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Hidradenitis Suppurativa: Qualitative Systematic Review on the Applicability of Complementary Therapies for the Promotion of Integrative Health

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Abstract

Hidradenitis Suppurativa (HS) or acne inversa is a chronic, inflammatory and recurrent skin disease with periods of exacerbation. (HS) is related to metabolic and immunological comorbidities. (HS) has a high biopsychosocial impact on patients' lives, which significantly affects their levels of Well-Being, Quality of Life and Mental Health [1]. This article aims to evaluate the possibility of applicability of Mind/Body Practices as a Complementary Therapy of the NCCIH/NIH, as an aid in the management of emotional stressors and thus increase patients' motivational levels for self-care, in the same way as that has already been achieved for the management of Psoriasis.

The result of knowledge mapping revealed a scientific production still lacking specific studies for (HS), of good methodological quality, In view of these circumstances, the principles of specificity, sensitivity, necessity and opportunity of both Evidence-Based Medicine and Internal Medicine and Therapeutics were applied, the data about a Meta-Analysis based on the results of research in this thematic area, developed with other Inflammatory Dermatoses, the Psoriasis [2].

Thus, it was possible to obtain reasonable levels of favorability for the use of Mind/Body Practices, applied as co-interventions to conventional pharmacological treatments, for the management of (HS), and in this way seeking to obtain beneficial results for these patients as well, with the use of these innovative resources, with acceptable levels of effectiveness, efficiency and safety.

Introduction

Hidradenitis Suppurativa (HS) or Acne Inversa is considered an Inflammatory Dermatosis (ID). These consist of several chronic-degenerative integumentary disorders, which involve different structures of the skin, where the inflammatory process plays a fundamental role, both in the emergence of lesions and in the perpetuation of the clinical conditions observed.

Many diseases are also considered (DI), such as Vitiligo, Acne Rosacea. Psoriasis is one of them, and by the way, the most prevalent in the West, and is also the most studied. All (DI) have as a common denominator the correlations between clinical manifestations, metabolic morbidities, immune changes, emotional stress and decreased levels of mental health, and a great impacto in the patient´s life. In general, (DI) patients present recurrent exacerbation crises, interspersed with brief periods of attenuation of signs and symptoms. Also in these morbid entities, there is a high frequency of refractoriness and a high incidence of adverse events resulting from the established treatments, which in practice makes diseases complex to manage.

According to MESH TERMS - Medical Subject Headings TERMS or Health Descriptors of the National Library Medicine National Institute of Health (NLM/NIH USA), such morbid entities naturally present the so-called progression of the disease, that is, a general and continuous worsening of clinical conditions throughout over time, without practically complete and definitive remission of clinical manifestations.

This concept is most frequently used for chronic and incurable diseases, where the estimated evolutionary stage occurs, generally in clinical presentation. This is also a determining factor, both to estimate the prognosis, and also influences the choice of the Mind/Body Therapy modality to be instituted in each case. As well as any unfavorable outcomes that, when present, normally generate dysfunctional repercussions in several aspects of the patients' lives, within the bio-psycho-socio-economic aspects, as has already been mapped in a previous publication by our research group [1] .

Since the COVD19 pandemic, there has been a tendency in global scientific production to research, in an unprecedented and systematic way, the impact of elements linked to patients' emotional aspects, where the power to modify the clinical course that such factors present is systematically studied, and may be responsible for the occurrence of a high number of unexpected and unfavorable outcomes, also called adverse events [2].

In this particular, despite studies on (HS) having advanced significantly in recent years, such aspects relating to the emotional impact of the disease, however, have not yet been completely clarified, that is, subjected to the scrutiny of the scientific methodology of Based Health in Evidence.

The relevance of a study of this nature is due to the fact that, in practice, such aspects constitute true subjectivity biases, capable of modifying clinical courses, being responsible for unsuccessful clinical evolutions.However, the neuropsychic aspects of inflammatory dermatoses have already been studied in Psoriasis [2, 3].

As a way to overcome this situation, our research team refined its scientific reasoning, to advance a little further, and went beyond the mere processes of the specific pathophysiology of (HS), as well as conventional therapies, entering into the denominators common to all other inflammatory dermatoses and rescued important behavioral elements in scientific research of high methodological quality.

Thus, relevant aspects of Well-Being, Quality of Life and Mental Health already studied for (ID) were expanded, which necessarily need to be worked on in (HS) patients, despite the specific literature on the topic still being scarce and with low methodological quality, as it will be demonstrated forward.

Using the principles of Specificity and Sensitivity of the Evidence-Based Health scientific methodology, it was perfectly possible to recover some innovative knowledge from meta-analyses on another dermatosis, Psoriasis, the so-called translational research. When such knowledge is applied, it can make a difference in the psychic management of (HS) patients, through the incorporation of therapeutic actions that belong to the knowledge field of the Complementary Therapies in the Mind/Body Practices, According NCCIH /NIH statements, in the Categories Meditation Modalities, Mindfulness, Hypnosis, Biofeedback, Relaxation Techniques and Breathing Techniques (especially Diaphragmatic Breathing and Slow Breathing), as important resources, capable of promoting a neuro-vegetative modulation of the Sympathetic Autonomic Nervous System, with very similar to those obtained with the use of psychopharmaceuticals in all (ID) [2].

Such intervention strategies, when applied in a co-intervention regime, through welcoming and hospitality, with Health Education methods, promote better levels of Well-Being in patients, improved levels of Mental Health and Quality of Life, which translates into more assertive, effective, more efficient and safer decision-making with the aim of ensuring Good Clinical Practices (GCP) for the largest possible number of patients, in addition to promoting the democratization of the access to knowledge of high methodological quality to the largest possible number of professionals, who perform their functions under different working conditions, around the world.

Hidradenitis Suppurativa / Folliculitis Dissecans of the scalp - Male patient, 29 years old, with recurrent, simultaneous and complex-to-manage lesions, located crural, axillary, scalp and face, with a high degree of refractoriness to conventional treatments, including various surgeries.

Hidradenitis suppurativa – Female patient, 29 years old, with recurrent lesions in the axillary region and inframammary fold, that presents a high degree of refractoriness to conventional treatments, even after several surgeries.

Theoretical Foundation for (HS)

Hidradenitis Suppurativa / Acne Inversa (HS) is a chronic, relapsing, severe and costly inflammatory skin condition. It affects the follicular-pilosebaceous units, and is characterized by abscesses, recurrent nodules, fistulization of the sinus tracts, scars, and association with substantial morbidity and worse quality of life [4, 5]. It is a dermatosis highly related to pain, itching, suppuration and bad smell; which favors social isolation, anguish, anxiety and depression. Another aspect of the disease is the association with other systemic conditions such as smoking, arthropathies, dyslipidemia, polycystic ovarian syndrome, psychiatric disorders, obesity, Diabetes Mellitus, among others [6].

The global prevalence of (HS) varies between 0.00033 and 4.1%, with prevalence varying between 0.7 and 1.2% in North American and European populations [7]

Genetic, environmental, endocrine and microbiological factors are among the potential causes of HS. It is already known that there is a close relationship between (HS) and environmental factors such as smoking and obesity, both highly related to inflammation. (HS) remains a complex, multifactorial disease, the pathogenesis of which is still unclear [8].

The diagnosis is basically made by clinical examination observing the occurrence of typical lesions (deep painful nodules, abscesses, draining sinuses, open comedones, and scars) in typical

topographic areas (axillas, inguinal areas, perineal and perianal regions, infrared grooves), and intermammary and buttocks) as well as the recurrence, chronicity of the lesions, and classifying them into Stages I (single or multiple abscesses, without tunnels or scars), II (isolated, single or multiple recurrent abscesses, with the occurrence of tunnels or scars) or III (multiple interconnected tunnels and abscesses reaching at least an entire anatomical region) of Hurley. Skin biopsies are, in general, unnecessary, and complementary exams such as ultrasound (USG) and functional magnetic resonance imaging (MRI) are frequently used imaging tests. (USG) is important for evaluating the severity of the disease, planning clinical or surgical treatment, evaluating therapeutic efficacy and monitoring complications, while (RMF) is recommended for evaluating specific anatomical regions such as the anogenital, and is also indicated for analyze aspects of disease activity, as well as therapeutic responses [9].

Numerous treatment options are available for the management of (HS) as detailed in Table 1. Due to the complexity of the disease, a combination of treatments appears to be the most promising option. Biological therapies have been shown to be the most effective in patients with moderate to severe HS [10]. Adjuvant therapy should be given to all patients [11]. Evidence-based topical treatments appear to enable more promising outpatient and self-administered measures in Hurley stage I and II (HS) cases [12].

Despite the wide variety of treatments, (HS) remains a challenging disease for both doctors and patients. No proposed form of treatment appears to treat all phases of the disease or promote long-term remission. Isolated, double or triple antibiotic therapy has demonstrated some superiority, and biological therapies, due to their side effects, should be reserved for those cases of moderate or severe, resistant and inoperable (HS) [13].

In the treatment of (HS), a combination of measures must be considered, the main ones being Health Education and accurate knowledge regarding the disease for both doctors and patients; anti-inflammatory interventions and surgical interventions for the treatment of nodules, fistulas and scars should be considered [14]. Wide surgical excision appears to be considered a form of curative treatment, but does not appear to be a definitive solution [15]. Thus, considering the chronic and recurrent aspect of (HS) and the lack, to date, of a curative treatment, there is a need to open up treatment beyond standardized therapy.

Table 1: Conventional Standard Therapy: As long as the Indications and Contraindications of each Case are Respected. Zouboulis, CC, et al., 2015) [16, 17].

Therapeutics	Type	Treatment regimen/Duration/Indication
Topic Therapies	Clorexidine 4%	There are few evidences about its efficacy.
	Topic Resorcinol	Cream Resorcinol 15%: Recurrent 2x/dya for Crises. 1x/Day for Maintenance. Stop after resolution HS, Hurley I , II.
	Clindamycin	Lotion Clindamycin 1%. 2x/dia. Local disease 3 or more months. HS, Hurley I, II.
Intralesional therapies	Triamcinolone	Triamcinolone acetonide, 10 mg/ml. Inject 0.2-1 ml. Short term. Inflamed nodule. HS, acute phase.
Antibiotics	Antibiotics	Doxycycline 100 mg, 1 or 2x/day; Tetracycline 500 mg, twice a day; Minocycline 100 mg, twice a day; Limecycline 408 mg, 1 or 2x/day; - 3 months + Reevaluation. HS, Hurley I e II.
	Dual therapy	Clindamycin 300 mg twice a day + Rifampicin 300 mg twice a day. 10 to 12 weeks. HS, Hurley I and II.
	Triple therapy	Rifampicina 300 mg, 2x/dia + Moxifloxacino 400 mg, 1x/dia + Metronidazol 500 mg, 3x/dia. 6 semanas. HS, Hurley I e II. 1-12 mouths
	Oral dapsone	Dapsone 25-200 mg/day. 4 to 12 weeks. HS, Hurley I and II. failure of first and second line treatments

	Ertapeném	Ertapenem 1g, IV, 1x/day (for people over 13 years old) or 15 mg/kg/day (for patients aged 3 months to 12 years). 6 weeks. HS, Hurley I, II or III.
Immunosuppressants	Systemic Corticoids	Prednisolone, 0.4-1 mg/kg/day. Rescue Therapy. Hydrocortisone, 60-80 mg/day. Short Time. Prednisone, 40-60 mg/day. 3 to 4 days, with gradual dose reduction over the subsequent 7-10 days. HS, acute eruptions.
Retinoids	Acitretin	Acitretin, 25-50 mg/day. 2 or more months. HS, Hurley I and II.
	Isotretinoín	Isotretinoin, 0.5-1 mg/kg/day. 4 to 10 months. Hurley I and II.
Immunobiologicals	Adalimumabe	Immunobiologicals Adalimumabe Adults or adolescents over 60 kg: 160 mg, SC, in week zero; 80 mg, SC, in week 2; and 40 mg, SC, 1x/week, starting from week 4 of treatment. Adolescents weighing 30-60 kg: 80 mg, SC, on day 0; 40 mg, SC, on the 8th day; and 40 mg SC every 2 weeks. HS, Hurley III.
	Infliximabe	Infliximab, 5 mg, IV< in weeks 0, 2 and 6 + maintenance doses every 8 weeks.
Phosphodiesterase-4 inhibitors	Apremilast	Apremilast, 30 mg, 2x/dya. 16 a 24 weeks. HS, Hurley I e II.
Hypoglycemic agents/hormonal therapies	Metformin	Metformina, 500 mg, 2-3x/day. HS + Diabetes mellitus, Metabolic Syndrome or polycystic ovarian syndrome
	Espironolactone	Espironolactone, 100 mg/day. 3 to 6 mouths. HS, Hurley I, II.
	Finasteride	Finasteride, 1,5-5 mg/day. HS, Hurley I , II.
	Etinilestradiol	Etinilestradiol. Daily Uses.
Surgical interventions Combined oral contraceptives	Wide excision	HS. Cases not controlled by standardized therapy. daily use. women of childbearing age

According to their classification criteria according to the WORLD HEALTH ORGANIZATION, Alternative and Complementary Medicine (CAM), has proven to be a therapeutic option for patients with (HS) (Table 1). This requires a multidisciplinary approach, as well as modifiable factors involved in the origin and chronicity of the disease must also be considered.

What is already known about the Management of (HS) through Complementary and Integrative Care, according to the classification criteria according to WORLD HEALTH ORGANIZATION are listed below:

Complementary and integrative therapeutic approaches to (HS) involve three sets of measures: education and knowledge for patients about the disease; use of anti-inflammatory medical interventions in addition to the use of surgical interventions [14]. There is still no curative treatment, and the only approved biological therapy has variable efficacy [5]. Providing care to patients with (HS) requires knowledge of the pathogenic mechanisms of the disease, the triggering factors and the habits of the patients. In addition to a multidisciplinary approach, the treatment of (HS) needs to extend beyond standard therapy, and take into account the unmet needs of patients [18]. There is limited evidence to support certain treatment modalities, but the use of non-pharmacological measures and management of modifiable life factors such as obesity, smoking, and stress should be considered. Furthermore, education regarding self-management and psychological and educational support seems to be essential in the adequate management of (HS), as well as in the management of other dermatoses. Among these measures, the following stand out:

Dietary Actions

There is an association of (HS) with obesity, which indicates the transparency of the disease with other environmental factors such as diet, even if the importance of diet in the origin of (HS) is not healthy detailed. Diet can have an important influence on

the pathogenesis, prevention and therapy of skin diseases [19, 18]. Eating habits ruin stress for obesity. This is a preventable risk factor that contributes to the triggering and exacerbation of (HS) wounds [4]. The pathogenesis of the disease can be influenced by dietary factors such as vitamins, minerals, high fat and carbohydrate content. Dietary factors appear to be involved in (HS) and can be considered as modulators of inflammation. Certain foods may improve or worsen inflammation in patients with (HS) [20].

The prevalence of obesity has been shown to be higher among patients with (HS) compared to the general population [21]. Increases in (BMI) - Body Mass Index, have been associated with greater difficulty in achieving Hidradenitis Suppurativa Clinical Response (HiSCR) [22]. One study showed positive, albeit weak, clarity between (BMI) and the (HS) score modified by the Severity Index (HSS) [23]. Poor diet quality and the reduction or absence of physical activity were considered risk factors that promote the worsening of (HS) in the general population [24]. Dairy products such as casein, whey, natural androgens and foods rich in sugars play a role in the development of androgen-mediated follicular obstruction in the pathogenesis of (HS) [21].

Adequate nutritional counseling is important in managing the treatment of the disease [25]. The adoption of dietary measures seems essential. A change in dairy consumption has been significantly associated with improvement in (HS) symptoms [26]. A reduction in dairy intake may lead to a reduction in morbidity associated with the disease [27]. Weight loss, exclusion of beer from the diet, restriction of dairy products, as well as supplementation of vitamin D, riboflavin, turmeric and zinc gluconate have been associated with improvement in (HS) symptoms; A diet that excludes yeast (Saccharomyces cerevisiae) has been associated with an improvement in disease symptoms without the participation of another form of treatment [21, 8]. The procedure necessary to eliminate foods containing yeast has been linked to rapid stabilization and a longer period of remission of the disease [28]. or exclusion of yeast and dairy products from the diet may favor partial or complete resolution of the lesions [19].

Evidence demonstrates that dietary factors play a role in the progression of (HS) through the stimulation of the inflammatory cascade [20]. While a healthy, all-natural diet, with no dairy products and low sugar content, can help reduce the progression of lesions, and possibly prevent the appearance of new lesions, even in the face of medication failure [27].

There is a need for awareness, education and counseling regarding the importance of weight management and nutrition for patients with (HS) [25].

Clothing

Choosing appropriate clothing can improve (HS) injuries. A combination of medical therapy and lifestyle changes seems like an approach worth considering. The correct choice of appropriate clothing should be part of disease management [29].

Tight clothing and mechanical stress favor worsening of (HS) injuries [30]. Mechanical stress caused by tight clothing or other factors can worsen existing injuries and/or contribute to the development of new injuries. Mechanical stress can influence (HS) as it provides an increase in matrix metalloproteinases 9 (MMP-9) in keratinocytes, thus favoring a negative regulation of several genes associated with wound healing [31]. The inflammatory substrate through which IL-17 develops its action can cause an increase in keratinocytes favored by mechanical stress. Therefore, considering the unmet needs of patients with (HS), the involvement of mechanical stress, and the influence of the properties of some tissues on (HS) lesions, choosing appropriate clothing should be taken into consideration in the treatment of the disease [18]. The use of clothing made with specific materials and that has antimicrobial, breathable and anti-irritant properties should be considered [18]. Clothing made with Rayon fibers derived from cellulose or bamboo fibers may be useful, as they are potentially soft and resistant materials with the ability to absorb and maintain skin homeostasis [29].

The use of fabrics that promote perspiration and/or absorption can contribute to reducing microbial colonization, sweat retention and odor. Patients with (HS) should opt for an underwear design that promotes perspiration, absorption and reduction of pressure on the skin [29]. The abandonment of wearing tight clothing should be encouraged in order to avoid friction [32]. The use of loose men's shorts or boxers instead of tight underwear and the use of strapless bras should be discussed with women with (HS). The use of loose-fitting underwear and loose clothing should be advised [33].

The use of loose clothing with the aim of reducing friction, and weight loss (in obese or overweight individuals) contribute to the prevention of exacerbations and flare-ups of symptoms [34].

BMI – Body Mass Index: Obesity / Weight Loss

Several studies correlate obesity and the course/severity of (HS) and other dermatoses. The influence of obesity on systemic inflammation and the risk of comorbidities it is known. (HS) is associated with comorbidities that are related to diet such as obesity, metabolic syndrome and type II Diabetes Mellitus [24]. In (HS), obesity favors the disease through mechanical effects and the coexistence of hormonal changes.

Obesity favors friction in skin folds, and adipose tissue promotes the production of several adipokines, which favors an increase in pro-inflammatory resistin and leptin, and thus, contributes to the emergence and increase of skin inflammation, and persistence of a low-grade systemic inflammation [35]. Obesity favors a basal susceptibility, and a basal susceptibility factor can favor the emergence of ectopic lesions [36].

Therefore, when approaching patients with (HS), weight loss is a recommended measure [37]. Losing weight, in this context, means reducing the incidence and severity of chronic inflammatory diseases and increasing the response to proposed treatment.

Sweating/Hyperhidrosis

The coexistence of hyperhidrosis with (HS) can favor an exacerbation of the disease's symptoms such as bad smell and itching, causing an even greater negative impact on patients' quality of life [38].

A reduction in sweating positively influences the composition of the skin's microbiome and bacterial growth [39]. Microbiomes

vary from one person to another. The human armpit harbors a bacterial community with high biomass. But substantial interindividual variation in bacteria in the axillary areas can be observed, just as within-individual variation is observed in different parts of the body. The use of personal hygiene products such as deodorants and antiperspirants may explain these variations [40].

In the composition of the microbiome of the axillary areas, Staphylococcaceae and Corynebacterium can dominate, under the influence of the use of personal hygiene products [40].

The use of underarm cosmetics can modify the microbiome and stimulate the appearance of odor-producing bacteria such as actinobacteria (Actinomycetota) [41].

Antiperspirants can cause irritation to the axillary skin and thus favor the appearance of (HS) lesions [42]. However, another study states that deodorants should not be implicated in the pathogenesis of (HS), as they are not primarily involved in the onset of the disease [43].

The use of topical antimicrobials is widely used in the treatment of (HS) and has had a positive impact on body odor. Patients who used chlorhexidine solution or benzoyl peroxide wash reported that these products were helpful in controlling body odor [44].

The use of absorbent devices or specific fabrics that reduce the amount of sweat should be considered. Sweat favors the worsening of HS symptoms and injuries, as it alters the skin's microbiome, favoring bad odor, local irritation and secondary infections. The use of clothing made with silver-coated fabrics is indicated in the treatment of (HS), as fibers containing silver can release nanosilver particles. These contribute to the control of the skin microbiome, as they reduce skin colonization by Staphylococcus aureus [45].

Other measures that reduce or eliminate sweating or hyperhidrosis can be applied. Treatment with botulinum toxin A or B appears to be effective in patients with (HS). Botulinum toxin inhibits the release of acetylcholine in presynaptic vesicles, thus reducing sweat production by eccrine and apocrine glands; and hinders follicular rupture, common in the pathogenesis of (HS) [46]. Botulinum toxin also acts by inhibiting neurogenic inflammation and nociceptive innervation [39]. Botulinum toxin appears effective in patients with (HS), including those without concomitant hyperhidrosis, and improves patients' quality of life; but given the scarcity of data and randomized clinical trials, the efficacy and safety of the substance in the treatment of (HS) remain unknown [47, 48].

Laser hair removal can be useful in treating the condition in both men and women. Shaving, however, has been found to be harmful to (HS) wounds [44].

Smoking Cessation

According to epidemiological studies, up to 90% of patients with (HS) are cigarette smokers, and exposure to cigarettes has been associated with an increased severity of the disease and a reduced response to treatment [23]. Tobacco use appears to influence the genetic predisposition to (HS), the formation of follicular plugs and the neutrophil-mediated inflammatory process [23, 49]. Cigarette smoking causes changes in immunity favoring increased constitutive inflammation, distortion of T cell-mediated immunity, impaired immune responses to pathogens and suppression of antitumor immune cell functions [50].

Cigarette smoke, with its chemicals such as nicotine, stimulates pro-inflammatory cytokines present in (HS) lesions, activates acetylcholine receptors (nAChRs) and aryl hydrocarbon receptors (AHRs) and further suppresses the Notch signaling pathway, an active participant in the pathogenesis of the disease [51]. Smoking is associated with increased levels of CRP, fibrinogen, IL-6 and CEA. Furthermore, smoking appears to increase the secretion of IFN-γ from activated T cells, as well as fewer natural killer cells and increased monocytes, granulocytes, and regulatory T cells (Tregs) [52].

Smoking is a global public health problem, often associated with mental health problems. An increasing prevalence of depression and anxiety can be observed among patients with (HS), and identifying patients with mental health problems, and subsequently referring them to specialty services, is becoming an increasing need.

Considering the complex aspect of (HS), treatment of the disease may require the use of two or more adjuvant therapies in order to control infections, obesity, smoking, and psychological impacts. Implementing the applicability of complementary therapies in conjunction with clinical and surgical interventions can favor a comprehensive approach in managing patients with (HS) [53].

Smoking cessation is extremely important. A retrospective cohort study evaluated the response to therapy with oral and topical antibiotics, intralesional corticosteroids and topical washes, during a 6-month follow-up. The study showed that non-smokers and older patients were more likely to improve during follow-up when compared to smoking patients [54].

Patients affected by (HS) can progress with considerable clinical improvement through the use of various lifestyle changes. Among such changes, smoking cessation should be encouraged.

Vitamin Replacement

In addition to standardized measures, the improvement in patients' nutritional status appears to contribute to reducing the appearance of the disease. Zinc supplementation, vitamins A and D in the control of (HS) has been shown to be a measure to be considered [55]. Recent research has shown a beneficial effect of non-pharmacological and/or complementary interventions.

Zinc Gluconate is important in modulating the immune system, and has been shown to be an option in the maintenance treatment of (HS) stages I and II, at a dose of 90 mg/day, divided into three doses given its anti-inflammatory effects [56, 57]. Zinc supplementation has been associated with reduced symptoms and signs. A study involving 22 participants with stages I and II disease treated with Zinc Gluconate, 90 mg/day, showed 8 complete remissions and 14 partial remissions in an average follow-up of 23.7 months. It was observed that the reduction in the dose of the substance to 30 or 60 mg/day favored the recurrence of the disease in those cases of complete remission, and that with the return of the substance to its initial dose of 90 mg/day, the disappearance of recurrences of the disease was observed [58].

Low serum zinc levels have been associated with stage III disease [59]. The association of zinc with nicotinamide, used as maintenance therapy in patients with (HS) stages I and II, previously treated with oral tetracyclines (Minociline, 100 mg/day, for 12 weeks) provided a significant reduction in acute episodes and an increase in survival free from (HS) when compared to controls [60].

Another fact observed was the association of zinc gluconate with 2% topical Ticlosam, applied twice a day for three months. 66 patients with Hurley stage I and II (HS), after 3 months of dual treatment, the modified HS Score and DLQI achieved significant improvement. There was an important reduction in erythema, the number of nodules, the occurrence of new lesions, and the severity of the disease [61]. More pronounced zinc deficiency can be associated with a variety of skin manifestations that can be reversed with systemic zinc replacement. The success in using zinc depends on the disease, the method of application and the zinc salt used [62]. However, more research is needed to determine the indications for zinc in the treatment of dermatological diseases.

It is known that vitamin D has an established role in regulating and maintaining physiological properties of the skin. Vitamin D favors skin immunosuppression, as it increases the levels of regulatory T lymphocytes (Tregs) in the lymph nodes of damaged skin, enabling the suppression of skin inflammation [63]. A comparative cross-sectional study showed that patients with (HS) may have a greater tendency to have vitamin D deficiency [64]. A cohort study showed that genetic dysfunctions observed in vitamin D metabolism are relevant in the pathogenesis of (HS) [65].

There is an inverse correlation between vitamin D levels and systemic inflammation [66]. Hypovitaminosis D favors a reduction in the production of antimicrobial peptides, AMPs, favoring microbial accumulation in the skin and consequently the occurrence of inflammation. Therefore, vitamin D, with its pleiotrophic effect on the skin, can be a therapeutic option in the treatment of dermatoses such as psoriasis and atopic dermatitis, as well as other dermatoses [67].

B12 Vitamin

Studies have discussed the role of homocysteine in (HS) lesions. There was a prevalence of homocysteine in 26 patients with (HS) when compared to 26 healthy controls, showing a significant correlation between plasma homocysteine and the increase in (HS) symptoms [68].

Vitamin B12 is a factor in the degradation of homocysteine to methionine, and when administered in high doses, appears to prevent the recurrence of suppuration in patients with (HS) and concomitant inflammatory bowel disease (IBD) [69].

Elevated plasma levels of homocysteine correlate with the severity of signs and symptoms of HS, as homocysteine, as previously stated, is active in the pro-inflammatory effects of cytokines such as IL-1B, IL-6, IL-12 and IL- 18 [70].

Vitamin B12 also regulates homocysteine levels, which leads to the conclusion that the use of the Vitamin B12 supplementation in patients with (HS) can be beneficial as it promotes a reduction in homocysteine and, consequently, its pro-inflammatory effects.

Mental Health Management

A high incidence of psychiatric disorders is observed in patients with (HS). Pain and purulent discharge, frequently present, are related to depression and anxiety, as well as substance abuse, psychotic and bipolar disorders, and an increased risk of suicide. There is a deep connection between skin, mental health and the central nervous system (CNS). Skin and brain share a common embryological origin [71].

Patients with (HS) need greater attention when managing their physical and psychological health, as they experience a high level of psychological suffering. An important correlation between psychological burden and patients with (HS) was inferred using the Analog Pain Scale (VAS-pain) [72].

Bad odor is a common symptom in (HS) and highly harmful to patients' quality of life. Purulent and foul-smelling discharge has a strong relationship with embarrassment, low self-esteem, stigmatization and social isolation. Such patients present a greater compromise in the quality of life assessed with the use of Skindex or by the DLQI (Dermatology Life Quality Indez) [38, 73]. The intensity of itching was associated with the number of areas of the body affected by the disease, female gender, intensity of suppuration, and the presence of Crohn's disease, while the intensity of the bad smell was related to the highest body mass index (BMI), time duration of the disease, number of affected areas, intensity of suppuration and stage of the disease [73]. Patients evaluated using the numerical scale (NRS, 0-10) presented a greater number of affected body areas and a greater occurrence of itching when NRS was greater than or equal to 3. Itching was associated with (HS) in stage III [74].

Pain, another symptom that favors the impairment of patients' mental health, and was considered the most uncomfortable symptom of (HS) followed by suppuration and itching [75]. Pain progression was associated with Harley stage III (HS) black race, and severity of depression and anxiety. These same factors have been associated with the severity of pruritus, and together with the severity of pain, have been linked to a worse quality of life [76].

Physical and psychosocial limitations that accompany the disease negatively impact patients' daily lives. 145 patients with stage III (HS) showed significantly higher means when evaluated by the DLQI compared to patients with Hurley stage I and II (HS). 75% of patients reported symptoms and physical signs such as suppuration, irritation, pain, itching, bleeding and odor. The severity of symptoms was positively associated with the severity of the disease, difficulty in moving the upper limbs, and negative impact on work, school and social relationships [77].

The social impact caused by (HS) appears to be greater among patients with a late onset when compared to those who had an early onset of the disease [78].

Itching and pain negatively impact sleep quality. Both favor the occurrence of insomnia. They significantly affect the quality and duration of sleep, positively favoring daytime dysfunction [79].

Patients with (HS) need better approaches to managing the disease. They can benefit from participating in support and therapy groups that focus on coping strategies and improvements in quality of life [80]. Mental health can be significantly confused with physical health, favoring an exacerbation of chronic disease states and/or the adoption of preventive measures. In addition to traditional medical treatment, patients with (HS) may need support from other fields of knowledge. "Mind-body" Complementary and Alternative Medicine (CAM), including meditation, hypnosis, Tai Chi, Yoga and massage therapy, can be used even though studies are still needed to demonstrate their effectiveness in treating (HS) [81]. Cognitive behavioral therapy (CBT) and acceptance and commitment therapy can be used as they promote relief from the pain and psychological suffering favored by the disease [82]. It was precisely with the aim of disseminating these new therapeutic modalities for Dermatology, which motivated our research team to develop this article.

Pain and itching control should be promoted to all (HS) patients. Some symptomatic treatment options may be offered. Topical agents (Lidocaine), Paracetamol and Non-Steroidal Anti-Inflammatories (NSAIDs) can be given in episodes of acute pain [83]. In the absence of response to these measures, consider the use of opioids such as codeine, hydrocodone and morphine [84]. In suspected neuropathic pain, evaluate the use of anticonvulsants such as Pregabalin and Gabapentin, and in those patients with suspected cardiopulmonary failure, tramadol hydrochloride can be used [85, 16].

When seeking to improve the quality of sleep and quality of life of patients, it is essential to work to control the itching generated by the lesions [74]. Brodalumab, a monoclonal antibody active against IL-17 A receptors, showed significant improvement in itching, pain and depression, and consequently in the quality of life of patients with (HS) stages II and III, and statins showed an improvement in the score of itch intensity [86].

Palliative Care / Wound Management

(HS) is characterized by chronicity, recurrence, pain and suppuration, that is, it presents itself as a chronic, recurrent, recalcitrant, painful and purulent wound. It requires the most varied management and care strategies, as well as specific dressings. The location of the wound, the extent, applicability, cost, patient comfort, ability to absorb and combat bad odor are some factors that define the type of dressing most suitable for (HS) injuries [87].

Managing acute outbreaks and chronic wounds in the home environment is a real challenge. Study involving 302 patients (168 caucasian; 76 black, 33 Hispanic, 7 Asian, 12 multiracial, and 6 from other ethnic-racial groups) responded to a questionnaire. Gauze, menstrual pads, tissues, toilet paper, antiseptic bandages, bandages were commonly mentioned types of dressings. 102 patients expressed dissatisfaction with current means of wound care. For those 103 patients, the attending dermatologist did not meet wound care needs; and 135, demonstrated that they did not have the financial means to cover the costs, type, quantity of dressings and ideal supplies for caring for their wounds [33]. In another study, involving 908 patients from 28 different countries, 81% (n=734) reported a negative impact on quality of life due to regular dressing changes; 82% (n=744) reported pain when changing dressings; 16% (n=142) reported that they needed five or more dressings a day; and 12% (n=108) stated that it took more than 30 minutes a day to care for their wounds, demonstrating, in the end, high dissatisfaction with the dressings available [88].

Considering the clinical needs not met by patients, a study concluded that (HS) is generally poorly managed, given its burden, with a consequent negative impact on patients' quality of life even when treated by a dermatologist [89].

Topical therapies have been described for the treatment of HS, alone or in conjunction with systemic therapies. But wound care has proven to be fundamental in managing the disease, especially when taking into account its draining aspect.

Optimizing wound care should be a priority. The ideal dressing should fit the wound site, adapt to the anatomical location, absorb the purulent content, and provide an adequate moisture balance [90]. The dressing should also focus on cost-effectiveness, ease to access and improving the quality of life of (HS) patients [87]. Absorbent or superabsorbent dressings are recommended for post-surgical wounds and those that are extremely moist in order to keep them dry. Foam-type dressings are less absorbent but suitable for wounds as they result in reduced pain for patients [90]. The foam-type dressing impregnated with silver particles would be close to ideal for treating wounds if it were not for the high cost and difficulty in access by patients [87].

Negative pressure wound therapy (NPWT) appears to provide adequate conditions for wound healing as it favors granulation and infection control, while reactive oxygen species (ROS) have a role in organizing a normal healing response, recruit lymphoid cells to the wound area, and coordinate tissue repair (Dunnil, C., et al., 2017) through the regulation of physiological and pathological processes such as inflammatory response, cell proliferation, neovascularization, granulation and extracellular matrix formation [91, 92].

Regarding the access to dermatological care, a study involving 1,040 participants of which 97% were women and 72% were white, 47% reported having access to a dermatologist, 38% reported not having access to a dermatologist, and 15% stated they did not receive medical advice about to (HS) 55.9% suffered from anxiety, 53.6% suffered from depression, and 50.7% from obesity. 74.2% of participants reported being stigmatized when trying to the access care for their illness [93].

When managing (HS), a broad approach is necessary, and even considering the limited existence of evidence regarding what would be the ideal treatment for (HS), adequate wound care is essential in managing the disease. (HS) patients, possibly driven by uncertainty in treatment outcomes, have shown increasing interest in the use of non-pharmacological approaches as a complement to standard therapy [94].

The success of healing depends on the choice of the appropriate dressing, which must respect the characteristics of the wound, adherence and patient comfort [95]. But the active participation of the attending physician and patient education regarding the nature of the disease, standard therapy and alternative/com-

plementary medicine are of fundamental importance, as is the screening, diagnosis and treatment of comorbidities.

Patients must receive guidance and/or strategies on how to deal with the signs and symptoms of the disease. Pain control, mental health care, wound care, guidance on the use of lotions, use of underwear, baths, smoking cessation, weight loss, physical exercise, stress management, referrals reference services/social and psychological support programs, emotional support at home and at work are measures to be considered. Therapies that seek to reduce arousal such as meditation and relaxation as well as behavioral therapies or habit reversal are measures to be practiced. Antiseptic washing, mechanical cleaning of wounds, and the use of dressings, even if they are not ideal, should be advised to patients.

Hidradenitis Suppurativa and the Repercussions on Women's Health

Sexual distress is defined as negative emotions about sex, such as regret, frustration, guilt, and unhappiness [38, 96, 97]. Patients with HS often report impairments in sexual health resulting from the psychological and physical consequences of having this disease Contributing psychological deficiencies include depression, embarrassment, fear of contagion, and shame. Physical disabilities include pain, drainage, itching, scarring, and bad odor. Studies on other chronic dermatological diseases, such as psoriasis, have found that compromised sexual health are particularly prominent in women [80, 98].

(HS), is particularly prevalent in women of childbearing age and can have diverse psychological and physical consequences. Paradoxically, studies point to cases of (HS), that showed significant improvements during pregnancy, presumably related to gestational hormones, and that around 90 days after birth, the conditions worsen again [99]. The chronic and debilitating nature of this disease can lead to significant impairments in patients' sexual health and overall quality of life. There are qualitative systematic reviews that have examined gender differences in the impact of (HS), on sexual health. Additionally, we review gaps in the sexual health management of patients with (HS), and outline recommendations to appropriately address sexual concerns and optimize care [100].

Sexual distress is defined as negative emotions about sex, such as regret, frustration, guilt, and unhappiness. On the www.journalonsurgery.org 15 other hand, sexual dysfunction refers to deficiencies in the physical aspects of sexual activity, such as lubrication, penetration, maintenance, orgasm, and resolution. Impaired sexual health includes sexual distress and sexual dysfunction. Patients with (HS), often report impairments in sexual health resulting from the psychological and physical consequences of having this disease. Contributing psychological deficiencies include depression, embarrassment, fear of contagion, and shame. Physical disabilities include pain, drainage, itching, scarring, and bad odor. Studies on other chronic dermatological diseases, such as psoriasis, have found that compromised sexual health is particularly prominent in women. Few studies have specifically investigated how women's and men's sexual health may be affected differently by (HS). This review examines the existing literature on gender differences in sexual health in patients with (HS), identifies gaps in practice, and provides strategies to improve sexual health care. (HS) is a highly burdensome chronic disease that is significantly associated with deficiencies in sexual health in several validated instruments in male and female patients. The sexual health burden caused by (HS), appears to be greater for women. Additional studies are needed to further elucidate the differential impact of (HS), on sexual disability by gender. This may also shed light on specific interventions that may be beneficial for women or men. Impairments in quality of life due to sexual health can be mitigated with proactive medical questioning and counseling about sexual health in all patients with (HS), regardless of the presence of genital lesions. Sexual health should be addressed when evaluating the severity of (HS), and treatment outcome. Increasing awareness about sexual disability in (HS), is essential to optimize care [1].

Physical Exercises

Practicing physical activities is useful in the prevention and treatment of many diseases as it improves cardiorespiratory, metabolic and musculoskeletal capacity, and consequently improves the immune and antioxidant response capacity, and thus reduces the incidence of inflammatory diseases.

Physical activity appears to protect against obesity, metabolic syndrome, smoking, diabetes and mental disorders. All of these conditions are related to hidradenitis suppurativa.

Physical training improves clinical results in patients with obesity and metabolic syndrome. Chronic low-grade inflammation appears to be associated with a variety of chronic diseases. A sedentary lifestyle and the accumulation of body fat favor significant pro-inflammatory effects: body fat is positively associated with CRP and inversely with the levels of adiponectin and interleukin (IL)-10; visceral fat favors IL-6 and tumor necrosis factor (TNF-α), and a sedentary lifestyle inversely favors IL-10 and positively TNF-α [101].

Systematic review and meta-analysis including 16 studies showed that aerobic exercise provided a significant reduction in body mass index (BMI), abdominal circumference, maximum oxygen consumption, blood pressure (systolic and diastolic), fasting blood glucose, lipoprotein low density and triglyceride levels [102]. Another systematic review analyzing 20 randomized controlled clinical trials (RCTs) highlighted the positive impact of physical training on inflammatory markers. There was a significant reduction in serum levels of TNF-α, C-reactive protein (CRP), IL-8, and a significant increase in IL-10 [103].

Physical exercise is recommended practice for diabetics. Regular physical exercise has beneficial consequences on body composition, cardiovascular profile, insulin response and quality of life [104]. Patients with type 2 diabetes who practice traditional Chinese exercises showed a significant reduction in glycated hemoglobin and fasting blood glucose [105].

In adults, physical training showed an improvement in markers of severity in type 1 diabetes such as body mass, body mass index (BMI), maximum oxygen consumption (peak VO2) and low-density lipoprotein (LDL), while in children, there was reduction in waist circumference, LDL, triglycerides and insulin dose [106]. Systematic review and meta-analysis, analyzing

adiponectin, TNF-α, inflammatory cytokines and risk for type 2 diabetes, showed that the risk for type 2 diabetes was significantly associated with elevated levels of inflammatory cytokines (IL-1β, IL-6, IL-18, CRP) and reduced levels of adiponectin [107]. On the other hand, a systematic review and meta-analysis involving 1239 patients with type 2 diabetes showed that inflammatory markers after aerobic physical training showed lower serum levels in patients treated with physical exercise when compared to controls. Aerobic physical training showed a reduction in circulating levels of C-reactive protein (. PCR), resistin, TAN-α [108]. Another systematic review, enrolling 1257 participants with a mean age of 52 years, showed that different types of physical training increase adiponectin levels and reduce the levels of pro-inflammatory cytokines (TNF-α, IL-6 and CRP) [109].

The anti-inflammatory actions of IL-10 can be attenuated after physical exercise, but also in chronic inflammatory states with type 2 diabetes regardless of its circulating concentrations [110].

Smoking and drinking alcohol increase the risk of depression and other mental illnesses. A study involving 901,721 premenopausal women and 943,710 postmenopausal women aged 40 years or older concluded that ex-smokers or active smokers had a dose-dependent increased risk of depression compared to women who were never smokers [111]. A study with 3,191 participants aged between 18 and 70 years concluded that the practice of physical exercise associated with nicotine replacement therapy (NRT) helps to quit smoking in the short term, but the effectiveness of this association in the long term was not evidenced [112].

Practicing physical activity can help prevent and treat mental disorders such as depression and anxiety. Results of a systematic review and meta-analysis indicate that both traditional Chinese exercise and aerobic exercise in general, as well as complementary and non-pharmacological approaches, improve sleep quality in elderly people [113]. Yoga interventions improve physical function (strength, balance, and flexibility), mental well-being, and quality of life in people aged 60 and over [114]. Physical activity and/or physical exercise, in interventions of varying intensity, can reduce symptoms of depression, and interventions of moderate to vigorous intensity and light intensity can reduce symptoms of anxiety in young people [115]. Randomized clinical trial concludes that twelve weeks of high-intensity interval training (HIIT), moderate-to-vigorous intensity continuous training (MICT) and Nordic walking (NW) can provide prolonged positive effects on functional capacity, quality of life and symptoms of depression [116].

Physical exercise, whether body-mind activities or physical conditioning activities, appears to be effective in improving mental disorders, cravings and quality of life in drug addicts [117].

Regarding HS, screening and treatment of comorbidities, worsening factors and/or chronicity are mandatory. Obesity, metabolic syndrome, diabetes mellitus, smoking, depression, anxiety, polycystic ovary syndrome, inflammatory bowel disease and other autoinflammatory diseases must be screened for and treated. In the above, it is observed that physical activity plays an important role in managing several of these diseases often associated with HS. Despite this, there is no significant evidence to support the symptomatic improvement of HS with the practice of any type of exercise modality [118]. It is only known that the absence of physical activity can be associated with hidradenitis suppurativa [24]. On the other hand, physical activity alone or associated with diet is possibly associated with additional benefits for patients with HS [119]. Therefore, whether for direct treatment of HS or indirectly, through the treatment of comorbidities, it is recommended to practice sports.

The treatment of comorbidities benefits the patient (HS) with the resulting benefits for their general condition. However, the clothes to be worn during exercise must be suitable, the bandages must be absorbent and flexible, soft and comfortable, the environment must be well ventilated or air-conditioned, reducing perspiration.

When practicing aquatic exercises, avoid using common swimming pools especially during the suppuration/exacerbation phases of (HS) or water in higher temperatures or higher chlorine content as chlorine can exacerbate inflammation by reducing the skin's bacterial flora [120].

Considering concerns about body image and the severity of the disease, the exercise modality must be the most comfortable and convenient for the patient than the chosen physical activity, be it physical training in a gym or at home with the help of a physical educator, that is, the practice of a mind-body modality, becomes a supporting measure to the medical or surgical treatment of (HS). The objective is that the exercise is well used, respecting the patient's conditions, and the benefits arising from it are as beneficial as possible.

Hidradenitis Suppurativa and Oral and Systemic Health

Oral manifestations are found with high frequency in cases of concomitant autoimmune, autoinflammatory, systemic chronic diseases. General dysregulation of IL-17 may thus contribute to host changes that lead to oral microbial dysbiosis. Interestingly, a key role for the IL-17 pathway in the pathogenesis of (HS) has recently emerged, strengthening the possible relationship between HS and oral lesions. Furthermore, HS shares etiopathogenetic similarities with oral lesions, as genetic susceptibility, environmental factors, and immunopathological mechanisms can lead to a dysregulation of the inflammatory response [121]. Common immune-mediated oral diseases include rheumatic disorders, ulcerated and erythematous lesions such as recurrent aphthous stomatitis, erythema multiform and drug-related ulcerations, lichenoid lesions, vesiculobullous lesions, benign migratory glossitis, desquamative gingivitis, and orofacial granulomatosis. Most of these lesions, as well as HS, which is characteristically relapsing, persist and recur frequently, and may be the first clinical signs or symptoms of the general disease [122]. Dental prophylaxis and dental consultations are extremely important to maintain quality of life and good digestion, two parameters that are particularly important in patients with chronic diseases. Dental-dermatological cooperation must be improved to create ad hoc in-hospital integrated care pathways for HS patients, especially those who are biologic candidates who have to undergo a mandatory oral health assessment. Dental prophylaxis should be promoted every 3 months in patients with (HS) and further studies are needed to understand the impact of HS thera-

pies on oral comorbidities (i.e., epigenetics and resistome [122, 123, 121]. As results a total of 102 patients (44.0±0.9 years, body mass index 27.0±2.2 kg/m2) were enrolled. Remarkably, 48% and 43% did not undergo at least an oral hygiene or a dental visit each year, respectively. Oral disorders were found in 55.9% of patients with HS, in particular 39.2% had caries and 46.7% reported at least one missing tooth. The main oral manifestations in patients with HS were recurrent aphthous stomatitis (N=19, 19.2%), amalgam tattoo (N=14, 14.1%), leukoplakia (N=11, 11.1%), nicotinic stomatitis (N=9, 9.1%), papilloma (N=8, 8.1%), and geographic tongue (N=8, 8.1%). Whilst the main predictor of oral pathological conditions was Hurley staging (P=0.0276), multivariate regression analysis indicated that gender and International Hidradenitis Suppurativa Severity Score System (IHS4) were the main predictors for the presence of caries and number of missing teeth [121]. Today we already have strong enough scientific evidence to affirm that risk factors such as smoking and neuropsychic disorders affect oral and systemic health levels in different clinical scenarios certified for psoriasis. Using the principles of specificity and sensitivity, we can state that there are great possibilities for HS to also be subject to such complications, after all this is also an inflammatory dermatosis. Control of Oral Biofilm in conditions of Dysbiosis (Oral Microbiome) and control of oral infections contributes to favorable evolution of Inflammatory Dermatoses in general [2].

Table 2: Recommendations on the Applicability of Conventional Complementary and Integrative Practices for Injury Management

Areas	Actions	Objetive
Dietetic Actions	Reduction or elimination of dairy, yeast, sugar and fermented foods.	Reduce weight; improve body image; improve physical and mental health; control comorbidities.
Clothing	Avoid tight, tight underwear and/or clothing. Prefer loose, loose clothing that allows perspiration and sweat absorption	Eliminate mechanical friction and skin maceration and consequently inflammation and/or alteration of the skin microbiome and risk of infections.
Weight loss	Appropriate dietary actions and sports practices.	Reduce weight, and consequently, mechanical friction, inflammation, skin maceration in skin folds, and physical and mental well-being.
Actions against sweating	Adoption of clothing that reduces perspiration and facilitates sweat absorption. Use of botulinum toxin in cases of hyperhidrosis. Air conditioning of the environment.	Eliminate sweat and consequently maceration and alteration of the skin's microbiome.
Actions against smoking	Participation in public policies, treatment and support groups against smoking. Use of anti-smoking anxiolytic drugs.	Stop smoking and thus eliminate an important cause of inflammation and chemical dependency, improving physical and mental health.
Vitamin supplementation	Replacement of vitamins D, Vitamin B12, Zinc Gluconate, Magnesium	Improve the immune system, and thus reduce the risk of inflammation and worsening of injuries.
Tracking and controlling mental illnesses.	Combat anxiety and depression by participating in support services and treatment of mental disorders; participation and integration in social groups. Adoption of alternative practices such as yoga, meditation, Tai Chi, massage therapy, and prayer groups (exercising faith).	Reduce psychological suffering; improve sleep quality; increase resilience; improve self-esteem and social acceptance; improve work performance; reduce physical and moral pain; improve self-care.
Pain control	Use of topical or systemic medications for pain relief.	Improve sleep quality; get pain relief; improve the life quality.
Wound management	Draining/cleaning wounds with appropriate technique; use of antiseptics and/or topical antibiotics; use of dressings that absorb purulent secretion; wearing loose clothing that allows perspiration.	Improve the appearance of the skin; relieve pain and itching; reduce or eliminate odor; reduce the risk of secondary infections.
Physical exercises	Physical training or adopting mind-body measures.	Improve physical and mental health. Assist in the treatment of comorbidities, and thereby improve quality of life. Oral Health: Control of Oral Biofilm in conditions of Dysbiosis and control of oral infections contributes to favorable evolution of Inflammatory Dermatoses in general.

In summary, it is necessary to give the patient a minimum of options for self-management of (HS) through educational measures, easy access to medications, and social and psychological support in order to achieve more promising results in managing the disease. Self-management based on confidence and competence can translate into a reduction in triggers, control of disease activity, reduction of pain levels, improvement in sleep quality and mental conditions and consequently an improvement in quality of life. (HS) does not yet have a curative treatment. Many of the measures covered in this study show positive results, but many still await validation through randomized and controlled clinical trials, and further scientific research to strengthen the levels of evidence, and thus improve the patient's living conditions. Control of Oral Biofilm in conditions of Dysbiosis and control of oral infections contributes to favorable evolution of Inflammatory Dermatoses in general.

Theoretical Foundation for Complementary and Integrative Therapies in the Mind/Body Practice Modality and Some of its Categories for Injury Management

The natural and progressive exacerbation of the clinical courses of (ID) significantly affects the mental health of patients and caregivers. In this way, contributing to the promotion of cognitive and behavioral restructuring in these patients can mean improving their levels of general well-being. Such restructuring can take place through Complementary Therapies NCCIH / NIH Statements in the Practices / Mind Category.

The scientific method that makes it possible to incorporate the knowledge of Complementary Therapies in the Mind/Body Practices Category into conventional clinical routine is called translational research.

Such research consists of establishing a direct connection between the results of pre-clinical and methodological research, in the case of Contemporary Neurosciences applied to conventional clinical practices, in order to produce viable complementary treatments, which can contribute to alleviating the discomfort and general ailment caused by dermatological lesions of inflammatory dermatoses in general, including (HS) [2].

Despite being popularized, the epistemology of Complementary Therapies is quite complex and still poorly understood. For example, the use of complementary and alternative medicines is common among people with skin conditions, specifically those with psoriasis (Schoffski 2007).

The objective of analyzing the subject of complementary therapies is due to the fact that patients with chronic degenerative diseases or chronic patients (CP) generally adopt these resources when conventional treatments do not meet their personal expectations of recovery. Most people with inflammatory dermatoses seek their dermatologist's opinion on the existence of new treatments and complementary or alternative therapies that can provide palliative relief to the suffering caused by the injuries presented. According to the Cochrane Complementary and Alternative Medicine Field, the number of people using these therapies has grown steadily [124]. From the point of view of the scientific methodology of Evidence-Based Health, terms with these characteristics are called “thesauri or pluralistic terms”, that is, their meaning varies according to the theoretical-cultural framework adopted. Currently, there are two accepted technical meanings for Complementary and Integrative Therapies, one from the WHO (World Health Organization) and other from the (National Center for Complementary and Integrative Health) NCCIH/NIH USA.

Created by the WHO in 1948, Health Descriptors (DeCs) or Medical Subject Heading (MeSH) for Complementary and Alternative Therapies mean any activities, objects, techniques and methods validated within conventional medicine that can be applied in a co-intervention regime (complementary) or in a regime of substitution (alternative) to the more invasive and/or radical conventional resources with others, less invasive and more conservative, with the aim of helping the patient during their rehabilitation process The “Alternative Therapeutic Resource” or “Therapeutic Alternative” is any resource also belonging to CONVENTIONAL MEDICINE, as long as it is applied as a replacement for another equally validated resource, complying with the principles of Evidence-Based Health (EBS) and Internal Medicine and Therapeutics (MIT) on specificity, sensitivity, need and opportunity. Thus, any area of Health that has some potential as a therapeutic resource, so that it can be applied alone (Monotherapy Resource) or in a co-intervention regime (Complementary Therapeutic Resource), will only depend on the patient's baseline conditions and of their general clinical demands. However, Complementary and Alternative Therapies also consist of sets of systems, practices and medical and health products, which most of them, are STILL OUTSIDE THE VALIDATION METHODS OF CONVENTIONAL ALLOPATHIC MEDICAL PRACTICE, and therefore, are not supported by Scientific Evidence.

But there are also many types of these therapeutic modalities that already have validation support from (MBE). Although many of these therapeutic resources do not yet have biomedical explanations, however, as they are researched in greater methodological detail. Thus, some practices (PHYSICAL THERAPY MODALITIES; DIET; ACUPUNCTURE) will become widely accepted.

Some of these therapies are able to help people get some relief, allowing them to better cope with their health condition [3].

To help ensure consistent classification of these interventions, the US National Institutes of Health (NIH) created the National Center for Complementary and Integrative Health (NCCIH/NIH/USA), which determined the criteria for defining and classifying such resources. Thus, the term “Complementary Therapy” refers only to the use of additional interventions to conventional medicine. The term 'Alternative Therapy' refers to treatments used in place of conventional medicine, whilst the term 'Integrative Therapy' describes a combination of conventional medicine and complementary and alternative medicine provided there is evidence of effectiveness, efficiency and safety (NCCIH 2017) . Thus, Complementary, Alternative and Integrative Therapies were classified by Categories and within each of them, by Modalities: Mind/Body Practices; Natural products; Other Practices. Each of them has well-established methodological criteria for analyzing effectiveness, efficiency and safety.In the article at hand, we will only be analyzing Complementary Therapies – Mind/Body Practices Category and some of its Modalities.

Complementary and alternative therapies (CAMs) are a set of features that although not considered standard and sometimes valid, it is widely used by patients suffering from inflamatory dermatoses, when conventional medicine does not produce the effect they expect. The relevance of this study was to make clear that different complementary therapies act in different ways and may be beneficial or not. For instance, the CAM Mind / Body Practices are therapeutic interventions organised on the knowledge about of mind and body interactions based on Neurosciences (Kandola 2016) [125]. These techniques can be used to reduce the feeling of tension and effects of distress, in order to enhance the physiological and psychological well-being of an individual. Mind / Body Practices are a set of intervention strategies pertaining to the field of knowledge of Neurosciences linked to behavior, and reorganize innate neuropsychic skills through service protocols, applied in a targeted way both intellectual activities as specific bodily activities capable of producing significant clinical results. These techniques do not make use of any substance or specific equipment [124, 2].

Although all the intrinsic mechanisms of how these therapies work have not yet been fully understood, magnetic resonance studies indicate that they produce modulation of the sympathetic autonomic nervous system, producing a state of relaxation and stress management, quite similar to psychotropic drugs, which has helped increase the effectiveness of treatments in many people with psoriasis [126]. Emotional distress plays an important role, as part of a vicious circle of interactions that lead to worsening of psoriatic skin (Mohum 2006) [127]. Within the Category of Mind/Body Practices there are several therapeutic modalities, such as:

Meditation

State of consciousness in which the individual eliminates environmental stimuli from consciousness so that the mind can focus on a single thing, producing a state of relaxation and stress relief. A wide variety of techniques are used to clear the mind of stressful external interference. Includes meditation therapy Synonyms: Transcendental Meditation; Transcendental Meditation

Mind-body Therapies

Treatment methods or techniques that are based on knowledge of the interactions between mind and body. These techniques can be used to reduce the feeling of tension and the effect of stress, and to improve an individual's physiological and psychological well-being. The Progressive Relaxation Techniques, Stretching Techniques. Synonyms: Mind-Body Therapies; Mind-Body Therapy; Therapies, Mind-Body; Mind-Body Therapy; Mind-Body Medicine; Mind Body Medicine.

Yoga

An important orthodox system of Hindu philosophy based on Sankhya (metaphysical dualism), but different from it in being theistic and characterized by the teaching of raja-yoga as a practical method of liberating the self. Includes a system of exercises to achieve bodily or mental control and well-being with liberation of the self and union with the universal spirit. Synonyms: none.

Hypnosis

Hypnosis State of greater receptivity to suggestions and guidance, initially induced by the influence of another person Synonyms: Hypnosis; Images of Mesmerism (psychotherapy). The use of mental images produced by the imagination as a form of psychotherapy. It can be classified by the modality of its content: visual, verbal, auditory, olfactory, tactile, gustatory or kinesthetic. Common themes derive from images of nature (e.g. forests and mountains), images of water (e.g. streams and oceans), images of travel, etc. Images are used in the treatment of mental disorders and to help patients deal with other illnesses. Images frequently. It is part of HYPNOSIS, AUTOGENIC TRAINING, RELAXATION TECHNIQUES and BEHAVIORAL THERAPY Additional tree Synonyms: Images (Psychotherapy); Images; Guided imagination; Guided images; Directed Daydreaming Therapy; Targeted Daydreaming Therapies; Daydream Therapies, Directed; Daydream Therapy, Directed; Directed Daydreaming Therapies; Therapy, Directed Daydreaming

Biofeedback

A therapy technique that provides the status of one's own AUTONOMIC NERVOUS SYSTEM function (e.g., skin temperature, heart rate, brain waves) as visual or auditory feedback for self-related conditions (e.g., hypertension, migraine) . Synonyms: Biofeedbacks, Psychology; Psychological Biofeedback; Psychology Biofeedbacks; Psychophysiological Feedback; Opinion, Psychophysiological; Psychophysiological Feedback; Biofeedback; Biofeedbacks; Biofeedback (Psychology); Biofeedbacks (Psychology); Myofeedback; Myofeedbacks; False Physiological Feedback; False physiological feedbacks; Physiological False Feedback; Physiological False Feedback; Physiological Feedback, False; Physiological feedback, false; False physiological feedback; False physiological feedbacks; False Physiological Feedback; False Physiological Feedbacks; False Physiological Feedback; False physiological feedback Among all the techniques described above there is a common denominator, called Breathing Techniques or Therapeutic Respiratory Exercises.

Therapeutic Respiratory Exercises

Aim to deepen inspiration or exhalation or even change the frequency and rhythm of Breathing Synonyms: Exercise, Breathing; Respiratory Muscle Training; Respiratory Muscle Training; Respiratory Muscle Training; Qigong; Qi Gong; Gong, Qi; Chi Kung; Kung, Ch'i. Diaphragmatic Breathing, Slow Breathing and Stretching Techniques. In reality, all mind/body practices are based on therapeutic breathing techniques.

From a practical point of view, the fundamental technique of diaphragmatic breathing consists of the following sequence of movements:

1. Place your hand on your abdomen (belly) close to your navel
2. Close your eyes and focus on your breathing. Realize that when you inhale (pull in air), your abdomen drops and when you exhale (release air) your abdomen rises.
3. Try performing the opposite movement: The abdomen rises when inhaling and falls when exhaling.
4. Breathe slowly as much as you can.
5. The goal is to count from 1 to 10 while breathing in, count from 1 to 10 while holding the air, and count from 1 to 10 to release the air.
6. Try to do the exercise sitting in an armchair, lying in the Yoga lotus position.
7. The suggestion for duration of severe exercise is about 15 minutes/day, for a relaxing effect of about 24 hours.

Materials and Methods

The original research protocol envisaged was the elaboration of a quantitative systematic review with meta-analysis or subgroup analysis, depending on the degree of heterogeneity of the studies retrieved. To evaluate the methodological quality of the studies that were included, the application of the Research Tool was planned, the Higgins Bias Risk Analysis Tool for Randomized Clinical Trials, intended for analyzing the methodological quality of randomized clinical trials that were eventually found [128]. To the assessment systematic reviews methodological quality, was selected the AMSTAR Scale 2 (A Measurement Tool to Assess Systematic Reviews 2), intended for quality analysis methodology of Quantitative Systematic Reviews that are eventually retrieved by specific search strategies, using health descriptors, or MeSH (Medical Subject Headings), in combination with Boolean operators (AND / OR / NOT) [129].

Strategy Search for Submission in Electrocnic Databases

(psoria* and (diet* or nutrition or macrobiotic or Gerson or antioxidant* or "mind-body" or meditation or imagery or hypnosis or bioelectromagnetic* or electromagnetic* or electroacupuncture or traditional or folk or naturopathy or ayurved* or "Traditional Chinese Medicine" or TCM or homeopathy or antineoplaston or chelation or immunoaugmentation or shark or "manual healing" or massage or chiropractic or "therapeutic touch" or herb* or "physical therap*" or acupuncture or moxibustion or "cupping therapy" or "therapeutic exercise*" or "Tai Chi" or complementary or alternative or aromatherapy or reflexology or reiki or cam or yoga or music or "tea tree" or "aloe vera" or anthroposophy or "auricular therapy" or "holistic health" or "horticultural therapy" or "Arabic medicine" or "Asian medicine" or "African medicine" or Kampo or unani or shamanism or mesotherapy or psychology or "breathing exercise*" or "laughter therapy" or "mental healing" or psychodrama or psychophysiology or "relaxation therapy" or Taiji or acupressure or kinesiology or manipulation or "tissue therapy" or eclecticism or reflexotherapy or rejuvenation or "acoustic stimulation" or "art therapy" or "colour therapy" or "dance therapy" or Speleotherapy or "faith healing" or magic or occultism or Radiesthesia or witchcraft or biofeedback or "immuno augmentation therapy" or "natural remedy" or "natural remedies" or "drama therapy" or visualisation or auriculotherapy or organotherapy or phytotherapy or reflexotherapy or "sensory art therap*" or "spiritual therap*" or "support group*" or "self-help group*"): and oral diseases ti,ab) "Psoriasis"[Mesh] OR "Psoriases"[Text Word] OR "Pustulosis of Palms and Soles"[Text Word] OR "Pustulosis Palmaris et Plantaris"[Text Word] OR "Palmoplantaris Pustulosis"[Text Word] OR "Pustular Psoriasis of Palms and Soles"[Text Word] OR "Arthritis, Psoriatic"[Mesh] OR "Psoriatic Arthritis"[Text Word] OR "Psoriasis Arthropathica"[Text Word] OR "Psoriasis, Arthritic"[Text Word] OR "Arthritic Psoriasis"[Text Word] OR "Psoriasis, Arthritis"[Text Word] OR "Glossitis, Benign Migratory"[Mesh] OR "Benign Migratory Glossitis"[Text Word] OR "Migratory Glossitis, Benign"[Text Word] OR "Tongue, Fissured"[Text Word] OR "Glossitis Areata Exfoliativa"[Text Word] OR "Geographic Tongue"[Text Word] OR "Stomatitis Areata Migrans"[Text Word] "Oral Health"[Mesh] OR "Dentistry"[Mesh] OR "Tongue"[Mesh] OR "Tongue, Fissured"[Mesh] OR "Fissured Tongue"[Text Word] OR "Fissured Tongues"[Text Word] OR "Tongues, Fissured"[Text Word] OR "Lingua Plicata"[Text Word] OR "Scrotal Tongue"[Text Word] OR "Tongue, Furrowed"[Text Word] OR "Furrowed Tongue"[Text Word] OR "Furrowed Tongues"[Text Word] OR "Tongues, Furrowed"[Text Word] OR "Tongues, Fissure"[Text Word] OR "Stomatitis"[Mesh] OR "Stomatitides"[Text Word] OR "Oral Mucositis"[Text Word] OR "Mucositides, Oral"[Text Word] OR "Oral Mucositides"[Text Word] OR "Oromucositis"[Text Word] OR "Oromucositides" [Text Word] OR "Mucositis, Oral" [Text Word]

Details of the two analysis tools used are presented below:
Higgins Bias Risk Analysis Tool for Randomized Clinical Trials adopted by the Cochrane Collaboration:

- Generation of the allocation sequence;
- Allocation secrecy;
- Masking of participants and employees;
- Masking of results evaluators;
- Incomplete data;
- Selective reports;
- Other sources of prejudice.

The classification about the risk of bias as low risk of bias, high risk of bias, or unclear risk of bias. Which are expressed by colors: low risk of bias (green), high risk of bias (red), risk of indeterminate (unclear) bias (yellow), as shown in the table below.

The study in question aimed to analyze the impact of NCCIH / NIH Complementary Therapies on the occurrence, severity and chronicity of (HS). To this end, the basic research question was organized within a PICOT Question (Problem, Intervention, Control, Result and Time). To this end, Health Descriptors or MsSH (Medical Subjects Headings) were selected: Treatments and Hidradenitis Suppurativa, Hidradenitis Suppurativa, and more specific terms in the thematic focus of the project included Hidradenitis Suppurativa, Acne Inversa and Verneuil's Disease.

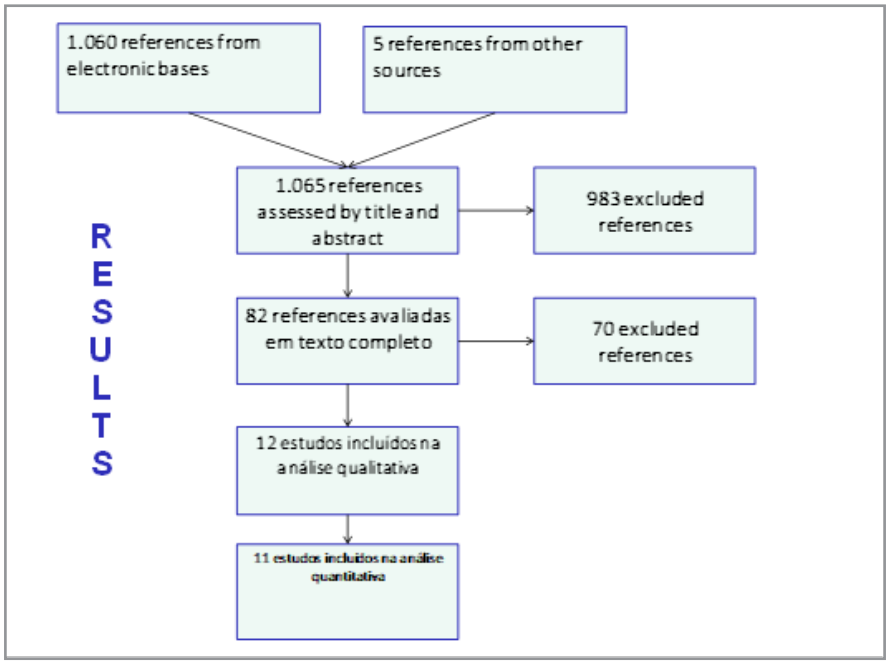
PICOT Question: What is the impact of the Applicability of Complementary Therapies for the Promotion of Integrative Health Hidradenitis Suppurativa?

Which were submitted by Webliography in the electronic databases Pubmed, Google Scholar and Cochrane Library, using specific search strategies, in association with the Boolean operators OR, AND and NOT. The following primary studies were selected (Case-Control Studies, Observational Studies and Randomized Clinical Trials). Searches for qualitative and quantitative secondary clinical studies were also carried out in specific electronic databases. Only articles in English published between 1990 and 2023 were included in this study. Studies published in non-scientific newspapers and magazines, narrative reviews, theses and monographs were excluded.

Among the selected articles, preference was given to those with clearer analyzes and related to the topic in question, that is, articles that established some relationship between the level of mental health, well-being and quality of life in (HS), and/or comorbidities, seeking to clarify the interrelationships between people's lifestyle and the diseases that affect them and how these diseases can be interconnected as causes or consequences of each other in a relationship of interdependence.

Results

prisma flow



Specifically about (HS), 1065 studies of different designs were retrieved, distributed at different levels of the Oxford Evidence Pyramid. It is worth noting that no randomized clinical trials (RCTs) were found within the thematic focus proposed by this study, despite the large volume of information retrieved, the majority of studies found are located at the base of the Oxford Evidence Pyramid, that is, low (EPIR – Estimated Percentage of Information Reproductivity) [2].

In practice, this means that such studies have a low degree of information reproducibility, or practically non-existent reproducibility capacity. However, when applying the principles of Sensitivity, Specificity, Necessity and Opportunity, of Evidence-Based Medicine, 11 randomized clinical trials (RCTs) were recovered, but for Psoriasis and Atopic Dermatitis, both belonging to the same class of diseases in which they were classified (HS), and 6 on-going studies, descrebed above). All of these (RCTs) were evaluated according to the Higgins tool and showed a low level of bias, which means a reasonable degree of reproducibility,and resulted in a meta-analysis.

The 11 (ECR), risks of bias and the metanalysis are detailed below.

Table 3: Randomized Clinical Trials Complementary Therapies Category Mind/Body Recovered for Applicability in Inflammatory Dermatoses

Study	Amostragem	Gender	Therapeutic Modalities	Inclusion Criteria	Outcomes
Bernhard 1988	12 Psoríase	No Especific	Meditation (mindfulness focusing, breathing, proprioception, music)	TTechnich for Emmotional Stress Reductiobyr Audio Tape.	Clinical Improvement Detectable and confirmed by Specific Markers (PASI / SAPASI)
Bostoen 2012 [130]	50 patients (29 with psoriasis and 21 with atopic dermatitis.	24 men and 26 women	Educational Programme for Emotional Stress Control	The 12-week educational programme consisted of 2-h sessions twice a week, including several components: (i) education on the patient's skin disease, (ii) education on a healthy lifestyle, (iii) application of stress-reducing techniques and (iv) feedback	Clinical Improvement Detectable and confirmed by Specific Markers (PASI / SAPASI)

Fordham 2015 [131]	29 psoriasis patients (22-70-years old	16 females; 13 males).	Mindfulness-based Cognitive Therapy.	MBCT Mindfulness-based Cognitive Therapy	Clinical Improvemente detectable and confirmed by specific marhers (PASI / SAPASI) (DLQI) Dermatology Life Quality Index. (PSS) Perceived Stress Scale. (HADS) Hospital Anxiety Depression Scale
Gaston 1988 [132]	14 patients psoriasis assigned to three groups: meditation, meditation and imagery and waiting list control group.	No specific	Me ditation and imagery.	Me ditation and imagery.	For psoriasis lesions: A Visual Inspection method was planed to assess the severity of psoriasis lesions with 3 items (thickness, erythema, and silvery plaques. 0 referred to no existence or practically clear; 1 referred to very mild; 2 referred to mildly severe; 3 referred to moderately severe; 4 referred to quite severe; and 5 referred to very severe. The fourth item estimated the amount of the scalp covered by the psoriatic lesions: 0 represented 0 to 2%; 1 represented 3 to 20%; 2 represented 21 to 40%; 3 represented 41 to 60%; 4 represented 61 to 80%; 5 represented 81 to 100%. For impact of life events was measured by the (ELS) Experience Life Schedule. For psychological distress was evaluated by the sub scale Psychological Distress of the Psychological Adjustment to Illness Scale Self-Report (PDPAISSR)
Kabat-Zinn 1998 [126]	37 psoríasis patients .	21 phototherapy and 16 photochemotherapy).	Meditation Mindfulness	Phototherapy and photochemotherapy associated with Mindfulness Meditation-Based Stress Reduction Intervention.	SkinTwo target lesions (the most extensive and severe, one on the trunk and one on an extremity when possible were identified by clinic nurses and photographed. Visual inspection assessed skin status, using measure designed specially for this study with four clinical end points: A "First Response (FRP), a "Turning Point" (TP), a Halfway Point (HP) and a Clearing Point (CP). Emmotional outcomes: 22 subjects completed protocol. No change mean (GSI) General Severity Index of the SCL-90-R (o.296 pre; 0.290 pos) for those subjects in the no-tape condition (N=11) and a 35% reduction in the mean GSI for those subjects with complete pre/post data (N=11) in the tape group (0.360 pre; 0.233 post). Although the latter finding did not reach statistical significance in the univariate t test (p=0.18). No chance in STAI was observed in either cohort.

Keinan 1995 [133]	No Espec.	32 psoriasis patients, mean age was 40, none suffered from any other serious illness participated in a 3-month randomised, double-blind, controlled trial in which patients were divided into 3 groups. One group was trained to do biofeedback and relaxation techniques,one was trained to do relaxation only, and the third group received no treatment.	Biofeedback.	Biofeedback and Relaxation Techniques. Relaxation Techniques alone.	Clinical Improvemente detectable and confirmed by specific marhers (SSS) Symptom Severity Scale. (SIS) Symptom Improvement Scale. (SRQ) Self-Report Questionnaire
Leibovici 2009	N = 24 Psoriais and Atopic Dermatitis	Noe Espc.	Vitual Reality Immersion (VRI).	Noe Espc. Vitual Reality Immersion (VRI).	Reducing pruritis. For Psoriasis Vulgaris PASI (Psoriasis Area Severity Index) For Atopic Dermatitis SCORing Atopic Dermatitis Scale.
Nagarajan 2018 [134]	104 psoriasis patients	No Especif.	Video-Assisted Teaching Program on Psoriasis and Relaxation Exercises.	Video-Assisted Teaching Program on Psoriasis and Relaxation Exercises.	In the experimental group, the knowledge score was increased significantly from 9 +/- 2.2 at baseline to 23.6 +/- 1.5 after the intervention. The disability score was decreased from 15.6 to 9.9 and the stress score related to the illness was decreased from 22.8 to 16.9 after the intervention.
Piaserico 2016 [135]	40 psoríasis patients	No Especif.	Biofeedback and Cognitive-behavioural Therapy.	Biofeedback and Cognitive-behavioural Therapy.	40 patients concluded the study (20 patients in the interventional arm and 20 patients in the control arm).Sixty-five percent of patients in the treatment group achieved (PASI 75) compared with 15% of standard (UVB) patients (p = 0.007). (GHQ-12) cases were reduced from 45% to 10% in the treatment group and from 30% to 20% in the control group (p = 0.05). The Skindex-29 emotional domain showed a significant improvement in the (CBT/Biofeedback) group compared with control patients (–2.8 points, p = 0.04).

Tausk 1999 [136]	11 psoriasis patients receiving Hypnosis.	No Especif.	Hypnosis (Imagery.)	Hypnosis with active suggestions (Active suggestion)	Clinical Improvemente detectable and confirmed by specific marhers PASI
Zacharie 1996 [127]	51 psoriasis vulgaris patients	No Especif.	Hypnosis	Relaxation Training / Hypnosis (Imagery).	Clinical Improvemente detectable and confirmed by specific marhers PASI (Psoriasis Area Severity Index). TSS (Total Sign Score) of a psoriasis reference plaque selected prior to the study. LDBF (Laser doppler Skin Blood Flow) Skin blood flow. BSQ (Brief Stress Questionnaire). SRS (Social Readjustment Scale questionnaire). BDI (Beck's Depression Inventory questionnaire).

(Monson & Monson 2019 [2]

Characteristics of Ongoing Studies:

CMCBCOP

Study name	"Oral psori-cm01, a chinese herbal formula, plus topical sequential therapy for moderate-to-severe psoriasis vulgaris: Pilot study for a double-blind, randomised, placebo-controlled trial."
Methods	RCT (Large-scale randomized control trial)
Participants	Eligible patients with psoriasis vulgaris (PV) were enrolled into a randomized comparison in which all subjects received topical sequential therapy Interventions PSORI-CM01 or placebo for 12 weeks.
Outcomes	The primary outcome measure was the relapse rate. Treatment response was computed from Psoriasis Area and Severity Index (PASI), body surface area (BSA), and Dermatology Life Quality Index (DLQI). The secondary outcome measures included time to relapse, time to onset, rebound rate, PASI score, pruritus scores on the Visual Analog Scale (VAS), BSA, DLQI and SF-36 (short form health survey), and incidence of serious adverse events (SAEs).
Starting date **Contact Information** **Notes**	15 April 2013

IMPPS

Study name	"Oral granulated chinese herbal medicine (yxbcm01) plus topical calcipotriol for psoriasis vulgaris: Study protocol for a double-blind, randomised placebocontrolled trial" Methods a pilot randomised, placebo controlled, double-blinded trial.
Participants	Thirty participants with psoriasis vulgaris and Psoriasis Area Severity Index (PASI) scores >/= 7 and </= 12 will be included
Outcomes	Interventions Participants will be randomised (in a 1:1 ratio) to receive oral granulated Tradional Chinese Herbal Medicine YXBCM01 plus topical calcipotriol 0.005% or oral YXBCM01 placebo plus topical calcipotriol 0.005% treatment for 12 weeks, with a 12-week follow-up phase.

SRCTN01714240

Study name	Randomised controlled trial of a web-based cognitive behavioural intervention for Psoriasis Methods Single centre randomised interventional treatment trial
Participants	Male and female, lower age limit of 16 years. Planned sample size: 120
Interventions	Cognitive behaviour therapy (CBT) in a web-based format. This method allows participants to complete the study in privacy, at their own convenience and makes the treatment more broadly accessible.
Outcomes	Primary outcome measures: Subjective reports of self efficacy Secondary outcome measures: 1. Change in illness beliefs 2. Improved quality of life 3. Reduced alcohol consumption

Starting date **Contact Information** **Notes**	01/04/2009 Contact information Prof Chris Griffiths. Hope Hospital. Stott Lane. Salford. M6 8HD. United Kingdom Notes Psoriasis is a chronic inflammatory skin disease affecting approximately 2-3% of the population. The condition is incurable at this stage and the course is recurrent, with periods of remission. It is believed to be a genetic disease, with the genetic tendency thought to be triggered by various environmental factors including infection, skin trauma, certain medications and stress. Previous research has shown that psoriasis patients have a high incidence of psychological distress, with studies reporting psychological disturbance in the order of 30 - 40% of patients. Psychological distress reported by psoriasis patients includes increased levels of anxiety, depression, excessive worry, reduced quality of life and impaired everyday functioning. Overall, psoriasis patients report more psychological distress than any other dermatology group.

NCT01077882

Study name	"Oral psori-cm01, a chinese herbal formula, plus topical sequential therapy for moderate-to-severe psoriasis vulgaris: Pilot study for a double-blind, randomised, placebo-controlled trial."
Participants	RCT (Large-scale randomized control trial)
Interventions	Eligible patients with psoriasis vulgaris (PV) were enrolled into a randomized comparison in which all subjects received topical sequential therapy Interventions PSORI-CM01 or placebo for 12 weeks.
Outcomes	The primary outcome measure was the relapse rate. Treatment response was computed from Psoriasis Area and Severity Index (PASI), body surface area (BSA), and Dermatology Life Quality Index (DLQI). The secondary outcome measures included time to relapse, time to onset, rebound rate, PASI score, pruritus scores on the Visual Analog Scale (VAS), BSA, DLQI and SF-36 (short form health survey), and incidence of serious adverse events (SAEs).
Starting date **Contact Information**	January 2010 Jo Lambert, MD, PhD. University Hospital, Ghent. Belgium Notes 'OnderHUIDs' is an educational program (Department of Dermatology, University Hospital, Gent) for patients with psoriasis and atopic dermatitis. We want to stimulate the patient to actively participate in their therapeutic approach by enhanced self care. We call the hypothesis that this program will help the patients learn to cope with their disease and to be loyal to their treatment, which will result in a better quality of life, better clinical outcome and cost effectiveness.

NCT01162252

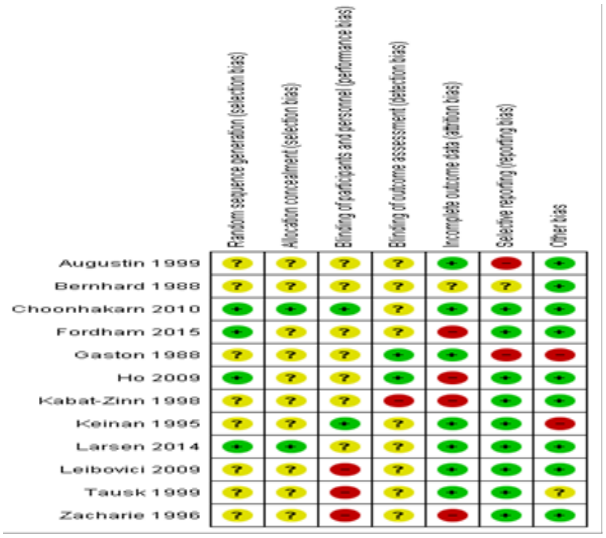
Study name	Improving Psoriasis Through Health and Well-Being Methods Allocation: Randomised, Endpoint Classification: Efficacy Study, Intervention Model: Parallel Assignment, Masking: Single Blind (Outcomes Assessor). Primary Purpose: Treatment.
Participants	It was not reported.
Interventions	The purpose of the study is to examine and compare the effects of the Mindfulness-Based Stress Reduction (MBSR) program and the Living Well (LW) program on adults with psoriasis in terms of how these programs may affect their psoriasis, immune function, physical and emotional health, and well-being.
Outcomes	it was not reported.
Starting date **Contact Information**	March 2010 Jan A Moynihan, PhD University of Rochester Notes The study examines the effects of two eight-week programs (MBSR vs. LW) for disease processes in patients with psoriasis severity reporting moderate or higher perceived stress. The research will focus both on clinical measures of the disease state and overall well-being. The Aims of our proposed intervention study are the following: 1. To examine the effects of MBSR, versus the Living Well (LW) program, on (a) disease severity, immunological markers of inflammation, and keratinocyte proliferation, (b) psoriasis-related stress and perceived stress in general, and (c) anxiety and depression. 2. To examine whether treatment effects of either program are moderated by personality traits, mindfulness, and age. 3. To examine the effects of behavioral and psychological mediators on immune outcomes.

NCT01162252

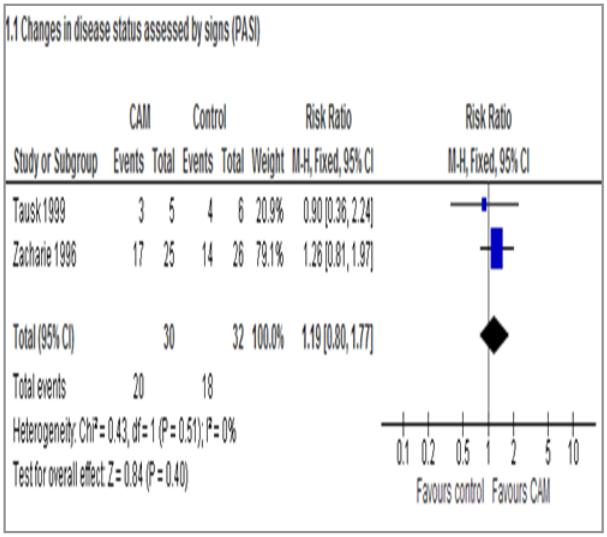
Study name	Tailored cognitive-behavioral E-health care in patients with psoriasis.
Methods	RCT.
Participants	it was not reported.
Interventions	modality CBT

Outcomes	The primary outcome is the impact of psoriasis on daily life, including its impact on physical and psychological functioning and daily activities at post-treatment and follow up measurement at 12 months. Measures: 1. Impact on daily life: Composite scores of: A. Itch (IHDL, Evers et al., 2007); B. Fatigue (CIS, Vercoulen et al., 1994). 2. Impact on psychological functioning: Composite scores of: A. Negative mood (IHDL, Evers et al., 2007); B. Anxiety (IHDL, Evers et al., 2007); C. Depression (BDI, Beck et al., 1988). 3. Impact on daily activities: A. Role limitations due to emotional and physical health problems (SF-36, Ware et al., 1993). Secondary outcomes include effects on disease severity as well as compliance with regular care and health care use.
Starting **Contact information** **Notes**	date 1-jun-2010 Prof. Dr. A.W.M. Evers.Radboud University Medical Center Nijmegen For the treatment group, assessments take place before and after treatment (ca. 6 months later) and at the follow-up measurement 12 months after pre-treatment. For the control group, assessments take place at 0, 6, and 12 months.

(Monson & Monson 2019)[2]



(Monson & Monson 2019). Risks of Bias Table



(Monson & Monson 2019) Meta-analysis of Mind/Body Practices

Discussion

Due to the fact that inflammatory dermatoses (ID) have several denominators in common, and Psoriasis is the most studied morbid entity in this category, it means that in practice, it is possible to use the Principles of Sensitivity and Specificity of Evidence-Based Health (EBS) and design them for application to Hidradenitis Suppurativa (HS).

Thus, the practical results obtained on Complementary Therapies for the management of Psoriasis may present a satisfactory degree of reproducibility for the therapeutic management of (HS).

Among the most important systemic implications that can result in high levels of emotional distress and low levels of mental health is the neglect of personal care in general. In particular those related to oral hygiene, leading to a severe condition of oral dysbiosis (Monson 2016 a; Monson 2016 b; Monson 2018), which appear to be related to unpredictable and unfavorable dermatological outcomes seen in psoriasis.

For the Mind/Body Practices category of Complementary Therapies, despite the high level of heterogeneity among the selected studies, we found that the implementation of new therapeutic approaches in association with conventional procedures to reduce levels of suffering in psoriasis is important, considering the impact of illness in mental health patients. We believe that further studies are needed to evaluate the effects and safety of complementary medicine, considering the impact of observer-reported outcomes and patient-reported outcomes. Among the various forms of intervention, this review found that there is evidence applicable to Mind/Body Interventions related to motivational interventions due to the possibility of adjusting the intervention in a wide range of variability to the cultural and ethnic aspects that make its feasibility possible, although details important information about the reproducibility of the technique were not provided by the authors.

Meditation intervention is also available but requires training that may pose some difficulties, especially for Western cultures. According to Neuroscience studies, Hypnosis is the intervention that requires a more careful approach to make clinical procedures safer, due to knowledge of the Neurophysiology of Emotions, and the complex intra-thecal circuits involved, therefore requires additional care.

Despite the low quality of evidence measured in the present study, the motivational component for “lifestyle changes” still implicitly associated with Mind/Body Practices approaches may be a useful tool for professionals treating these patients. According to some of the studies included in the Mind/Body Practices categories, the patient's motivational component, as long as it is properly conducted, can result in beneficial strategies such as obtaining participatory responses from the patient in conventional therapeutic processes, making them more efficient and safe , such as guidelines aimed at self-care, for instance, the instructions for adequate tooth brushing to control dental biofilm in conditions of dysbiosis and the handling of dressings directly on (HS) injuries (Monson 2019).

Final Considerations

Implications for Practice

Although the intrinsic mechanisms of action of Complementary Therapies in the Mind/Body Practices modality are not fully understood, improving mental health can help, as when added to conventional treatments, the results were acceptable (NCCIH 2017; Tierney Jr 2007) Complementary and Integrative Therapies in the Mind/Body Practice modality have proven to be effective, efficient and safe for such restructuring, contributing both to increasing the interval between crises and reducing the dose of continuous use medications used in different scenarios clinicians Thus, the perception of a certain clinical expertise as a complementary therapeutic resource is, above all, a refinement of scientific reasoning, and increases the degree of assertiveness of different interventions with greater potential for generating more favorable primary and secondary clinical outcomes than when these assumptions are not respected [137, 2]. These resources are not a panacea, and work satisfactorily in various clinical scenarios, not only in Dermatology, and are particularly beneficial in managing conditions, in the sense of contributing to increasing the interval between crises, as well as reducing maintenance doses in general, in addition to contributing to the motivational aspect of self-care, improving patients' mental health, well-being and quality of life [3].

Implications for Research

As implications for research, studies of better methodological quality are suggested, such as randomized clinical trials [138-186].

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