

Prevalence and associated factors with Forest therapy (FT) use by patients with dermatological diseases



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RATIONAL

Forest therapy, originating from the Japanese concept of "shinrin-yoku," involves immersing individuals in natural environments, a practice known as forest bathing. This Japanese approach has garnered attention for its potential to connect people with nature. A recent review of 11 systematic reviews encompassing 131 primary intervention studies indicates that forest-based interventions yield positive effects on cardiovascular health, certain immunological and inflammatory parameters, and mental well-being, particularly in areas such as stress, depression, anxiety, and negative emotions. This study aims to evaluate the frequency of forest therapy utilization among dermatology patients, explore the prevalence of conventional treatments, including topical and systemic medications, among forest therapy users, and analyze the impact of forest therapy on social, occupational, and familial aspects of life, as well as its influence on treatment adherence.

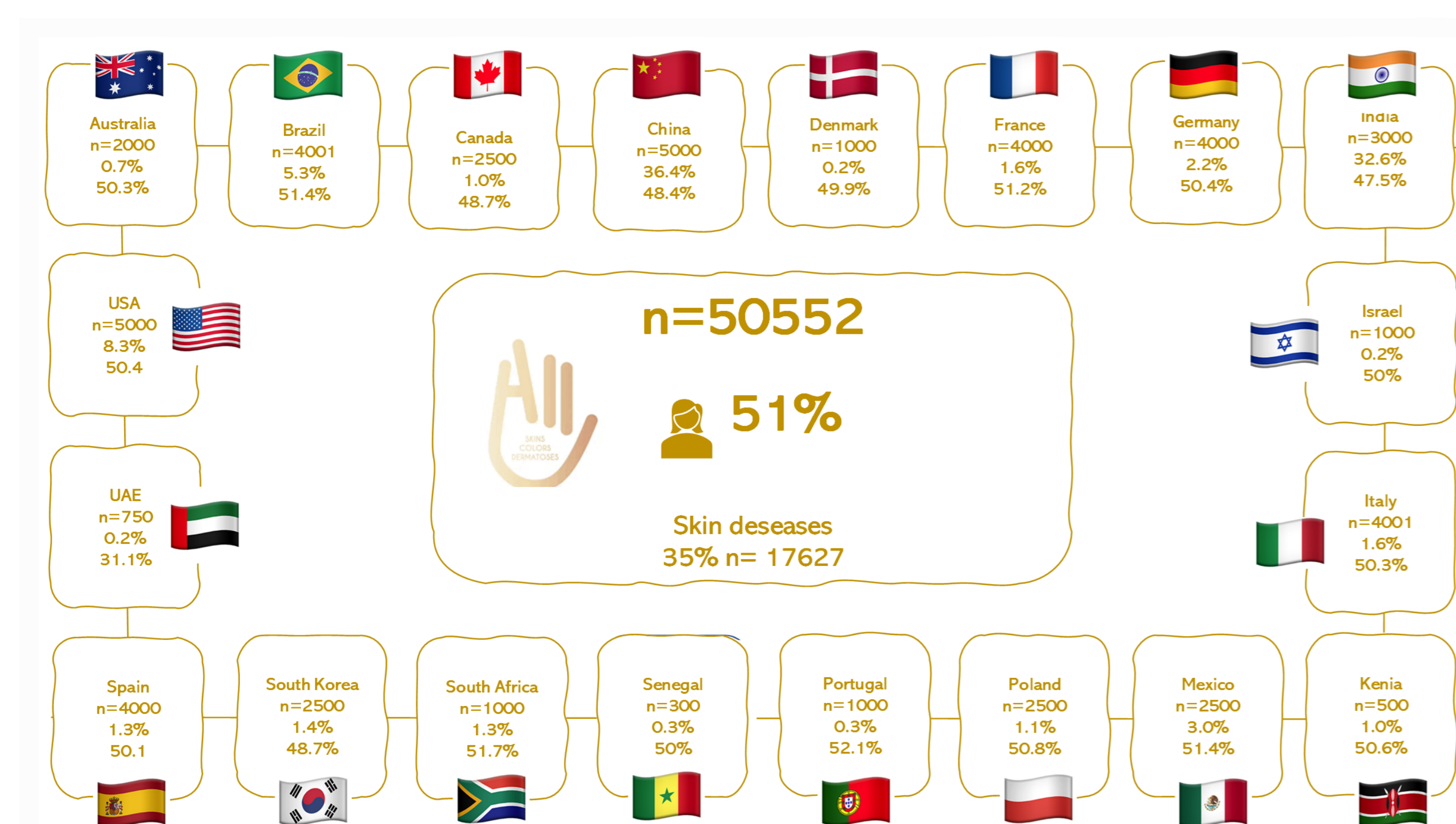
METHODOLOGY

The ALL PROJECT is a large-scale study of individuals representative of the adult population in 20 countries on five continents: Europe [France, Italy, Germany, Poland, Portugal, Spain, Denmark; n=17500], Latin America[LA] [Brazil, Mexico; n=6501], Asia [China, India, South Korea; n=10500], North America [NA] [Canada, USA; n= 7500]; Middle East [ME] [Israel, United Arab Emirates; n=2750], Australia [Australia; n=2000] and Africa [Kenya, South Africa, Senegal; n=1800].

In each of the 20 countries surveyed, representative and extrapolable samples of the general population aged 16 and over were interviewed.

The questionnaire focused on patient experience. It collected information on demographics, any dermatological conditions in the past 12 months, type of physician and therapeutic management. The primary analysis of this study was the prevalence of use of at least one Forest therapy alone or in combination with standard psoriasis therapies in the 12 months prior to the survey.

The secondary analysis was a comparison of Forest therapy and non- Forest therapy users to evaluate predictors: socio-demographic, clinical parameters and treatments used to treat psoriasis. Descriptive analyses were performed using absolute and percentage frequencies. The significance test was two-tailed and set at 5% ($p \leq 0.05$). Student's t-test and Pearson's chi-squared were used to compare subjects who reported using Forest therapy with those who did not.



RESULTS

A population of 12485 respondents, 5454 men, 7031 women, mean age 41.25+/-15.8 (16-96 years) participated in this study with 2514 (20.1%) atopic dermatitis, 991 (7.9%) psoriasis, 4441 (35.6%) acne, 489 (3.9%) rosacea, 179 (1.4%) vitiligo, 95 (0.8%) hidradenitis suppurativa, 562 (4.5%) chronic hand eczema. 5652 (45.3%) consulted a doctor, including 3913 (31.9%) a dermatologist. 9542 (76.4%) received treatment: 3308 (26.5%) received systemic treatment, including 601 (4.8%) by injection. 85 (0.7%) of respondents said they had used FT to treat their skin problem.

There were 48 (56.5%) males and 37 females with a mean age of 31.7+/-10.9 years (min 18 - max 65). The use of FT was significantly more frequent in people under 35 years of age (71.8% vs 41.5% $p \leq 0.05$) and in those living in urban areas (76.5% vs 58%).

The prevalence of TFR use is higher in Denmark (2.2%), India (1.5%), Canada (1.3%) and China (1.1%). The prevalence of TFR use is higher in cases of vitiligo (8.2% vs. 1.4%, $p \leq 0.05$) and hidradenitis suppurativa (8.2% vs. 1.4%, $p \leq 0.05$). 52.9% of FT users were associated with mind-body practices (MBPs) (yoga 27.1%, sophrology 12.9%, meditation 23.5%, tai-chi-chuan 14.1%, magnetizer 12.9%, healer 8.2%, hypnosis 7.1%) and 22.4% with acupuncture. 38.8% of people who used FT used natural product-based therapies - 20% essential oils, 22.4% phytotherapy and 14.1% homeopathy.

The prevalence of consultations for their dermatological problem in the last 12 months was not significantly lower among people using FT (54.1% vs 45.3%, p NS). However, they were less likely to have received systemic treatment (58.8% vs 78.9%, $p \leq 0.05$).

Variable	No Forest Therapy N = 12400	Forest Therapy N = 85	p-Value
Man	5406 (43.6%)	48 (56.47%)	0.025
Woman	6994 (56.4%)	37 (43.53%)	

Variable	No Forest Therapy N = 12400	Forest Therapy N = 85	p-Value
Declare using dermocosmetiques	2613 (21.07%)	20 (23.53%)	0.675

Variable	No Forest Therapy N = 12400	Forest Therapy N = 85	p-Value
Declare having consulted a dermatologist	3883 (69.27%)	30 (65.22%)	0.666
Declare having consulted a GP	1721 (30.7%)	18 (39.13%)	0.283
Declare having consulted a homeopathic doctor	127 (2.27%)	2 (4.35%)	0.283

Variable	No Forest Therapy N = 12400	Forest Therapy N = 85	p-Value
Declare that they use:			
Yoga	1002 (32.44%)	23 (27.06%)	0.353
Sophrology	123 (3.98%)	11 (12.94%)	<0.001
Meditation	812 (26.29%)	20 (23.53%)	0.656
Tai-chi-chuan	109 (3.53%)	12 (14.12%)	<0.001
Healer	188 (6.09%)	7 (8.24%)	0.362
Acupuncture	420 (13.6%)	19 (22.35%)	0.032
Homeopathy	429 (13.89%)	12 (14.12%)	>0.999
Hypnosis	132 (4.27%)	6 (7.06%)	0.27
Herbal medicine	894 (28.94%)	19 (22.35%)	0.229
Essential oils	1280 (41.44%)	17 (20.0%)	<0.001
Magnetizer	203 (6.57%)	11 (12.94%)	0.028

DISCUSSION

This study marks the inaugural attempt to gauge the occurrence of forest therapy (FT) among individuals with dermatological ailments. However, it necessitates further supplementation with mechanistic investigations delving into the rationale behind individuals' adoption of FT and the effects of FT on the well-being and quality of life of those with skin conditions.