M. neglecta* was reported only in Turkey, while the rest of the plants are used in all four countries (Figure 6).

| TABLE 1 | Skin diseases extracted from literature data and grouped in 37 categories in alphabetical order. |
|---|---|
| Skin diseases | Ailment group |
| Acne, Pimples, Over production of sebum, Oily skin | G1 |
| Alopecia, Hair loss, Baldness, Hair follicle stimulator, Hair loss prevention | G2 |
| Anti-bleeding, Hemostatic, Blood stopper, Nose bleeding, Antihemorrhagic, Epistaxis | G3 |
| Antifungal, Antibacterial, Dermatophyte, Mycодermatitis, Antiseptic, Disinfectant, Mycosis, Fumigant, Germicidal, Cleaning of the foulness of ulcers | G4 |
| Anti-inflammatory | G5 |
| Aphthae, Stomatitis, Mouth sores | G6 |
| Blisters, Vesicle | G7 |
| Body itch, Urticaria, Prickly Heat, Pruritus | G8 |
| Boils, Abscess, Carbuncle, Furuncles, Ingrown hair, Infamed wound, Fistulas, F felon | G9 |
| Bruises, Contusions, Ecchymosis, Purplesness | G10 |
| Callouses | G11 |
| Cellulites | G12 |
| Chloasma, Skin lighter, Freckies, Vitiligo, Pigmentation | G13 |
| Dandruff | G14 |
| Deplatory | G15 |
| Dog bite, Snake bite, Insect stings, Bee bite | G16 |
| Eczema | G17 |
| Emollient, Moisturizer | G18 |
| Erysipelas | G19 |
| Excrescences (warts, raised moles), Verruca, Moles, Skin Tumors | G20 |
| Gout | G21 |
| Hemorrhoids, Piles | G22 |
| Herpes, Papilloma | G23 |
| Keratoletic | G24 |
| Lice infestation, Pediculosis, Parasitical skin diseases | G25 |
| Peeling of facial skin, Flaking of facial skin, Exfoliation | G26 |
| Psoriasis | G27 |
| Rash, Facial skin eruption, Erythema, Intertrigo | G28 |
| Ringworm, Lichens | G29 |
| Scabies | G30 |
| Scars, Stretch marks, Blemishes | G31 |
| Skin ailments, Skin diseases, Skin disorders (undefined) | G32 |
| Sores, Trauma, Injury, Wounds (burn wound, septic wounds, festering wounds), Fissure, Chapped, Cracks, Scor | G33 |
| Lesions, Cleft, Cutaneous eruption, Scalds, Kibes, Vulnerary, Ocicatizing | G34 |
| Styptic, Astringent | G35 |
| Sweat | G36 |
| Whitlow, Swelling, Edema | G37 |
| Wrinkled skin | G38 |

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| Anti-inflammatory | G5 |
| Aphthae, Stomatitis, Mouth sores | G6 |
| Blisters, Vesicle | G7 |
| Body itch, Urticaria, Prickly Heat, Pruritus | G8 |
| Boils, Abscess, Carbuncle, Furuncles, Ingrown hair, Infamed wound, Fistulas, F felon | G9 |
| Bruises, Contusions, Ecchymosis, Purplesness | G10 |
| Callouses | G11 |
| Cellulites | G12 |
| Chloasma, Skin lighter, Freckies, Vitiligo, Pigmentation | G13 |
| Dandruff | G14 |
| Deplatory | G15 |
| Dog bite, Snake bite, Insect stings, Bee bite | G16 |
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| Emollient, Moisturizer | G18 |
| Erysipelas | G19 |
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| Acne, Pimples, Over production of sebum, Oily skin | G1 |
| Alopecia, Hair loss, Baldness, Hair follicle stimulator, Hair loss prevention | G2 |
| Anti-bleeding, Hemostatic, Blood stopper, Nose bleeding, Antihemorrhagic, Epistaxis | G3 |
| Antifungal, Antibacterial, Dermatophyte, Mycодermatitis, Antiseptic, Disinfectant, Mycosis, Fumigant, Germicidal, Cleaning of the foulness of ulcers | G4 |
| Anti-inflammatory | G5 |
| Aphthae, Stomatitis, Mouth sores | G6 |
| Blisters, Vesicle | G7 |
| Body itch, Urticaria, Prickly Heat, Pruritus | G8 |
| Boils, Abscess, Carbuncle, Furuncles, Ingrown hair, Infamed wound, Fistulas, F felon | G9 |
| Bruises, Contusions, Ecchymosis, Purplesness | G10 |
| Callouses | G11 |
| Cellulites | G12 |
| Chloasma, Skin lighter, Freckies, Vitiligo, Pigmentation | G13 |
| Dandruff | G14 |
| Deplatory | G15 |
| Dog bite, Snake bite, Insect stings, Bee bite | G16 |
| Eczema | G17 |
| Emollient, Moisturizer | G18 |
| Erysipelas | G19 |
| Excrescences (warts, raised moles), Verruca, Moles, Skin Tumors | G20 |
| Gout | G21 |
| Hemorrhoids, Piles | G22 |
| Herpes, Papilloma | G23 |
| Keratoletic | G24 |
| Lice infestation, Pediculosis, Parasitical skin diseases | G25 |
| Peeling of facial skin, Flaking of facial skin, Exfoliation | G26 |
| Psoriasis | G27 |
| Rash, Facial skin eruption, Erythema, Intertrigo | G28 |
| Ringworm, Lichens | G29 |
| Scabies | G30 |
| Scars, Stretch marks, Blemishes | G31 |
| Skin ailments, Skin diseases, Skin disorders (undefined) | G32 |
| Sores, Trauma, Injury, Wounds (burn wound, septic wounds, festering wounds), Fissure, Chapped, Cracks, Scor | G33 |
| Lesions, Cleft, Cutaneous eruption, Scalds, Kibes, Vulnerary, Ocicatizing | G34 |
| Styptic, Astringent | G35 |
| Sweat | G36 |
| Whitlow, Swelling, Edema | G37 |
| Wrinkled skin | G38 |

| Skin ailments, Skin diseases, Skin disorders (undefined) | G32 |
FIGURE 3 | Most cited families in relation to skin ailment reports.

FIGURE 4 | Most cited plant parts in relation to skin ailment reports.
FIGURE 5 | Most cited genera in relation with their corresponding taxa.

FIGURE 6 | Most cited plant species in relation to skin ailment reports.
A total of 4,645 reports of skin related ailments were catalogued. The most cited categories identified in the studies were wounds etc. (G33, 1028 reports, 22.1%), hemorrhoids etc. (G22, 684 reports, 14.7%), antibacterial etc. (G4, 422 reports, 9.1%), boils etc. (G9, 383 reports, 8.2%), eczema (G17, 278 reports, 6.0%), anti-inflammatory (G5, 228 reports, 4.9%), antibleeding etc. (G3, 173 reports, 3.7%), excrescences etc. (G20, 162 reports, 3.5%), general skin ailments (G32, 139 reports, 3.0%), dog bites etc. (G16, 135 reports, 2.9%), and alopecia etc (G2, 134 reports, 2.9%) (Figure 7).

Finally, out of 37 different skin ailment groups, the plants used for the treatment of most of them were *J. regia* (25 different skin ailment groups), *L. nobilis* (18 groups), *M. sylvestris* (18 groups), *U. dioica* (18 groups), *P. major* (16 groups), *A. sativum* (15 groups), *H. perforatum* (15 groups), *Cichorium intybus* L. (14 groups), *M. chamomilla* (14 groups), *O. europaea* (14 groups), *P. nigra* (14 groups), *P. lanceolata* (14 groups), *R. canina* (14 groups), *S. ebulus* (14 groups), *V. vinifera* (14 groups), *A. millefolium* (13 groups), *A. cepa* (13 groups), *Chelidonium majus* L. (13 groups), *Myrtus communis* L. (13 groups), *F. FIGURE 7 | Most cited ailment categories (G33 is Wounds etc., G22 is Hemorrhoids etc., G4 is Antibacterial etc., G9 is Boils etc., G17 is Eczema, G5 is Anti-Inflammatory, G20 is Excrescences etc., G3 is Antibleeding etc., G32 is General skin ailments, and G16 is Dog bites etc.).

![Figure 7](image-url)
carica (12 groups), J. oxycedrus (12 groups), and S. nigra (12 groups). Most of these plants comprise the most cited plants as well, with the exception of P. nigra which was reported only in Turkey, C. intybus which was reported in Greece and Turkey and H. perforatum and C. majus which were reported in ethnobotanical studies in all four countries (Figure 8).

Plant Species Reported in Dioscorides “De Materia Medica”

The extensive study of Dioscorides’ manuscript, translated in English by Osbaldeston and Wood (Dioscorides et al., 2000) led to the discovery of 289 different entries in respect of treatments against skin related problems. Each entry contained suggested modern botanical names for the plants described by Dioscorides. The suggested plant names reported in each entry were validated by the databases and were eventually consolidated into 275 different entries, since several entries corresponded to the same plant species. The method of cataloguing each entry was performed in the same way as in the analysis of the field studies described above.

The suggested species with the highest number of reported uses among all the aliment categories (Figure 9) were V. vinifera L. (19 groups), O. europaea L. (16 groups), Brassica napus L. (12 groups), Bryonia cretica subsp. dioica (Jacq.) Tutin (12 groups), Gagea lutea (L.) Ker Gawl. (12 groups), M. communis L. (12 groups), P. major L., P. minor L.) (12 groups), A. sativum L., Allium xiphopetalum Aitch. & Baker, Allium ursinum L., Allium vineale L., Allium ampeloprasum L. (11 groups), F. carica L. (11 groups), Rhus coriaria L. (11 groups), Lens culinaris Medik. (10 groups), Potentilla alba L., Potentilla pimpinellifolii L., Potentilla tabernaemontani Asch., Potentilla heptaphylla L., Potentilla hirta L. (10 groups), Prunus dulcis (Mill.) D.A.Webb (10 groups), Triticum aestivum L., Triticum turgidum L. (10 groups), Clematis vitalba L. (9 groups), Lathyrus sativus L., Lathyrus sylvestris L. (9 groups), Lupinus albus L., Lupinus angustifolius L., Lupinus micranthus Guss. (9 groups),

Peganum harmala L., Ruta angustifolia Pers., Ruta chalepensis L., Ruta graveolens L. (9 groups), Portulaca oleracea L. (9 groups), and Terminalia citrina Roxb. ex Fleming, Balanites aegytiaca (L.) Delile (9 groups), while the preparation methods were similar to the ones used today.

The skin ailments described in De Materia Medica were also clustered in 37 different groups (Table 1), with the addition of the category “Leprosy” (G38), in order to obtain a better comparison with the skin ailment groups described in modern ethnobotanical field studies. The lack of data concerning Leprosy (G38) in the modern ethnobotanical studies can be attributed to the fact that leprosy greatly diminished in the study area around 1960 (Kyiakis et al., 1994; Lechat et al., 2002; Reibel et al., 2015).

A total 1,042 reports were recorded. In Figure 10, the most cited ailment categories treated according to Dioscorides are shown. These are wounds etc. (G33, 157 reports 15.1%), dog bites etc. (G15, 127 reports, 12.2%), antibacterial etc. (G4, 72 reports, 6.9%), anti-
inflammatory (G5, 67 reports, 6.4%), boils etc. (G8, 66 reports, 6.3%), excrescences etc. (G19, 65 reports, 6.2%), whitlow etc. (G36, 58 reports, 5.6%), leprosy (G38, 49 reports, 4.7%), and syphic (G34, 35 reports, 3.4%). Three groups, such as cellolites (G11), keratolysis (G23) and general skin ailments (unde 58 reports, 5.6%), leprosy (G38, 49 reports, 4.7%) which is 6.3%), excrescences etc. (G19, 65 reports, 6.2%), whitlow etc. (G36, 49 reports, 4.7%).

It is important to mention that 19 of the 22 most reported plants used for the treatment of most of the skin ailment groups used in traditional medicine in Greece are shown, along with their corresponding families. A comparison of the occurrence of these plants was also carried out between Greece, Albania, Cyprus, Turkey, and Dioscorides’ De Materia Medica. The number of their total uses against skin ailment categories in the study area was calculated.

The percentage of common taxa reported between the ethnobotanical studies conducted in Greece and Albania is 14.4% (31 taxa), Greece and Cyprus is 22.8% (49 taxa), and Greece and Turkey is 63.3% (136 taxa), while between Greece and those mentioned in Dioscorides’ De Materia Medica is 48.8% (105 taxa). The percentage of common taxa reported between the ethnobotanical studies conducted in Greece and those conducted in Albania and Cyprus is low, even though they are countries with high historical and cultural connections, as aforementioned. This can be justified considering that since not many ethnobotanical studies have been carried out in Albania (7 studies) and Cyprus (5 studies), many plants have not yet been recorded, even though they may be used for the treatment of skin diseases nowadays. This conclusion can be strengthened by the fact that only 29 and 40 different families including 60 and 82 different taxa respectively have been reported in these two countries up to now.

On the other hand, even though the number of ethnobotanical studies conducted in Turkey (103 studies with 859 different taxa) is vastly higher than those conducted in Greece (13 studies with 215 different taxa), the percentage of common taxa reported is high. This could be due to geomorphological factors, floristic similarities, as well as historical and cultural reasons. Turkey is part of the continent of Asia and Europe, while Greece represents the tip of a peninsula appertaining to the continent of Europe. Greece, in spite of its small territory, has the richest flora in Europe, in terms of plant biodiversity per area unit and one of the richest worldwide. The wide geological history, the presence of different rock substrates (limestones, schists, and granite serpentines) and the complicated topography represent some of the factors that contribute to the floristic variety and diversity (Strid, 1986). The Turkish flora consists of at least 6,700 species and subspecies and over 22% are endemic (Dimopoulos et al., 2016). Turkey, on the other hand, extends through a vast geographical area including coastal landmarks (Mediterranean and Black sea), desert plains, lakes and highlands with mountain steppes (Kuzucuoğlu et al., 2019). A considerable number of the Greek mountain plants are also found in Turkey, while taxa restricted to the Balkan Peninsula and Anatolia constitute between 12 and 22% of the narrowly distributed taxa or between 4 and 9% of the total mountain flora of Greece. The Anatolian element is mostly represented in the North East and in Crete (22 and 21% of the “narrow” respectively) and is significantly smaller in the Pindhos and North Central (12%–14%). The percentage of “Turkish” species in the Greek mountain flora is thus roughly three times as high as the percentage of “Greek” species in the Turkish mountain flora. The migratory pressure from east to west is much greater than that from west to east (Strid, 1986). Moreover, inhabitants of the European part, as well as those of the Mediterranean coastline of Turkey have been in constant contact with people from the

### Table 2 | Species used in most ailment categories in the contemporary ethnobotanical studies which are also reported for the same uses in Dioscorides’ manuscript.

| Plant species | Common ailment categories |
|---------------|---------------------------|
| Juglans regia | G2, G4, G5, G9, G16, G33 |
| Botanical name       | Family          | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|----------------------|-----------------|---------|--------|--------|--------------------------------------|------------|
| Abutilon theophrasti Medik. | Malvaceae       |         |        |        | G33 (1)                              |            |
| Achillea holosericea Sm. | Asteraceae      | +       | +      |        | G1 (4), G2 (2), G3 (6), G4 (2), G5 (2), G9 (2), G17 (1), G22 (3), G26 (1), G28 (1), G32 (1), G33 (9), G34 (1) |            |
| Achillea millefolium L. | Asteraceae      | +       | +      | +      | G33 (1)                              |            |
| Acinos suaveolens (Sm.) G. Don ex Loudon [synonym of Clinopodium suaveolens (Sm.) Kuntze] | Lamiaceae       |         |        |        | G4 (1), G33 (1)                      |            |
| Adiantum capillus-veneris L. | Pteridaceae     | +       | +      | +      | G1 (1), G2 (2)                       |            |
| Aesculus hippocastanum L. | Sapindaceae     | +       | +      | +      | G16 (1), G22 (2)                     |            |
| Agrimonia eupatoria L. | Rosaceae        | +       | +      | +      | G4 (2), G5 (2), G16 (1), G22 (1), G33 (4), G34 (2), G36 (1) |            |
| Ajuga reptans L. | Lamiaceae       |         |        |        | G5 (1), G33 (1)                      |            |
| Alchemilla vulgaris L. | Rosaceae        |         |        |        | G3 (1)                               |            |
| Alkanna tinctoria (L.) Tausch | Boraginaceae    | +       | +      | +      | G1 (1), G8 (1), G16 (1), G22 (3), G33 (3) |            |
| Allaria officinalis Andr. ex DC. [synonym of Allaria petiolata (M.Bieb.) Cavara & Grande] | Brassicaceae     |         |        |        | G17 (1)                              |            |
| Allium ampeloprasum L. (= Allium porrum L.) | Amaryllidaceae  | +       | +      | +      | G1 (1), G22 (2), G33 (1)              |            |
| Allium cepa L. | Amaryllidaceae  | +       | +      | +      | G2 (1), G4 (3), G5 (3), G6 (1), G9 (16), G10 (12), G16 (1), G22 (2), G25 (1), G31 (2), G32 (1), G33 (18), G36 (4) |            |

(Continued on following page)
| Botanical name | Family                  | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) ± | References                                                                                                                                 |
|----------------|-------------------------|---------|--------|--------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| **Allium sativum L.** | Amaryllidaceae           | +       | +      | +      | G2 (6), G4 (4), G5 (2), G8 (1), G9 (1), G10 (1), G16 (6), G17 (1), G22 (5), G23 (1), G28 (1), G29 (4), G33 (2), G33 (1), G34 (1) | Akgül et al. (2016); Karakaya et al. (2019); Hanlidou et al. (2004); Pieroni and Sökükand, (2017); Çakıcıoğlu and Türkoğlu, (2009); Güzel et al. (2015); Gürbüz et al. (2001); Pieroni et al. (2006); Pieroni et al. (2014); Pieroni et al. (2014b); Yöney et al. (2010); Yeşilada et al. (1995); Yeşilada et al. (1999); Ezer and Mumcu Arisan, (2006); Kültür, (2007); Hayta et al. (2014); Uzun and Kaya, (2016); Karaman and Kocabas, (2001); Gözüm and Unsal, (2004); Uzun et al. (2004); Tuzlaci and Bulut, (2007); Uğur and Seçmen, (2008); Tuzlaci et al. (2010); Bulut and Tuzlaci, (2015); Yeşilada et al. (1999); Yeşilada et al. (1999); Ezer and Mumcu Arisan, (2006); Kültür, (2007); Hayta et al. (2014); Uzun and Kaya, (2016); Karaman and Kocabas, (2001); Gözüm and Unsal, (2004); Uzun et al. (2004); Tuzlaci and Bulut, (2007); Uğur and Seçmen, (2008); Tuzlaci et al. (2010); Bulut and Tuzlaci, (2015); Korkmaz and St, (2015); Paksay et al. (2016) Malamias and Maresolos, (1992) |
| **Allium sphaerocephalum L.** | Amaryllidaceae           |         | +      |         | G16 (1)                                   | Malamas and Marselos, (1992)                                                                                                                                                                      |
| **Aloe vera (L.) Burm.f.** | Xanthorrhoeaceae         | +       |        | +      | G2 (1), G4 (2), G8 (1), G9 (1), G16 (1), G17 (1), G28 (1), G30 (1), G32 (1), G33 (5) | Hanlidou et al. (2004); Yöney et al. (2010); Karousou and Deirmentzoglou, (2011); Adamidou, (2012); Lardos and Heinrich, (2013); Güler et al. (2015a); Güzel et al. (2015); Tsioutsiou et al. (2019) Güzel et al. (2015); Petrakou et al. (2020) |
| **Aloysia citriodora Palau** | Verbenaceae              |         |        | +      | G4 (1), G12 (1), G22 (1)                   | Adamidou, (2012); Lardos and Heinrich, (2013); Güler et al. (2015a); Petrakou et al. (2020)                                                                                                                                                                 |
| **Althaea officinalis L.** | Malvaceae                |         |        | +      | G1 (2), G6 (4), G9 (1), G16 (1), G18 (1), G28 (1), G33 (1) | Brussell, (2004); Güzel et al. (2015)                                                                                                                                                               |
| **Amaranthus retroflexus L.** | Amaranthaceae            |         |        |        | G3 (1)                                   | Axiotis et al. (2018)                                                                                                                                                                             |
| **Anagallis arvensis L. var. caerulea (L.)** | Primulaceae              | +       |        |        | G4 (1), G33 (1)                           | Brussell, (2004); Güzel et al. (2015)                                                                                                                                                               |
| **Anethum graveolens L.** | Apiaceae                 |         |        |        | G2 (1), G3 (1), G4 (1), G16 (1), G22 (1) | Pieroni et al. (2005b); Akaydin et al. (2013); Sargin et al. (2013); Akgül et al. (2016); Petrakou et al. (2020)                                                                                   |
| **Apium graveolens L.** | Apiaceae                 | +       |        |        | G5 (1), G29 (1), G33 (1)                   | Hanlidou et al. (2004); Everest and Oztürk, (2005); Güler et al. (2015a); Tuzlaci and Aymaz, (2001); Hanlidou et al. (2004); Güler et al. (2015a); Tsioutsiou et al. (2019) Petrakou et al. (2020) |
| **Arbutus unedo L.** | Ericaceae                | +       |        |        | G4 (2), G22 (1)                           | Koral and Yılmaz, (1993); Yeşilada et al. (1999); Yeşilada et al. (1999); Brussell, (2004); Kargioglu et al. (2008); Atlung and Oztürk, (2011); Kaval et al. (2014); Mükemre et al. (2015) |
| **Arctium lappa L.** | Asteraceae               | +       |        |        | G9 (1), G33 (1)                           | Hanlidou et al. (2004); Petrakou et al. (2020)                                                                                          |
| **Arctium minus (Hill) Bernh.** | Asteraceae               | +       |        |        | G1 (1), G2 (1), G4 (1), G5 (4), G9 (4), G16 (1), G22 (2), G33 (2) | Tabata et al. (1994); Fujita et al. (1996); Sezik et al. (1997); Tuzlaci and Erol, (1999); Yeşilada et al. (1999); Brussell, (2004); Kargioglu et al. (2008); Atlung and Oztürk, (2011); Kaval et al. (2014); Mükemre et al. (2015) |
| **Arnica montana L.** | Asteraceae               |         |        |        | G10 (1), G32 (1), G33 (2)                 | Hanlidou et al. (2004); Petrakou et al. (2020)                                                                                          |
| **Artemisia absinthium L.** | Asteraceae               | +       |        |        | G2 (1), G4 (3), G5 (6), G8 (1), G9 (1), G16 (1), G17 (1), G22 (1), G33 (8), G37 (1) | Voikou et al. (1993); Karaman and Kocabas, (2001); Hanlidou et al. (2004); Uzun et al. (2004); Everest and Oztürk, (2005); Kültür, (2007); Karousou and Deirmentzoglou, (2011); Özudor et al. (2011); Pieroni et al. (2014b); Ahmet Sargin, (2015); Sargin et al. (2015a); Mükemre et al. (2015) |

(Continued on following page)
**TABLE 3** | (Continued) Taxa reported in Greek ethnobotanical field studies, cross-referenced with the other countries and *De Materia Medica*.

| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|----------------|--------|---------|--------|--------|--------------------------------------|------------|
| *Artemisia arborescens* (Vail.) L. | Asteraceae | +       |         |        | G4 (1), G33 (1)                        | Axiotis et al. (2018) |
| *Arum italicum* Mill. | Araceae |         | +      |        | G9 (1), G16 (2), G17 (2), G22 (4), G33 (1) | Vokou et al. (1993); Yeğilada et al. (1999); Ecevit Genç and Özhataş, (2006); Tuzlaci and Alpaslan, (2007); Pieroni, (2017); Gürbüz et al. (2019) |
| *Asphodeline lutea* (L.) Richb. | Xanthorrhoeaceae | +       |         |        | G2 (1), G22 (1), G29 (1), G34 (1)     | Brussell, (2004); Kargioglu et al. (2008) |
| *Asphodelus aestivus* Brot. | Xanthorrhoeaceae | +       |         |        | G8 (1), G17 (2), G22 (7), G27 (1), G30 (1), G32 (1), G33 (9) | Tuzlaci and Aymaz, (2001); Tuzlaci and Bulut, (2007); Tuzlaci and Sadiçoğlu, (2007); González-Tejero et al. (2008); Ugulu and Secmen, (2008); Ugulu et al. (2009); Polat and Sarı, (2012); Uysal et al. (2012); Gördal and Kültür, (2013); Bulut and Tuzlaci, (2015); Güzeli et al. (2015); Bulut, (2016); Axiotis et al. (2018) |
| *Betula pendula* Roth | Betulaceae | +       |         |        | G12 (1)                              | Brussell, (2004); González-Tejero et al. (2008); Sargin et al. (2013); Sargin et al. (2015a); Korkmaz et al. (2016a); Uzun and Kaya, (2016); Axiotis et al. (2018); Papageorgiou et al. (2020) |
| *Calendula arvensis* M.Bieb. | Asteraceae | +       |         |        | G4 (1), G9 (1), G17 (1), G20 (2), G22 (1), G28 (2), G32 (3), G33 (3), G36 (1) | Brussell, (2004); González-Tejero et al. (2008); Sargin et al. (2013); Sargin et al. (2015a); Korkmaz et al. (2016a); Uzun and Kaya, (2016); Axiotis et al. (2018); Papageorgiou et al. (2020) |
| *Calendula officinalis* L. | Asteraceae | +       |         |        | G1 (2), G2 (1), G4 (3), G10 (2), G16 (1), G17 (3), G20 (2), G27 (2), G31 (1), G33 (4) | Brussell, (2004); Hanlidou et al. (2004); Kültür, (2007); Ugulu et al. (2009); Yöney et al. (2010); Ünsal et al. (2010); Karousou and Deirmentzoglou, (2011); Yeşilyurt et al. (2017); Petrakou et al. (2020) |
| *Calendula sp.* Asteraceae | +       |         |        |        | G16 (1), G28 (1), G33 (1)              | Adamidou, (2012) |
| *Calluna vulgaris* (L.) Hull | Ericaceae | +       |         |        | G6 (1), G36 (1)                        | Ahmet Sargin, (2015); Petrakou et al. (2020) |
| *Camellia sinensis* (L.) Kuntze | Theaceae | +       |         |        | G16 (1), G37 (1)                       | Hanlidou et al. (2004); Korkmaz et al. (2016a) |
| *Capsella bursa-pastoris* (L.) Medik. | Brassicaceae | +       |         |        | G3 (9), G22 (1), G32 (1), G33 (4), G34 (3) | Brussell, (2004); Everett and Ozturk, (2005); González-Tejero et al. (2008); Ugulu et al. (2009); Cakicioglu and Turkoglu, (2010); Ünsal et al. (2010); Altundag and Ozturk, (2011); Cakicioglu et al. (2011); Bulut and Tuzlaci, (2013); Sargin et al. (2013); Charalampidou, (2014); Ahmet Sargin, (2015); Güler et al. (2015b); Güzeli et al. (2015); Axiotis et al. (2018); Sargin and Büyüközcengiz, (2019); Güler et al. (2020) |
| *Cardopatium corymbosum* (L.) Pers. | Asteraceae | +       |         |        | G4 (2), G33 (2)                        | Pieroni et al. (2006); Tuzlaci and Bulut, (2007); Papageorgiou et al. (2020) |
| *Carthamus lanatus* L. | Asteraceae | +       |         |        | G32 (1), G33 (1)                       | Axiotis et al. (2018) |
| *Centaurea cyanus* L. (synonym of *Cyanus segetum* Hill) | Asteraceae | +       |         |        | G4 (1)                               | Axiotis et al. (2018) |
| *Centaurium erythraea* Rafn | Gentianaceae | +       |         |        | G4 (1), G5 (1), G17 (2), G22 (2), G32 (1), G33 (4) | Tuzlaci and Tolon, (2000); Tuzlaci and Aymaz, (2001); Everett and Ozturk, (2005); Ecevit Genç and Özhataş, (2006); González-Tejero et al. (2008); Sargin et al. (2013); Karci et al. (2017); Axiotis et al. (2018) |
| *Centella asiatica* (L.) Urb. | Apiaceae | +       |         |        | G12 (2), G22 (1)                       | Hanlidou et al. (2004); Petrakou et al. (2020) |
| *Cerastium glomeratum* Thuill. | Caryophyllaceae | +       |         |        | G2 (1)                               | Axiotis et al. (2018) |
| *Ceratonia siliqua* L. | Leguminosae | +       |         |        | G3 (1)                               | Brussell, (2004) |
| *Coratonia alica* L. | Leguminosae | +       |         |        | G16 (1)                              | Axiotis et al. (2018) |

(Continued on following page)
| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|----------------|--------|---------|--------|--------|--------------------------------------|------------|
| Chelidonium majus L. | Papaveraceae | + | + | + | G2 (1), G3 (1), G4 (4), G8 (1), G9 (1), G17 (2), G20 (7), G22 (1), G23 (2), G29 (1), G32 (1), G33 (2), G34 (1) | Vokou et al. (1993); Uzun et al. (2004); Kültür, (2007); Ünsal et al. (2010); Karousou and Deirmentzoglou, (2011); Sargin et al. (2013); Pieroni et al. (2014a); Ari et al. (2015); Sargin et al. (2015a); Polat et al. (2015); Gürbüz et al. (2019); Petrakou et al. (2020) |
| Chenopodium album L. | Amaranthaceae | + | + | + | G33 (1), G36 (1) | Axiotis et al. (2018) |
| Cichorium intybus L. | Asteraceae | + | + | + | G1 (1), G2 (1), G4 (3), G5 (1), G9 (1), G17 (3), G20 (1), G22 (6), G23 (1), G28 (1), G31 (2), G32 (1), G33 (8), G36 (1) | Sezik et al. (1991); Yeşilada et al. (1999); Sezik et al. (2001); Hanlidou et al. (2004); Everest and Ozturk, (2005); Tuzlaci et al. (2010); Çakilcioglu et al. (2010); Altindag and Ozturk, (2011); Adamidou, (2012); Özgen et al. (2012); Tetik et al. (2013); Sargin et al. (2015a); Gül er et al. (2015b); Mükemre et al. (2015); Gürbüz et al. (2019); Karakaya et al. (2019); Karakaya et al. (2020); Gül er et al. (2020) |
| Cichorium spinosum L. | Asteraceae | + | + | + | G32 (1), G36 (1) | Axiotis et al. (2018) |
| Cistus creticus L. | Cistaceae | + | + | + | G3 (2), G4 (1), G6 (1), G16 (1), G32 (1), G33 (3) | Honda et al. (1996); Tuzlao and Aymaz, (2001); Pieroni et al. (2006); Polat and Satil, (2012); Uysal et al. (2012); Aykol and Altan, (2013); Bulut and Tuzlao, (2015); Kalarkan et al. (2015); Axiotis et al. (2018) |
| Cistus salviifolius L. | Cistaceae | + | + | + | G3 (1), G5 (1), G16 (1), G33 (3), G36 (1) | Tuzlao and Aymaz, (2001); Brussel, (2004); Kültür, (2007); Tuzlaci et al. (2010); Uzun et al. (2012); Akyol and Alt an, (2013); Bulut and Tuzlao, (2015); Kalarkan et al. (2015); Axiotis et al. (2018) |
| Crepis zacintha (L.) Babc. | Asteraceae | + | + | + | G20 (1), G22 (1) | Kültür, (2007); Papageorgiou et al. (2020) |
| Cupressus sempervirens L. | Cupressaceae | + | + | + | G2 (1), G4 (2), G20 (2), G22 (2) | Polat and Satil, (2012); Sargin et al. (2013); Sargin et al. (2015a); Bulut and Tuzlao, (2015); Yeşilyurt et al. (2017); Axiotis et al. (2018) |
| Curcuma longa L. | Zingiberaceae | + | + | + | G4 (1) | Hanlidou et al. (2004) |
| Cuscuta campestris Yunck. | Convolvulaceae | + | + | + | G16 (1) | Tsioutsiou et al. (2019) |
| Cuscuta sp. | Convolvulaceae | + | + | + | G22 (1), G33 (1) | Akgül et al. (2016); Papageorgiou et al. (2020) |
| Cydonia oblonga Mill. (= Cydonia vulgaris Pers.) | Rosaceae | + | + | + | G1 (1), G4 (3), G6 (1), G22 (4), G23 (1), G28 (1), G33 (2), G37 (1) | Vokou et al. (1993); Tuzlao and Aymaz, (2001); Everest and Ozturk, (2005); Ec ev Genc and Özh atay, (2006); Tuzlao and Sadıkog lu, (2007); Çakilyo ğlu and Türkog lu, (2009); Pieroni et al. (2014a); Korkmaz et al. (2014a); Korkmaz et al. (2016a); Korkmaz et al. (2016b); Günbatan et al. (2016); Uzun and Kaya, (2016); Yeşilyurt et al. (2017); Yeşilada et al. (1995); Sargin et al. (2013); Sargin et al. (2015a); Tsioutsiou et al. (2019) |
| Cynoglossum creticum Mill. | Boraginaceae | + | + | + | G4 (1), G9 (1), G20 (3), G33 (1), G36 (1) | Sezik et al. (1991); Sezik et al. (2001); Uzun et al. (2004); Ec ev Genc and Özh atay, (2006); Kültür, (2007); Yeşilyurt et al. (2007); Tuzlao and Sadıkog lu, (2007); Axiotis et al. (2018) |
| Datura stramonium L. | Solanaceae | + | + | + | G1 (1), G4 (2), G9 (2), G10 (1), G14 (1), G17 (1), G22 (1), G33 (1) | (Continued on following page) |
| Botanical name          | Family             | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References                                                                 |
|-------------------------|--------------------|---------|--------|--------|----------------------------------------|---------------------------------------------------------------------------|
| Delphinium staphisagria L. | Ranunculaceae     |         |        |        | G2 (1), G25 (1)                         | Hanlidou et al. (2004)                                                    |
| Dioscorea balcanica Kosanin. | Dioscoreaceae     |         |        |        | G28 (1), G33 (1)                         | Brussel, (2004)                                                            |
| Dittrichia graveolens (L.) Greuter | Asteraceae      | G25 (1) |        |        | G2 (2), G4 (1), G9 (1), G32 (1), G33 (1) | Pieroni et al. (2008), González-Tejero et al. (2008), Güzel et al. (2015a), Papageorgiou et al. (2020) |
| Dittrichia viscosa (L.) Aiton | Asteraceae        | + +     |        |        | + G1 (1), G4 (2), G6 (1), G8 (1), G9 (2), G16 (3), G17 (1), G21 (2), G27 (1), G32 (1), G33 (3) | Hanlidou et al. (2004), Karouso and Deirmenzeuglu, (2011), Petrakou et al. (2020) |
| Echinacea angustifolia DC. | Asteraceae         | +       |        |        | G1 (1), G4 (2), G6 (1), G8 (1), G9 (2), G16 (3), G17 (1), G21 (2), G27 (1), G32 (1), G33 (3) | Hanlidou et al. (2004), Karouso and Deirmenzeuglu, (2011), Petrakou et al. (2020) |
| Elaeagnus rhamnoides (L.) A.Nelson | Elaeagnaceae     | G1 (1), G13 (1), G17 (1), G27 (1), G28 (1), G33 (1), G37 (1) | Adamidou, (2012), Petrakou et al. (2020) |
| Elettaria cardamomum (L.) Maton | Zingiberaceae     | G4 (1), G13 (2) | Hanlidou et al. (2004), Adamidou, (2012), Petrakou et al. (2020) |
| Ephedra foeminea Forssk. | Ephedraceae        | G8 (1), G17 (1) | Hanlidou et al. (2004) |
| Ephedra arvense L. | Ephedraceae         | G2 (2), G3 (3), G4 (1), G5 (1), G20 (2), G22 (1), G33 (1), G34 (1) | Vokou et al. (1993), Karaman and Kocabas, (2001), Everett and Ozturk, (2005), Toksoy et al. (2010), Özüdoru et al. (2011), Sargin et al. (2015a), Petrakou et al. (2020) |
| Equisetum sp. | Equisetaceae        | +       |        |        | G2 (1), G3 (2), G33 (1)                 | Hanlidou et al. (2004), Karouso and Deirmenzeuglu, (2011) |
| Erica arborea L. | Ericaceae           | +       |        |        | G1 (1), G4 (1), G6 (1), G8 (1), G16 (1), G27 (1) | Brussel, (2004), Everett and Ercı, (2006), Tuzlacı and Bulut, (2007), Gürbüz et al. (2019) |
| Erodium cicutarium (L.) L'Hér Geraniaceae | Geraniaceae      | G3 (1), G16 (2), G20 (1), G22 (1), G34 (1) | Özgen et al. (2012), Gunes et al. (2017), Axiotis et al. (2018), Pieroni and Cattero, (2019) |
| Eucalyptus camaldulensis Dehnh. | Myrtaceae         | + +     |        |        | G4 (2), G32 (1)                         | González-Tejero et al. (2008), Axiotis et al. (2018), Sargin and Büyükçengiz, (2019) |
| Eucalyptus globulus Labill. | Myrtaceae          | G4 (2)  |        |        |                                        | Hanlidou et al. (2004), Petrakou et al. (2020) |
| Euphorbia helioscopia L. | Euphorbiaceae      | + + +   |        |        | G6 (1), G8 (1), G16 (1), G17 (1), G20 (2), G22 (1), G29 (1) | Brussel, (2004), Pieroni et al. (2005a), Yoney et al. (2010), Demirci and Özhatay, (2012), Gunes et al. (2017), Gürbüz et al. (2019) |
| Euphorbia peplus L. | Euphorbiaceae      | G20 (1), G34 (1) | Brussel, (2004), Demirci and Özhatay, (2012) |
| Euphorbia salisburgensis Funck ex Hoppe | Orobanchaceae     | G4 (2)  |        |        |                                        | Hanlidou et al. (2004), Petrakou et al. (2020) |
| Ferula communis L. | Apiaceae           | G33 (1) |        |        |                                        | Brussel, (2004) |
| Ficus carica L. | Moraceae            | + + +   |        |        | G3 (2), G4 (1), G5 (1), G8 (1), G9 (8), G11 (2), G16 (9), G17 (6), G20 (28), G22 (13), G32 (2), G33 (2) | Hanlidou et al. (2004), Altundag and Ozturk, (2011), Karaman and Kocabas, (2001), Tuzlacı and Bulut, (2007), Ugulu and Kaya, (2016), Karcı et al. (2017), Sargin et al. (2015a), Pieroni et al. (2014a), Gürbüz et al. (2019), Papageorgiou et al. (2020), Malamas and Marselos, (1992), Fujita et al. (1995), Yaladral et al. (1995), Yaladral et al. (1999), Yoney et al. (2010), Lardos and Heinrich, (2013), Karagöz et al. (2008), Polat et al. (2015), Uzun and Kaya, (2016), Karci et al. (2017), Karaman and Kocabas, (2001), Tuzlacı and Bulut, (2007), Ugulu and (Continued on following page) |
TABLE 3 | (Continued) Taxa reported in Greek ethnobotanical field studies, cross-referenced with the other countries and De Materia Medica.

| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) ± | References |
|----------------|--------|---------|--------|--------|-----------------------------------------|-----------|
| Filipendula hexapetala Gilib. (synonym of Filipendula vulgaris Moench) | Rosaceae |        |        |        | G22 (1) | Secmen, (2008); Tuzlaci et al. (2010), Bulut and Tuzlaci, (2015), Güler et al. (2015a), Sargin et al. (2013), Tuzlaci and Aymaz, (2001), Tuzlaci and Erol, (1999), Sargin et al. (2015a), Ahmet Sargin, (2015), Ecevit Genç and Özhatay, (2006), Bulut, (2016), González-Tejero et al. (2008), Polat and Satlı, (2012), Tuzlaci and Tolon, (2000), Bulut and Tuzlaci, (2013), Güler et al. (2015b); Sargin and Büyüközer, (2019); Güler et al. (2020), Honda et al. (1996), Arkol and Atlan, (2013), Tuzlaci ve Doğan, (2010); Sargin et al. (2015b); Bulut et al. (2017a) |
| Foeniculum vulgare Mill. | Apiaceae |        |        |        | + G4 (3), G5 (1) | Everest and Ozturk, (2005); Polat and Satlı, (2012); Petrakou et al. (2020) |
| Fraxinus ornus L. | Oleaceae |        |        |        | + G20 (1), G22 (1), G34 (1) | Vokou et al. (1993); Kültür, (2007); Tuzlaci et al. (2010) |
| Fumaria officinalis L. | Papaveraceae |        |        |        | + G6 (2), G8 (1), G17 (5), G22 (1), G27 (3), G30 (1) | Brussell, (2004); Tuzlaci and Sadıkoğlu, (2007); Ugulu et al. (2009); Akgül et al. (2016); Korkmaz et al. (2018a); Güneş et al. (2017) |
| Galiun aparine L. | Rubiaceae |        |        |        | + + G1 (1), G6 (1), G14 (1), G17 (1), G23 (1), G27 (1), G29 (1), G32 (1) | Hanlidou et al. (2004); Gonzalez-Tejero et al. (2008); Gunen et al. (2017); Petrakou et al. (2020) |
| Geranium asphodeloides Burm.f. | Geraniaceae |        |        |        | + G4 (2), G33 (1) | Brussell, (2004); Uzun et al. (2004) Brussell, (2004) |
| Geranium versicolor L. | Geraniaceae |        |        |        | + G1 (1), G4 (2), G5 (2), G6 (1), G22 (2), G32 (2), G36 (1) | Honda et al. (1996); Sezik et al. (2001); Everest and Ozturk, (2005); Kargöglü et al. (2010); Toksöy et al. (2010); Keroussou und Darmantzioglou, (2011); Güzel et al. (2015); Karakaya et al. (2019); Petrakou et al. (2020) |
| Glycyrrhiza glabra L. | Leguminosae |        |        |        | + G1 (1), G4 (2), G5 (1), G14 (1), G17 (1), G23 (1), G32 (1), G36 (1) | Honda et al. (1996); Sezik et al. (2001); Everest and Ozturk, (2005); Kargöglü et al. (2010); Toksöy et al. (2010); Keroussou und Darmantzioglou, (2011); Güzel et al. (2015); Karakaya et al. (2019); Petrakou et al. (2020) |
| Hamamelis virginiana L. | Hamamelidaceae |        |        |        | G3 (1), G4 (1), G22 (1), G33 (2) | Hanlidou et al. (2004); Yörkey et al. (2010); Tsoutsou et al. (2017) |
| Harpagophytum procumbens (Burch.) DC. ex Meisn. | Pedaliaceae |        |        |        | G21 (1), G32 (1) | Hanlidou et al. (2004); Petrakou et al. (2020) Vokou et al. (1993); Tuzlaci and Tolon, (2000); Brussell, (2004); Hanlidou et al. (2004); Ünsal et al. (2010); Yeşilyurt et al. (2017); Gürbüz et al. (2019); Petrakou et al. (2020) Everest and Ozturk, (2005); Axiotis et al. (2018) |
| Hedera helix L. | Araliaceae |        |        |        | G9 (3), G12 (2), G15 (1), G28 (1), G33 (2) | Hanlidou et al. (2004); Yörkey et al. (2010); Tsoutsou et al. (2017) |
| Helichrysum stoechas (L.) Moench | Asteraceae |        |        |        | G3 (1), G4 (1), G5 (1), G17 (1), G33 (1) | Hanlidou et al. (2004); Yörkey et al. (2010); Tsoutsou et al. (2017) |
| Hypericum olympicum L. | Hypericaceae |        |        |        | G9 (1), G22 (1), G33 (3) | Tuzlaci and Aymaz, (2001); Kalankan et al. (2015); Papageorgiou et al. (2020) |
| Hypericum perforatum L. | Hypericaceae |        |        |        | G3 (4), G4 (9), G5 (2), G6 (2), G7 (1), G9 (3), G17 (1), G20 (1), G22 (6), G23 (2), G28 (2), G31 (1), G32 (1), G33 (45), G34 (1) | Vokou et al. (1993); Axiotis et al. (2018); Tsoutsou et al. (2019); Brussell, (2004); Hanlidou et al. (2004); Tsoutsou et al. (2017); Pieroni, (2017); Keroussou und Darmantzioglou, (2011); Güzel et al. (2015); Pieroni et al. (2014a); Everest and Ozturk, (2005); Sezik et al. (Continued on following page) |
| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|----------------|--------|---------|--------|--------|----------------------------------------|------------|
| *Hypericum sp.* | Hypericaceae | + | G4 (2), G5 (1), G10 (2), G11 (1), G16 (1), G17 (1), G22 (2), G28 (1), G32 (1), G33 (4) | (2001); Malamas and Marselos, (1992); Kürür, (2007); Polat et al. (2015); Uzun and Kaya, (2016); Gümüş et al. (2017); Karaman and Kocabas, (2001); Tuzlaci and Bulut, (2007); Tuzlaci et al. (2010); Tuzlaci and Il, (2011); Bulut and Tuzlaci, (2015); Korkmaz and St, (2015); Akaydin et al. (2013); Sargin et al. (2013); Tuzlaci and Aymaz, (2001); Sargin et al. (2015a); Ahmet Sargin, (2015); Özüdoru et al. (2011); Ecevit Genç and Özhatay, (2006); Tuzlaci and Alparslan, (2007); Uysal et al. (2012); González-Tejero et al. (2008); Polat and Satt, (2012); Korkmaz et al. (2016a); Charalampidou, (2014); Bulut and Tuzlaci, (2013); Sargin and Buyükköç, (2019); Tuzlaci and Tolon, (2000); Kalaiank et al. (2015); Pieroni et al. (2005b); Adamidou, (2012); Papageorgiou et al. (2020); Petrakou et al. (2020); Tuzlaci and Sadıkoglu, (2007); González-Tejero et al. (2008); Tetik et al. (2013); Ahmet Sargin, (2015); Sargin et al. (2015b); Sargin and Buyükköç (2019); Papageorgiou et al. (2020); Vokou et al. (1993) |
| *Hypericum triquetrifolium Turra* | Hypericaceae | + + | G4 (2), G22 (1), G27 (1), G32 (1), G33 (6) | Tuzlaci and Sadıkoglu, (2007); González-Tejero et al. (2008); Tetik et al. (2013); Ahmet Sargin, (2015); Sargin et al. (2015b); Sargin and Buyükköç (2019); Papageorgiou et al. (2020) |
| *Hyssopus officinalis subsp. aristatus* (Godr.) Nyman. | Lamiaceae | + + | G34 (1) | Nadiroğlu et al. (2019); Ugulu et al. (2009); Altundag and Ozturk, (2011); Karakaya et al. (2019); Karakaya et al. (2020); Hanlıdou et al. (2004); Tsioutsiou et al. (2017); Pieroni and Söükand, (2017); Sezik et al. (1997); Çakılıcioğlu and Türkoglu, (2009); Guzel et al. (2015); Everest and Ozturk, (2008); Tetik et al. (2013); Gürbüz et al. (2019); Papageorgiou et al. (2020); Ari et al. (2016); Sezik et al. (2001); Malamas and Marselos, (1992); Yöney et al. (2010); Yildirim et al. (2008); Karci et al. (2017); Karaman and Kocabas, (2001); Tuzlaci et al. (2010); Tuzlaci and Il, (2011); Bulut and Tuzlaci, (2015); Palasyo et al. (2016); Güler et al. (2015a); Tabata et al. (1994); Kaval et al. (2014); Ahmet Sargin, (2015); Ecevit Genç and Özhatay, (2006); Tuzlaci and Sadıkoglu, (2007); Polat and Satt, (2012); Ünsal et al. (2010); Bulut and Tuzlaci, (2013); Sargin and Büyükköç (2019); Tuzlaci and Tolon, (2000); Honda et al. (1996) |
| *Juniperus communis L.* (contains *Juniperus communis L. subsp. alpina*) | Cupressaceae | + + | G4 (1), G17 (2), G22 (2), G28 (1), G30 (1), G32 (2), G33 (2) | Fujita et al. (1995); Özgen et al. (2012); Pieroni and Söükand, (2017); (Continued on following page) |
| Botanical name                  | Family                | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) ± | References                                                                                          |
|--------------------------------|-----------------------|---------|--------|--------|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| **Juniperus communis** (Suter) Celak. = Juniperus communis L. subsp. nana (synonym of Juniperus communis var. saxatilis Pall.) | Cupressaceae           |         |        |        | G2 (1), G4 (4), G9 (3), G17 (5), G22 (13), G27 (2), G28 (1), G29 (1), G30 (1), G32 (2), G33 (6), G34 (1) | Karakaya et al. (2019); Karakaya et al. (2020); Petrakou et al. (2020) |
| **Juniperus oxycedrus** L.     |                       |         |        |        | G2 (1), G4 (4), G9 (3), G17 (5), G22 (13), G27 (2), G28 (1), G29 (1), G30 (1), G32 (2), G33 (6), G34 (1) | Szeik et al. (1992); Yegi'da et al. (1993); Fujita et al. (1995); Yegi'da et al. (1996); Yegi'da et al. (1999); Karaman and Kocabas, (2001); Sezik et al. (2001); Cevv't Genç ve Özh'astay, (2006); Kültür, (2007); Uğurlu ve Seçmen, (2008); Uğurlu et al. (2009); Çakıloğlu ve Türkü'llu, (2009); Karagöl et al. (2010); Demirci ve Özh'astay, (2012); Polat ve Satlı, (2012); Bulut ve Tuzlacı, (2013); Sargar et al. (2015a); Bulut ve Tuzlacı, (2015); Çezdemir ve Alpinar, (2015); Günbatan et al. (2016); Bulut et al. (2017a); Yeşilyurt et al. (2017); Axiotis et al. (2018) |
| **Lamium garganicum** L.       | Lamiaceae             | +       |        |        | G33 (1) G1 (1), G2 (8), G3 (3), G4 (5), G5 (1), G6 (1), G9 (1), G14 (2), G16 (2), G17 (5), G18 (1), G22 (6), G27 (1), G28 (1), G30 (1), G32 (6), G33 (3), G35 (1) | Honda et al. (1996); Tuzlao ve Erol, (1999); Tuzlacı ve Tolon, (2003); Hanlidou et al. (2004); Pieroni et al. (2005b); Everest ve Ozt'urk, (2005); González-Tejero et al. (2008); Uğurlu ve Seçmen, (2008); Uğulu et al. (2009); Toksoy et al. (2010); Karousou ve Demirzentoglu, (2011); Akaydin et al. (2013); Güral ve Kültür, (2013); Chara'lampidou, (2014); Ahmet Sargar, (2015); Güzel et al. (2015); Polat et al. (2015); Ar'gil et al. (2016); Korkmaz et al. (2016a); Karco et al. (2017); Axiotis et al. (2018); Gürbüz et al. (2019); Sargin ve Büyükçengiz, (2019); Petrakou et al. (2020) |
| **Lavandula angustifolia** Mill. | Lamiaceae             | +       |        |        | G1 (1), G2 (1), G4 (3), G17 (1), G25 (1), G27 (1) | Hanlidou et al. (2004); Karousou ve Demirzentoglu, (2011); Petrakou et al. (2020) |
| **Lavandula stoechas** L.      | Lamiaceae             | +       |        |        | G4 (3), G9 (1), G17 (2), G33 (1) | Uzun et al. (2004); Se'ekroglu et al. (2006); Toksoy et al. (2010); Güler et al. (2015a); Axiotis et al. (2018); Uğurlu ve Seçmen, (2008); Uğulu et al. (2009); Axiotis et al. (2018) |
| **Lilium candidum** L.         | Liliaceae             | +       |        |        | G33 (3), G36 (1) | Hanlidou et al. (2004) |
| **Linaria elatine** (L.) Mill. (synonym of Kickxia elatine (L.) Dumort.) | Plantaginaceae        | G2 (1)  |        |        | G1 (2), G5 (1), G9 (6), G10 (1), G17 (1), G22 (2), G23 (1), G27 (1), G31 (1), G32 (1), G33 (2) | Fujita et al. (1995); Yegi'da et al. (1995); Yegi'da et al. (1999); Szeik et al. (2001); Hanlidou et al. (2004); Uğulu et al. (2009); Karakaya et al. (2020); Adamidou, (2012); Güler et al. (2015a); Axiotis et al. (2018); Tsioutsiou et al. (2019); Petrakou et al. (2020); Malamas ve Marsolos, (1992); Fujita et al. (1999); Yegi'da et al. (1995); Szeik et al. (2001); Günter et al. (2016); Karci et al. (2017) |
| **Linum usitatissimum** L.     | Linaceae              | +       |        |        | G9 (4), G16 (1), G33 (1), G36 (1) | Malamas ve Marsolos, (1992); Fujita et al. (1999); Yegi'da et al. (1995); Szeik et al. (2001); Günter et al. (2016); Karci et al. (2017) |
| **Lycopersicon esculentum** Mill. | Solanaceae           |         |        |        | G33 (1) G23 (1), G32 (1), G33 (1) | Brussel, (2004) |
| **Lythrum salicaria** L.       | Lythraceae            | G23 (1), G32 (1), G33 (1) |         |        |        | Brussel, (2004); Güler et al. (2015a); Korkmaz et al. (2016a) |
| **Malus domestica** Borkh.     | Rosaceae              | +       |        |        | G33 (1) | Brussel, (2004); Güler et al. (2015a); Korkmaz et al. (2016a) |
| **Malva sylvestris** L.        | Malvaceae             | +       |        |        | G33 (1) | Brussel, (2004); Güler et al. (2015a); Korkmaz et al. (2016a) |

(Continued on following page)
| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|---------------|--------|---------|--------|--------|---------------------------------------|------------|
| Matricaria chamomilla L. (= Matricaria recutita L.) | Asteraceae | +       | +      |        | G1 (3), G2 (2), G4 (5), G5 (5), G6 (2), G8 (1), G9 (1), G14 (1), G17 (1), G22 (2), G25 (1), G28 (2), G32 (3), G33 (5) | Tuzlaci and Erol, (1999); Tuzlaci and Tolon, (2000); Gözüm and Ünsal, (2004); Hanlidou et al. (2004); Simsek et al. (2004); Everest and Ozturk, (2005); Ecevit Geçen and Özhatay, (2006); Kültür, (2007); Tuzlaci and Bulut, (2007); González-Tejero et al. (2008); Ugulu et al. (2009); Kargioğlu et al. (2010); Tuzlaci et al. (2010); Yörney et al. (2010); Aftundag and Ozturk, (2011); Karakaya et al. (2020); Adamidou, (2012); Polat and Satli, (2012); Akaydin et al. (2013); Polat et al. (2013); Sargin et al. (2013); Pieroni et al. (2014a); Sargin et al. (2015a); Güzel et al. (2015); Korkmaz et al. (2016a); Axiots et al. (2018); Akbulut et al. (2019); Polat, (2019); Güler et al. (2020); Petrakou et al. (2020) |
| Medicago sativa L. | Leguminosae | +       |        |        | G3 (4), G9 (1), G33 (2), G34 (1) | Attundag and Ozturk, (2011); Kaval et al. (2014); Sargin et al. (2015a); Axiots et al. (2018) |
| Melissa officinalis L. | Lamiaceae | +       | +      |        | G1 (1), G4 (6), G16 (2), G33 (1), G37 (1) | Karaman and Kocabas, (2001); Uzun et al. (2004); Everest and Ozturk, (2005); Toksoy et al. (2010); Tuzlaci and Doğan, (2010); Aftundag and Ozturk, (2011); Karousou and Deirmengzioglu, (2011); Adamidou, (2012); Lardos and Heinrich, (2013); Bulut and Tuzlaci, (2015); Tsioutsiou et al. (2017); Axiots et al. (2018); Sargin and Bulüükçengiz, (2019); Tsioutsiou et al. (2019); Papageorgiou et al. (2020); Petrakou et al. (2020) |
| Mentha spicata L. | Lamiaceae | +       |        |        | G4 (1), G5 (1), G6 (1), G22 (1), G33 (1) | Tuzlaci and Aymaz, (2001); Pieroni et al. (2005b); Axiots et al. (2018); Petrakou et al. (2020) |
| Mentha sp. | Lamiaceae | +       |        |        | G22 (1), G33 (1) | Adamidou, (2012); Akaydin et al. (2013) |
| Mentha × piperita L. | Lamiaceae | +       |        |        | G4 (1), G17 (1) | Gürbüz et al. (2019); Petrakou et al. (2020) |
| Micromeria juliana (L.) Benth. ex Richb. | Lamiaceae | +       |        |        | G4 (1), G20 (1) | Axiots et al. (2018) |
| Momordica charantia L. | Cucurbitaceae | +       |        |        | G5 (1), G9 (1), G11 (1), G17 (2), G22 (3), G27 (2), G31 (1), G33 (10) | Yeğilada et al. (1999); Uzun et al. (2004); Kültür, (2007); Uğur et al. (2009); Tuzlaci et al. (2010); Polat and Satli, (2012); Akaydin et al. (2013); Ahmet Sargin, (2015); Sargin et al. (2015b); Güzel et al. (2015); Tsioutsiou et al. (2017); Sargin and Bulüükçengiz, (2019); Tsioutsiou et al. (2019); Güler et al. (2020) |
| Morus alba L. | Moraceae | +       |        |        | G3 (1), G4 (1), G5 (1), G6 (3), G9 (4), G17 (2), G23 (1), G33 (1) | Axiots et al. (2018); Aftundag and Ozturk, (2011); Sezk et al. (1997) |
**Table 3** | Continued† Taxa reported in Greek ethnobotanical field studies, cross-referenced with the other countries and *De Materia Medica*.

| Botanical name       | Family         | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References                                                                 |
|----------------------|----------------|---------|--------|--------|----------------------------------------|---------------------------------------------------------------------------|
| *Myrtus communis L.* | Myrtaceae      | +       | +      |        | G1 (1), G2 (3), G3 (3), G4 (5), G5 (1), G6 (1), G9 (3), G17 (1), G22 (2), G28 (4), G30 (1), G32 (2), G33 (4) | Gürbüz et al. (2019); Güneş et al. (2017); Tuzlaci and Bulut, (2007); Tuzlaci et al. (2010); Tuzlaci and Il, (2011); Bulut and Tuzlaci, (2015); Güler et al. (2015a); Akaydın et al. (2013); Ecevit Genç and Özhatay, (2006) |
| *Nasturtium officinale* R.Br. | Brassicaceae   | +       |        |        | G4 (1), G5 (1), G13 (1), G17 (1)       | Yeşildana et al. (1995); Tuzlaci and Erol, (1999); Everest and Ozturk, (2005); González-Tejero et al. (2008); Uğulu et al. (2009); Yöney et al. (2010); Karousou and Deirmentzoglou, (2011); Uysal et al. (2012); Bulut and Tuzlaci, (2013); Ahmet Sargin, (2015); Sargin et al. (2015a); Güzel et al. (2015); Bulut et al. (2017a); Akbulut et al. (2019) |
| *Nerium oleander L.* | Apocynaceae    | +       |        |        | G4 (1), G8 (1), G9 (1), G16 (3), G17 (2), G22 (1), G25 (2), G30 (2), G33 (1), G34 (1), G36 (1) | Yeşildana et al. (1995); Tuzlaci and Erol, (1999); Brussel, (2004); Tuzlaci and Sadıkoğlu, (2007); Yöney et al. (2010); Akyd and Altan, (2013); Gürdal ve Kültür, (2013); Ahmet Sargin, (2015); Sargin et al. (2015a); Güzel et al. (2015); Güneş et al. (2017); Karci et al. (2017); Akbulut et al. (2019) |
| Nicotiana tabacum L. | Solanaceae     | +       |        |        | G3 (7), G4 (3), G5 (1), G25 (1), G33 (5) | Tabata et al. (1994); Pieroni et al. (2005b); Kültür, (2007); Pieroni et al. (2014a); Pieroni et al. (2014c); Karci et al. (2017); Pieroni, (2017); Pieroni and Söyüksel, (2017); Gürbüz et al. (2019); Tsioutsiou et al. (2019); Sezik et al. (1992); Everest and Ozturk, (2005); Karousou and Deirmentzoglou, (2011); Sargin et al. (2013); Güler et al. (2015a); Akgül et al. (2016); Bulut et al. (2018); Petrikou et al. (2003) |
| Ocimum basilicum L.  | Lamiaceae      | +       |        |        | G5 (2), G6 (2), G9 (1), G16 (3), G22 (1), G33 (1) | Fujita et al. (1996); Honda et al. (1996); Sezik et al. (1997); Yeşildana et al. (1999); Tuzlaci ve Aymaz, (2001); Pieroni et al. (2005b); Everest and Ozturk, (2005); Pieroni et al. (2006); Kültür, (2007); Tuzlaci ve Bulut, (2007); Karousou ve Deirmentzoglou, (2011); Akaydın et al. (2013); Bulut ve Tuzlaci, (2013); Kültür, (2013); Lardos ve Heinrich, (2013); Ahmet Sargin, (2015); Bulut ve Tuzlaci, (2015); Güzel et al. (2015); Günbatan et al. (2016); Karci et al. (2017); Axios et al. (2018); Gürbüz et al. (2019); Karakaya et al. (2019); Sargin ve Büyükçengiz, (2019) |
| Olea europaea L.     | Oleaceae       | +       |        |        | G1 (2), G2 (1), G4 (3), G5 (1), G6 (4), G9 (2), G10 (1), G16 (1), G20 (2), G22 (2), G31 (1), G32 (3), G33 (12), G36 (2) | (Continued on following page) |
| Origanum dictamnus L. | Lamiaceae      | +       |        |        | G1 (1), G3 (1), G4 (3), G9 (1), G10 (2), G20 (1), G32 (1), G33 (4) | Hanlıdou et al. (2004); Karousou ve Deirmentzoglou, (2011); Adamidou, (Continued on following page) |
### TABLE 3 | (Continued) Taxa reported in Greek ethnobotanical field studies, cross-referenced with the other countries and De Materia Medica.

| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|----------------|--------|---------|--------|--------|---------------------------------------|------------|
| **a**Origanum majorana L. (= Origanum dubium Boiss.) | Lamiaceae | + | + | | G4 (3), G5 (1) | (2012); Tsoutsouli et al. (2017); Petrakou et al. (2020) |
| **b**Origanum vulgare L. | Lamiaceae | + | | | G1 (1), G2 (1), G4 (3), G6 (2), G22 (2), G33 (3) | Tsioutsiou et al. (2019); Tuzlaci and Aymaz, (2001); Hanlidou et al. (2010); Çakılıçlıoğlu and Türkoglu, (2009); Altundag and Ozturk, (2011); Sargin et al. (2015a); Papageorgiou et al. (2020); Petrakou et al. (2020) |
| Paeonia mascula (L.) Mill. | Paeoniaceae | + | | | G3 (1), G21 (1), G22 (1) | Ugulu et al. (2009); Axiotis et al., 2018 |
| **b**Parietaria judaica L. | Urticaceae | + | + | | G3 (1), G6 (1), G17 (2), G32 (1), G33 (1) | Sezik et al. (2001); González-Tejero et al. (2008); Ugulu et al. (2009); Güzel et al. (2015); Axiotis et al. (2018) |
| **a**Parietaria officinalis L. | Urticaceae | + | | | G10 (1), G33 (1) | Hanlidou et al. (2004); Everest and Ozturk, (2005) |
| **b**Pimpinella anisum L. | Apiaceae | + | | | G4 (2), G33 (1) | Honda et al. (1996); Sezik et al. (2001); González-Tejero et al. (2008); Karageoğlu et al. (2010); Demiroğlu and Özbahatay, (2012); Polat and Satlı, (2012); Ahmet Sargin, (2015); Bulut and Tuzlaci, (2015); Bulut et al. (2017a); Güneş et al. (2017); Axiotis et al. (2018) |
| **b**Pinus brutia Ten. | Pinaceae | + | | | G1 (1), G3 (1), G4 (1), G5 (1), G9 (2), G22 (1), G27 (1), G28 (1), G30 (1), G32 (1), G33 (6) | Honda et al. (1996); Sezik et al. (2001); González-Tejero et al. (2008); Karageoğlu et al. (2010); Demiroğlu and Özbahatay, (2012); Polat and Satlı, (2012); Ahmet Sargin, (2015); Bulut and Tuzlaci, (2015); Bulut et al. (2017a); Güneş et al. (2017); Axiotis et al. (2018) |
| **a**Pistacia lentiscus L. | Anacardiaceae | + | + | | G4 (1), G6 (2), G33 (2) | Pieroni et al. (2005b); Pieroni et al. (2006); Ahmet Sargin, (2015); Axiotis et al. (2018) |
| **b**Plantago lanceolata L. | Plantaginaceae | + | | | G1 (2), G3 (3), G4 (1), G5 (4), G9 (20), G16 (4), G17 (1), G22 (6), G25 (1), G28 (1), G32 (1), G33 (31), G34 (3), G36 (2) | Shanda and Küçüközüdkü, (2018); Nadiroğlu et al. (2019); Yokou et al. (1993); Brussell, (2004); Ugulu et al. (2009); Altundag and Ozturk, (2011); Karakaya et al. (2020); Tsoutsouli et al. (2017); Pieroni and Şökand, (2017); Pieroni et al. (2014a); Tetik et al. (2013); Gürbüz et al. (2019); Sezik et al. (2001); Malamas and Karayiannis (1992); Fujita et al. (1995); Yeşilada et al. (1995); Kargıoğlu et al. (2010); Polat et al. (2015); Uzun and Kaya, (2016); Güneş et al. (2017); Karci et al. (2017); Tuzlaci and Il, (2011); Tuzlaci and Aymaz, (2001); Tabata et al. (1994); Kaval et al. (2014); Mükemre et al. (2015); Ecevit Geçen and Özəbahatay, (2006); González-Tejero et al. (2008); Polat and Satlı, (2012); Charalampidou, (2014); Bulut and Tuzlaci, (2013); Tuzlaci and Tolon, (2000); Kalankan et al. (2015); Bulut et al. (2017a); Karageoğlu et al. (2010); Çakılıçlıoğlu et al. (2007); Polat et al. (2013); Özdemir and Alpinar, (2015); Ertuğ, (2000); Özugköç and Özçelik, (2004); Polat, (2019); Nadiroğlu et al. (2019); Altundag and Ozturk, (2011); Karakaya et al. (2019); Karakaya et al. (2020); Hanlidou et al. (2020); Nadiroğlu et al. (2019) |
### TABLE 3  
(Continued) Taxa reported in Greek ethnobotanical field studies, cross-referenced with the other countries and *De Materia Medica*.

| Botanical name | Family | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|----------------|--------|---------|--------|--------|---------------------------------------|------------|
| *Plantago media* L. | Plantaginaceae | + | G5 (2), G9 (3), G22 (2), G32 (1), G33 (1), G34 (1) | | (Altundag and Ozturk, 2011; Mükemre et al., 2015; Korkmaz et al., 2016a; Dalar et al., 2018; Karakaya et al., 2019; Tsoutsiou et al., 2019) |
| *Platanus orientalis* L. | Platanaceae | + | G3 (2), G4 (1), G5 (1), G8 (1), G9 (3), G22 (2), G33 (5), G36 (1) | | (Yeşilada et al., 1995; Karaman and Kocabas, 2001; Hanlidou et al., 2004; Tuzlaci and Sadıkoğlu, 2007; Uğulu et al., 2009; Polat and Satlı, 2012; Bulut and Tuzlacı, 2013; Sargin et al., 2013; Sargin et al., 2015a; Uzun and Kaya, 2016; Petrakou et al., 2020) |
| *Plumbago europaea* L. | Plumbaginaceae | + | G2 (4), G4 (2), G5 (1), G8 (1), G17 (4), G26 (1), G30 (1), G33 (2), G36 (1) | | (Fujita et al., 1995; Sezik et al., 2001; Brussell, 2004; Tuzlaci and Bulut, 2007; Uğur and Secmen, 2008; Kargıoğlu et al., 2010; Bulut and Tuzlacı, 2015; Güzel et al., 2015; Bulut et al., 2017b; Axiotis et al., 2018) |
| *Polygonatum multiflorum* (L.) All. | Asparagaceae | + | G10 (1) | | (Brussell, 2004) |
| *Polygonum aviculare* L. | Polygonaceae | + | G3 (2), G32 (1), G33 (1) | | |
| *Populus alba* L. | Salicaceae | + | G3 (1), G4 (1), G14 (1), G32 (1), G33 (1) | | (Sargin et al., 2013; Axiotis et al., 2018; Karakaya et al., 2020) |
| *Populus tremula* L. | Salicaceae | + | G6 (1), G20 (1) | | (Kültür, 2007; Charalampidou, 2014) |
| *Potentilla recta* L. | Rosaceae | + | G3 (1), G5 (1), G33 (1) | | (Çedemir and Alpınar, 2015; Axiotis et al., 2018) |
| *Primula veris* L. | Primulaceae | + | G3 (1), G4 (1) | | (Hanlioudou et al., 2004; Pironi et al., 2014c) |
| *Pteridium aquilinum* (L.) Kuhn | Dennstaedtiaceae | + | G4 (1), G17 (1) | | (Hanlioudou et al., 2004; Pironi et al., 2014c) |
| *Pyrus amygdaliformis* Vill. | Rosaceae | + | G4 (1), G16 (3) | | (Brussell, 2004; Tuzlaci and Sadıkoğlu, 2007; Bulut and Tuzlacı, 2015; Güzel et al., 2015) |
| *Quercus ilex* L. | Fagaceae | + | G22 (1) | | (Axiotis et al., 2018) |
| *Rhus coriaria* L. | Anacardiaceae | + | | | (Continued on following page) |
| Botanical name | Family      | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References |
|---------------|-------------|---------|--------|--------|--------------------------------------|------------|
| 2*Rosa canina* L. | Rosaceae       | +       | +      |        | G3 (1), G4 (3), G5 (3), G8 (4), G10 (1), G17 (7), G18 (1), G20 (1), G22 (31), G27 (1), G28 (2), G33 (5), G34 (1), G37 (1) | Sezik et al. (1991); Yeşilada et al. (1993); Tabata et al. (1994); Yeşilada et al. (1995); Tuzlaci and Erol, (1999); Karaman and Kocabas, (2001); Everest and Ozturk, (2005); Çakicioglu and Turkoglu, (2010); Çakicioglu et al. (2010); Ünsal et al. (2010); Altundag and Ozturk, (2011); Demirci and Özhatay, (2012); Bulut and Tuzlaci, (2013); Hayta et al. (2014); Ahmet Sargin, (2015); Sargin et al. (2015b); Paksoy et al. (2016); Güneş et al. (2017); Axiotis et al. (2018) |
| 3*Rosa sp.* | Rosaceae       | +       | +      |        | G4 (1), G6 (3), G32 (1), G33 (2) | Hanlidou et al. (2004); Pieroni et al. (2005b); Sargin et al. (2013); Pieroni, (2017); Yeşilürt et al. (2017); Petrakou et al. (2020) |
| *Rosmarinus officinalis* L. | Lamiaceae | +       | +      |        | G2 (3), G4 (4), G5 (2), G7 (1), G14 (1), G32 (2), G33 (3), G36 (1), G37 (1) | Hanlidou et al. (2004); Everest and Ozturk, (2005); Tuzlaci and Sadıkoglu, (2007); González-Tejero et al. (2008); Ugulu et al. (2009); Yöney et al. (2010); Adamidou, (2012); Akaydin et al. (2013); Sargin et al. (2013); Sargin et al. (2015a); Axiotis et al. (2018); Petrakou et al. (2020) |
| 4*Rubus canescens* DC. | Rosaceae       | +       |        |        | G3 (3), G5 (1), G6 (3), G22 (5), G33 (3), G34 (2), G37 (1) | Vokou et al. (1993); Yeşilada et al. (1999); Tuzlaci and Tolon, (2000); Tuzlaci and Aymaz, (2001); Kültür, (2007); Tuzlaci and Alparslan, (2007); Kargioglu et al. (2008); Ugulu et al. (2009); Bulut and Tuzlaci, (2015); Akbulut et al. (2019); Karaköse et al. (2019); Sargin and Büyükozcengiz, (2019) |

(Continued on following page)
TABLE 3 | (Continued) Taxa reported in Greek ethnomedical field studies, cross-referenced with the other countries and De Materia Medica.

| Botanical name               | Family             | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References                                                                 |
|-----------------------------|--------------------|---------|--------|--------|----------------------------------------|---------------------------------------------------------------------------|
| **Rubus fruticosus L. ex Dierb.** | Rosaceae           |         |        |        | G17 (1)                                | Malamas and Marselos, (1992)                                              |
| (synonym of Rubus vulgaris Weihe & Nees) |                    |         |        |        |                                        |                                                                           |
| **Rubus sanctus** Schreb.    | Rosaceae           |         |        |        | G3 (2), G6 (5), G9 (3), G17 (3), G22 (8), G33 (10), G34 (1) | Axiotis et al. (2018); Çakilcioglu and Turko, (2009); Güzel et al. (2015); Yeşilada et al. (1999); Ezer and Mumcu Arisan, (2006); Uzun and Kaya, (2016); Tuzlacı and Bulut, (2007); Tuzlacı and Il, (2011); Bulut and Tuzlacı, (2015); Tuzlacı and Erol, (1999); Sargin et al. (2015a); Ecevit Genç and Özhattay, (2006); Bulut, (2016); Tuzlacı and Sarıköğlu, (2007); Yeşilyurt et al. (2017); Bulut and Tuzlacı, (2013); Tuzlacı and Tonon, (2000); Honda et al. (1996); Bulut et al. (2017a); Çakilcioglu et al. (2007) |
| **Rubus sp.**                | Rosaceae           |         |        |        | G5 (1), G6 (2), G22 (2)                | Adamidou, (2012); Kalankan et al. (2015); Karci et al. (2017)               |
| **Rumex crispus** L.         | Polygonaceae       |         |        |        | G5 (4), G8 (1), G9 (3), G17 (1), G22 (6), G27 (1), G33 (4), G36 (2) | Axiotis et al. (2018); Altundag and Ozturk, (2011); Karakaya et al. (2019); Karakaya et al. (2020); Petrakou et al. (2023); Everest and Ozturk, (2005); Yeşilada et al. (1995); Kültür, (2007); Gündatan et al. (2016); Tuzlacı et al. (2010); Korkmaz and St, (2015); Ecevit Genç and Özhattay, (2006); Özgen et al. (2012); Ertuğ, (2000); Özgökçe and Özçelik, (2004) |
| **Rumex kerneri** Borbás (synonym of Rumex cristatus subsp. kerner (Borbás) Akaroyd & D.A.Webb) | Polygonaceae       |         |        |        | G2 (1), G34 (1)                        | Tuzlacı and Aymaz, (2001); Hankidou et al. (2004)                            |
| **Ruscus aculeatus** L.      | Asparagaceae       |         |        |        | G8 (1), G17 (1), G22 (1), G33 (1)       | Tuzlacı and Aymaz, (2001); Hankidou et al. (2004)                            |
| **Ruta graveolens** L.       | Rutaceae           |         |        |        | G16 (1), G27 (1)                       | Hanlidou et al. (2004); Kültür, (2007)                                      |
| **Salix alba** L.            | Salicaceae         |         |        |        | G4 (2), G5 (2), G9 (1), G17 (1), G19 (1), G20 (1), G32 (2), G33 (1) | Yeşilada et al. (1995); Ezer and Mumcu Arisan, (2006); Kültür, (2007); Sargin et al. (2013); Han and Bulut, (2015); Polat et al. (2015); Axiotis et al. (2018); Karakaya et al. (2020); Petrakou et al. (2003) |
| **Salvia fruticosa** Mill.   | Lamiaceae          |         |        |        | G2 (1), G4 (5), G6 (2), G18 (1), G32 (1), G33 (1), G35 (1), G37 (1) | Hanlidou et al. (2004); Pieroni et al. (2005b); Everest and Ozturk, (2005); González-Tejero et al. (2008); Karousou and Deirmentzoglou, (2011); Gürdal and Kültür, (2013); Axiotis et al. (2018); Petrakou et al. (2023) |
| **Salvia officinalis** L.     | Lamiaceae          |         |        |        | G3 (1)                                 | Tsioutsiou et al. (2017)                                                   |
| **Salvia sp.**               | Lamiaceae          |         |        |        | G2 (1), G4 (1), G6 (1), G33 (1)         | Sezik et al. (1992); Fujita et al. (1995); Yeşilada et al. (1995); Honda et al. (1996); Yeşilada et al. (1999); Tuzlacı and Tonon, (2000); Tuzlacı and Aymaz, (2001); Brussel, (2004); Ecevit Genç and Özhattay, (2006); Kültür, (2007); Tuzlacı and Alparslan, (2007); Demirci and Özhattay, (2012); Pieroni et al. (2014b); Pieroni et al. (2014c); Güneş et al. (2017); Karci et al. (2017); Pieroni et al. (2017); Görbüz et al. (2019) |
| **Sambucus ebulus** L.       | Adoxaceae          |         |        |        | G3 (1)                                 | Tsioutsiou et al. (2017)                                                   |
| **Sambucus nigra** L.        | Adoxaceae          |         |        |        | G3 (1)                                 | Tsioutsiou et al. (2017)                                                   |

(Continued on following page)
### TABLE 3 | (Continued) Taxa reported in Greek ethnobotanical field studies, cross-referenced with the other countries and *De Materia Medica*.

| Botanical name                  | Family          | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References                                                                                     |
|---------------------------------|-----------------|---------|--------|--------|----------------------------------------|------------------------------------------------------------------------------------------------|
| Santalum album L.               | Santalaceae     | G4 (1)  |         |        |                                        | Malamas and Marselos, (1992); Sezik et al. (1997); Hanlidou et al. (2004); Ecevit Genç and Özhatay, (2006); Pieroni et al. (2006); Kültür, (2007); Yüney et al. (2010); Atlındag and Ozturk, (2011); Karoussou and Dermontzoglou, (2011); Adamlıdou, (2012); Lardos and Heinrich, (2013); Pieroni et al. (2014a); Pieroni et al. (2014b); Gülür et al. (2015a); Ahmet Sargin, (2015); Sargin et al. (2015a); Pieroni and Sükand, (2017); Yeşilyurt et al. (2017); Sargin and Büyükköşenç, (2019); Tsioutsiou et al. (2019); Petrakou et al. (2020) |
| *Saponaria officinalis* L.      | Caryophyllaceae  | G4 (1), G2 (1), G6 (1), G9 (3), G10 (1), G17 (2), G20 (2), G22 (6), G28 (1), G32 (3), G33 (8), G36 (1) |         |        |                                        | Brussell, (2004); Hanlidou et al. (2004); Tsioutsiou et al. (2019)                                                                 |
| *Satureja thymbra* L.           | Lamiaceae       | G4 (1), G21 (1), G33 (1) |         |        |                                        | Hanlidou et al. (2004); Axiotis et al. (2018); Petrakou et al. (2020)                                                                 |
| Scandix pecten-veneris L.        | Apiaceae        | G4 (1)  |         |        |                                        | Brussell, (2004); Axiotis et al. (2018)                                                                 |
| *Scrophularia canina* L.         | Scrophulariaceae | G20 (1), G31 (1), G33 (1) |         |        |                                        | Brussell, (2004); Axiotis et al. (2018)                                                                 |
| *Scrophularia sp.*               | Lamiaceae       | G8 (1), G17 (1), G27 (1) |         |        |                                        | Brussell, (2004); Axiotis et al. (2018)                                                                 |
| *Sinapis alba* L.                | Brassicaceae    | G20 (1), G33 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| Smilax officinalis Kunth         | Smilacaceae     | G27 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Solanum dulcamara* L.          | Solanaceae      | +       |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| Sorbus domestica L.              | Rosaceae        | G3 (1), G33 (2) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| Spirea japonica L.f.             | Caryophyllaceae | G12 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| Stereospermum suaveolens DC.     | Bignoniacae     | G4 (1)  |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Symphytum bulbosum* K.F.Schimp.| Boraginaceae    | G28 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Symphytum officinale* Friv.     | Boraginaceae    | G20 (1), G22 (1), G33 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Symphytum* vulgaris L.          | Oleaceae        | G21 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Tamarix communis* L. (synonym of Dioscorea communis L.) Caddick & Wilkin | Dioscoreaceae | + | G10 (1), G17 (1), G22 (2), G33 (3) | | | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| Tanacetum vulgare L.             | Asteraceae      | G36 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Taraxacum heliocum* Dahlst.     | Asteraceae      | G34 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Taraxacum scaptum*              | Asteraceae      | G1 (2), G9 (1), G13 (1), G17 (2), G20 (1) |         |        |                                        | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Teucrium chamaedrys* L.         | Lamiaceae       | + | G6 (3), G8 (1), G17 (1), G22 (12), G33 (4), G36 (1) | | | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |
| *Teucrium polium* L.             | Lamiaceae       | + | G3 (2), G5 (1), G9 (2), G17 (5), G22 (15), G28 (1), G33 (1), G36 (1) | | | Brussell, (2004); Tuzlaç and Doğan, (2010); Altındag and Ozturk, (2011); Sezik et al. (1997); Brussell, (2004); Atlındag and Ozturk, (2011); Hanlidou et al. (2004) |

(Continued on following page)
| Botanical name | Family            | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence) | References                                                                 |
|---------------|-------------------|---------|--------|--------|----------------------------------------|---------------------------------------------------------------------------|
| *Thymbra capitata* (L.) Cav. (= Thymus capitatus (L.) Hoffmanns. & Link) | Lamiaceae | +       | +      | +      | G4 (3), G6 (1), G8 (1), G32 (1), G33 (2) | et al. (1999), Hanlidou et al. (2004), Everest and Ozturk (2005), Tuzlac et al. (2010), Ünsal et al. (2010), Altundag and Ozturk (2011), Adamidou (2012), Bulut and Tuzlaci (2013), Hayta et al. (2014), Ari et al. (2015), Bulut and Tuzlaci (2015), Han and Bulut (2015), Kalankan et al. (2015), Günbata et al. (2016), Karakaya et al. (2019), González-Tejero et al. (2008), Yöneş et al. (2010), Sargin and Büyükçengiz (2019), Papageorgiou et al. (2020), Petrakou et al. (2020) |
| *Thymus sp.* | Lamiaceae | +       |        |        | G2 (1), G4 (2)                          | Hanlidou et al. (2004), Everest and Ozturk (2005), Akgül et al. (2016), Karo et al. (2017) |
| Tilia sp. | Malvaceae |        |        |        | G2 (1), G4 (1), G13 (1), G33 (1), G37 (1) | Hanlidou et al. (2004), Adamidou (2012), Petrakou et al. (2020) |
| *Tribulus terrestris* L. | Zygophyllaceae | +       | +      | +      | G4 (2), G5 (1), G6 (1), G17 (3), G20 (2), G22 (4), G36 (1) | Aciotis et al. (2018), Tefik et al. (2013), Ari et al. (2015), Tuzlaci and Ili (2011), Sargin et al. (2013), Sargin et al. (2015a), Ahmet Sargin (2015), Tuzlaci and Sadıkoglu (2007), Bulut and Tuzlaci (2013) |
| *Trifolium pratense* L. | Leguminosae | +       |        |        | G17 (2), G27 (2), G33 (2)                | Sezik et al. (1997), Hanlidou et al. (2004), Altundag and Ozturk (2011), Petrakou et al. (2020) |
| *Trigonella foenum-graecum* L. | Leguminosae | +       |        |        | G1 (1), G8 (1), G9 (1), G33 (1)         | Ugulu et al. (2009), Petrakou et al. (2020) |
| *Tussilago farfara* L. | Asteraceae | +       | +      | +      | G5 (4), G8 (1), G9 (2), G20 (1), G33 (8) | Yeşildada et al. (1995), Yeşildada et al. (1999), Tuzlaci and Aynaz (2001), Hanlidou et al. (2004), Uzun et al. (2004), Pieroni et al. (2005a), Pieroni et al. (2005b), Ugulu et al. (2009), Karousou and Deirmentzoglou (2011), Tefik et al. (2013), Bulut and Tuzlaci (2015), Kalankan et al. (2015), Özdemir and Alpinar (2015) |
| *Ulmus minor* Mill. | Ulmaceae | +       |        |        | G1 (1), G2 (1), G5 (1), G9 (1), G30 (1), G33 (4), G36 (1) | Fujita et al. (1995), Yeşildada et al. (1999), Ecevit Genç and Özhatăy (2008), Altundag and Ozturk (2011), Pieroni and Süükand (2017), Petrakou et al. (2020) |
| *Urospermum picroides* (L.) Scop. ex F.W.Schmidt | Asteraceae | G4 (1) |        |        |                                          | Aciotis et al. (2018) |
| *Urtica dioica* L. | Urticaceae | +       | +      | +      | G1 (1), G2 (16), G3 (3), G4 (3), G5 (5), G8 (5), G9 (3), G10 (5), G14 (2), G16 (1), G17 (13), G22 (26), G27 (1), G31 (1), G32 (2), G33 (8), G34 (1), G36 (6) | Nadoroğlu et al. (2019), Vokou et al. (1993), Fujita et al. (1995), Tuzlaci and Erol (1999), Yeşildada et al. (1999), Tuzlaci and Tolon (2000), Sezik et al. (2001), Tuzlaci and Aynaz (2001), Uzun et al. (2004), Pieroni et al. (2005a), Pieroni et al. (2005b), Ecevit Genç ve Özhataý (2008), Ezer ve Mumcu Arisan (2006), Kültür (2007), Tuzlaci ve Alparslan (2007), Tuzlaci ve Sadıkoglu (2007), Yıldırım et al. (2008), Ugulu et al. (2009), Gökcióglu ve Türkoglu (2009), Tuzlaci et al. (2010), Altundag ve Ozturk (2011), Polat ve Satılı (2012), Yussal et al. (2012), Akaydin et al. (2013), Tefik (Continued on following page) |
| Botanical name | Family                  | Albania | Cyprus | Turkey | Skin Disease group (No. of occurrence ±) | References                                                                                                                                 |
|---------------|-------------------------|---------|--------|--------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| *Urtica sp.*  | Urticaceae              | +       | +      |        | G2 (4), G3 (3), G4 (1), G14 (1), G17 (2), G22 (3), G33 (1), G37 (1) | et al. (2013), Pieroni et al. (2014a), Sargin et al. (2015a), Güler et al. (2015b), Bulut and Tuzlacı (2015), Güzel et al. (2015), Polat et al. (2015), Akgül et al. (2016), Bulut (2016), Günbatan et al. (2016), Uzun and Kaya (2016), Karci et al. (2017), Pieroni (2017), Tsioutsou et al. (2017), Yeşilyurt et al. (2017), Axiotis et al. (2018), Gürbüz et al. (2019), Güler et al. (2020) |
| *Urtica urens* L. | Urticaceae              | +       | +      |        | G2 (1), G5 (1), G9 (2), G17 (3), G20 (1), G22 (3), G28 (1), G32 (2), G33 (3) | Fujita et al. (1995), Tuzlacı and Erol (1999), Tuzlacı and Sadıkoglu (2007), González-Tejerio et al. (2008), Tuzlacı et al. (2010), Akaydın et al. (2013), Charalampidou (2014), Ahmet Sargin (2015a), Aı̇r et al. (2015), Han and Bulut (2015), Kaı̇lankan et al. (2015), Tsioutsou et al. (2017) |
| *Valeriana officinalis* L. | Caprifoliaceae         | +       |        |        | G33 (2)                                   | Karaman and Kocabas (2001), Hanlidou et al. (2004)                                                                                   |
| *Verbascum mucronatum* Lam. | Scrophulariaceae       | +       |        |        | G4 (1), G8 (1)                            | Hanlidou et al. (2004), Pieroni et al. (2005a), Akaydın et al. (2013), Sargin et al. (2013), Tetık et al. (2013), Ahmet Sargin (2015), Aı̇r et al. (2015), Pieroni (2017) |
| *Verbascum sp.* | Scrophulariaceae        | +       |        |        | G3 (1), G4 (1), G5 (1), G17 (1), G20 (1), G22 (3), G32 (1), G33 (2), G36 (1) | Hanlidou et al. (2004), Pieroni et al. (2005a), Akaydın et al. (2013), Sargin et al. (2013), Tetık et al. (2013), Ahmet Sargin (2015), Aı̇r et al. (2015), Pieroni (2017) |
| *Vinca major* L. | Apocynaceae             | G1 (1), G3 (1), G4 (1), G16 (1), G17 (1) |        |        | G3 (1)                                    | Axiotis et al. (2018)                                                                                                               |
| *Vinca minor* L. | Apocynaceae             | G3 (1)  |        |        |                                          | Hanlidou et al. (2004), Petракou et al. (2020)                                                                                      |
| *Viola macedonica* Boiss & Heldr. | Violaceae              | G4 (1), G1 (1), G5 (1), G9 (1), G10 (1), G15 (1), G16 (2), G17 (2), G20 (1), G22 (2), G28 (2), G33 (2) |        |        |                                          | Yeşilyurt et al. (1995), Brussel (2004), Tuzlacı and Sadıkoglu (2007), Ugurlu and Seçmen (2008), Ugulu et al. (2009), Kargaroglu et al. (2010), Adamidou (2012), Polat and Sati (2012), Bulut and Tuzlacı (2013), Gündal and Kültür (2013), Bulut and Tuzlacı (2015), Güzel et al. (2015) |
| *Vitex agnus-castus* L. | Lamiaceae              | +       |        |        | G1 (1), G2 (4), G4 (2), G5 (1), G6 (1), G9 (6), G10 (2), G14 (1), G16 (1), G22 (4), G25 (1), G29 (1), G32 (2), G33 (8) | Yeşilyurt et al. (1995), Tuzlacı and Erol (1999), Karaman and Kocabas (2001), Sezık et al. (2001), Pieroni et al. (2005b), Kültür (2007), Çakılcıoğlu and Türköğlu (2009), Yöney et al. (2010), Kızılaralan and Çetinay (2012), Lardos and Heinrich (2013), Sargin et al. (2013), Gürel et al. (2015a), Güzel et al. (2015), Günbatan et al. (2016), Güneş et al. (2017), Pieroni and Stokland (2017), Axiotis et al. (2018), Gürbüz et al. (2019) |
| *Vitis vinifera* L. (= *Vitis sylvestris* C.C.Gmel.) | Vitaceae               | +       | +      | +     | G2 (1), G4 (1), G20 (1)                    | Hanlidou et al. (2004), Güzel et al. (2015a), Petракou et al. (2020), Çakılcıoğlu et al. (2007), Axiotis et al. (2018) |

- ± Ailment category for which the specific plant is used, as well as the number of reported uses in all four countries, in parenthesis.
- "Common taxa reported in the ethnobotanical studies conducted in Greece and in Dioscorides’ De Materia Medica.
- "Common taxa reported in the ethnobotanical studies conducted in Greece and in Dioscorides’ De Materia Medica-same genus, not same species.
- "Common taxa reported in the ethnobotanical studies conducted in Greece and in Dioscorides’ De Materia Medica-in De Materia Medica not used against skin disorders.
Balkans through trade and in relation to many historical facts. As such, there has been a reciprocal influence throughout the ages concerning traditional medicine and other cultural and social traditions. Inhabitants of East- and Southeastern Anatolia on the other hand were mostly influenced, both commercially and culturally, by Asian populations due to the constant flow of trade along the Silk Roads (MA, 2014). Since ethnobotanical studies included Turkish populations deriving from the whole Turkish domain, both European and Asian, it is somewhat expected that traditional medicine of Turkey is comprised by a blend of all these elements and cultures. Despite the different territorial size between Turkey and Greece, the floristic, historical, and cultural correlation lead to an important common number of species present in the ethnobotanical studies conducted in both countries.

Concerning the comparison between taxa reported in the ethnobotanical studies conducted in Greece and the suggested plants regarding the treatment of skin ailments reported in Dioscorides’ De Materia Medica, the percentage of common ones is 50%. Out of 215 different taxa reported in Greek ethnobotanical filed studies, 105 taxa were common, whereas 105 were not mentioned in De Materia Medica, yet 36 are only mentioned as genera. Moreover, 5 species occurring in the Greek studies are mentioned in the ancient manuscript but are not reported for skin related ailments. Furthermore, Greek traditional medicine, as well as other social and cultural aspects have been influenced by many different peoples, not only through commercial trade, but also due to occupation. From Byzantium to Francs and the Ottoman Empire, there has been a blending of all these different traditions and cultures through centuries. Additionally, Dioscorides refers to treatments against many skin ailments also present today, creating a strong bond between the past and the present. The comparison between the information obtained through the bibliographical analysis of the ethnobotanical research and Dioscorides’ manuscript, led to the conclusion that many of the remedies recommended against skin diseases in De Materia Medica, are also used as herbal therapies in the four countries for the treatment of the same skin conditions (Dioscorides et al., 2000) (Table 3). However, the data of this comparison will change over time, since few ethnobotanical studies have been carried out in the four countries on the topic up to now. The limited number of surveys should raise concern because many Greek populations, especially in remote areas, still possess this vital knowledge. Although their experience has not been recorded, it is transmitted through generations orally.

CONCLUSION

In the present review, an extensive literature search was performed concerning published ethnobotanical field studies conducted in Albania, Cyprus, Greece, and Turkey up until May 2020, collecting data from 128 published articles concerning skin related ailments. This documentation can significantly contribute to the preservation of the ethnobotanical knowledge of the study area, since it is the first time that such a data collection was catalogued and statistically elaborated. Our findings suggest that traditional medicine plays an important role in the culture of Albanians, Cypriots, Greeks, and Turks and that the four populations, related historically and culturally, are demonstrated to have a common background on the use of medicinal plants against various skin diseases. The analysis showed that there is a substantial necessity to carry out more ethnobotanical field studies in this area but also in other countries of the Balkan Peninsula and the Mediterranean Sea to reveal more medical practices and treatment remedies not yet encountered. Moreover, the extended study of Dioscorides’ De Materia Medica verifies the consensus that ancient herbs and their manuscripts have influenced and guided the development of Mediterranean and European traditional herbal medicine. This is confirmed by the number of species commonly mentioned and used in both ethnopharmacological surveys and Dioscorides’ plant descriptions. As a result, this can give rise to delving into other important herbal manuscripts enabling them as sources of evidence deriving from the past, and to evaluate the traditional medical practices described, not only against skin disorders, but also for the treatment of other ailments.

AUTHOR CONTRIBUTIONS

AC, ZS, and NA contributed to the study conception and design. ET, VA, ED, and AV collected the information from the ethnobotanical studies and ancient manuscript. Data preparation and analyses were performed by ET and VA. The first draft of the manuscript was written by ET, VA, and AC and all authors commented on different versions of the manuscript. All authors read and approved the final manuscript. NA collected the publication fee.

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