ORIGINAL ARTICLE

Assessing Quality of Reporting of Herbal Dermatology Trials from the Philippines using the hCONSORT Checklist: a Systematic Review

Rowena Natividad S. Flores-Genuino,[1,2] Maria Christina Filomena R. Batac[3] and Kyle Mica D. Talens[4]

[1]*Department of Anatomy, College of Medicine, University of the Philippines Manila, Manila, Philippines*
[2]*Department of Dermatology, Makati Medical Center, Makati, Philippines*
[3]*Section of Dermatology, Department of Medicine, College of Medicine and Philippine General Hospital, University of the Philippines Manila, Manila, Philippines*
[4]*Quezon City, Philippines*

ABSTRACT

Background. Herbal medicine is a growing and innovative field in Philippine dermatology. There is a need to assess the quality of reporting of published herbal randomized controlled trials (RCTs) in dermatology since these will serve to guide rational development and use of medicinal plants in the Philippines.

Objective. The study aimed to assess the quality of reporting of published herbal RCTs in dermatology from the Philippines based on the hCONSORT checklist.

Methods. We searched MEDLINE, CENTRAL, HERDIN (from inception to 20 September 2018), and other secondary sources for published randomized controlled trials that used any herbal preparation as intervention for the treatment or prevention of a dermatologic disease or for maintenance of healthy skin, hair, or nails. We determined the percentage of reported items based from the hCONSORT checklist.

Results. We included 41 trials, majority of which were on infections, infestations, and bites (66%). The three most common families of herbs used were Fabaceae/Leguminosae (22%) (*Gliricidia sepium* (Jacq.) Walp. [kakawati]; *Senna alata* (L.) Roxb. / *Cassia alata* (L.) [akapulko]); Arecaceae (12%) (*Cocos nucifera* L. [coconut]); and Myrtaceae (12%) (*Eucalyptus* sp [eucalyptus], *Psidium guajava* L.[guava], and *Melaleuca alternifolia* (Maiden & Betche) Cheel [tea tree]). Most of the trials (27/41, 66%) were conducted in accredited dermatology training programs of the Philippine Dermatological Society. Only 11 trials (27%) were published in PubMED-indexed journals. More than half of articles were published after the CONSORT publication in 2006 (59%). The mean percentage of reported hCONSORT checklist items in included studies was 39.6% (SD 9.9), with only seven studies reporting more than 50% of the hCONSORT checklist items.

Conclusion. Published herbal RCTs in dermatology from the Philippines are poorly reported based on the hCONSORT checklist. There is a need for dissemination of the hCONSORT to local researchers and journal editors to ensure thorough and quality reporting.

Key Words: randomized clinical trials, herbal, botanical, plant-based, CONSORT, hCONSORT, quality of reporting, systematic review

INTRODUCTION

Herbal medicines are widely used in the Philippines, being a tropical country with diverse flora. In 1997, the Philippine government enacted Republic Act 8423 to accelerate the development of traditional and alternative health care in the Philippines.[1] To integrate herbal medicine into the national health care delivery system, the Philippine Department of Health recommended ten medicinal plants for local use, including *Senna alata* (L.) Roxb. (akapulko)

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Corresponding author: Rowena Natividad S. Flores-Genuino, MD, MSc
Department of Anatomy
College of Medicine
University of the Philippines Manila
547 Pedro Gil St., Ermita, Manila 1000, Philippines
Email: rfgenuino@post.upm.edu.ph

lotion for tinea versicolor. However, there was limited local marketing of akapulko lotion in the 1990s.[2]

In a content analysis of herbal research studies published in the Journal of the Philippine Dermatological Society (JPDS), RCTs were the most common study design (18/27), with infestations, infections, and bites as the most commonly studied conditions (18/27), and *Citrus microcarpa* Bunge (kalamansi) and *Cocos nucifera* L.(coconut) (3/27 each) as the most commonly studied medicinal plants. Majority of studies were published between 2002 to 2011.[3]

Randomized controlled trials (RCTs) are clinical trials that involve at least one test treatment and one control treatment, in which the treatments to be administered are selected through a random process.[4] Considered the gold standard for ascertaining the efficacy and safety of an intervention, they are crucial to the practice of evidence-based medicine. Standardization of reporting of findings in RCTs by authors is essential to ensure complete and transparent reporting, and aid their critical appraisal and interpretation. Reporting guidelines serve as a checklist to remind researchers what information to include in the manuscript, and as a tool for peer reviewers to check the completeness of information in the manuscript. Good reporting leads to efficient use of available evidence for potential users such as systematic reviewers, clinical guidelines developers, clinicians, and sometimes patients. The EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network was launched in 2008 as a global initiative that "seeks to improve the reliability and value of published health research literature by promoting transparent and accurate reporting and wider use of robust reporting guidelines." Currently, there are 408 reporting guidelines in the EQUATOR database, 18 of which are meant to guide parallel group randomized trials.[5]

The CONSORT 2006 Statement Extension for Herbal Interventions is a list of evidence-based recommendations for reporting randomized trials that are specific for herbal intervention trials.[6] Details of the herbal preparations are necessary since crude herbal products may differ according to geographic location and climate where they were grown, as well as the time of year when they were harvested. Aside from different extraction and processing methods between manufacturers, there may also be variations from batch to batch within the same manufacturer. Even if the main herbal ingredient is standardized, there are other ingredients that may vary between products.

Three systematic reviews on the quality of reporting of herbal RCTs showed varying compliance with the hCONSORT. A 2011 systematic review randomly selected 100 English language RCTs (Medical Literature Analysis and Retrieval System Online, Excerpta Medica Database, and Academy of Microscope Enhanced Dentistry; up to December 2007) that used 11 commonly used herbal medicine interventions. It showed that, on average, only 38% of the information suggested in the checklist was reported in the trials.[7] Similarly, a 2018 systematic review on published RCTs (EMBASE, MEDLINE, and CENTRAL, 2009-2014) of herbal interventions for three common dermatoses (acne, atopic dermatitis, and psoriasis), showed that majority (22/26) of reviewed studies reported less than 50% of the recommended hCONSORT criteria.[8] On the other hand, a 2015 systematic review of published herbal RCTs from ASEAN Plus Six Countries (PubMed, EMBASE, The Cochrane Library, and Allied and Complementary Medicine (AMED), up to October 2013) on 20 top herbal species listed in the National Essential List of Medicines of Thailand showed that 15/22 hCONSORT checklist items were reported by more than 80% of studies.[9]

Previous studies showed that variables such as type of journal, year of publication, and type of herb improved reporting quality. Peer-reviewed journal articles had significantly higher mean (SD) quality scores (0.94 [0.09] for systematic reviews and 0.30 [0.19] for nonsystematic reviews) compared with throwaway journal articles (0.23 [0.03], F2,391=280.8, P<.001).[10] In a review of 211 RCTs published in four major journals (BMJ, JAMA, The Lancet, and NEJM), the number of CONSORT checklist items in reports of RCTs increased in all 4 journals in 1998, compared to 1994, and this increase was statistically significant for the 3 adopter journals (pre-CONSORT 1996, 23.4; mean change, 3.7; 95% confidence interval [CI], 2.1-5.3).[11] The 2011 systematic review of herbal RCTs also showed better overall reporting in trials published in more recent years (P=0.02) and those that used the herb, North American ginseng (P=0.018). A 2018 systematic review shows that herbal RCTs for the treatment of acne were more likely to report a higher number of the unique hCONSORT criteria (score=4.9) than those treating eczema (score, 3) or psoriasis (score, 2.9), although this was not statistically significant.[12] Institutions that have dermatology training programs accredited by the Philippine Dermatological Society undergo regular research training and join research competitions, which may theoretically result in better quality of research reporting compared to non-accredited institutions.

There is a need to assess the quality of reporting of herbal dermatological RCTs in the Philippines to accurately determine the validity and reliability of data. Well-reported herbal RCTs will serve as a reliable source of evidence for continued traditional use and possibly, commercial production of herbal medicines.

OBJECTIVE

The study aimed to determine the quality of reporting of published herbal RCTs in dermatology in the Philippines.

Specific objectives

The specific objectives were to determine the mean reporting percentage of studies with the hCONSORT checklist and to determine the percentage of studies that reported each hCONSORT checklist item.

METHODS

We structured this report according to the Preferred Reporting Items in Systematic Reviews and Meta-analysis (PRISMA 2009) checklist.[13]

Study protocol

The study protocol of this review is available upon request from the authors. It was registered with the University of the Philippines Research Grants Administration Office (RGAO-2018-0520) and the University of the Philippines College of Medicine Research Implementation and Development Office (GCS BS(Ana) 2018-001 (R-051TE)), prior to starting this review.

Criteria for considering studies

We planned to include studies that fulfilled the following criteria according to the type of participants, intervention, comparator, outcome, and study design:

1. Participants - any dermatological disease (for therapeutic trials) or normal dermatological condition (for disease prevention trials)
2. Intervention - any herbal medicine defined to include herbs, herbal materials, herbal preparations, and finished herbal products that contain as active ingredients parts of plants, or other plant materials, or combinations used for medicinal purposes and taken by ingestion, injection, or applied topically. In accordance with the definition of herbal medicine in hCONSORT, we excluded trials that used single compounds derived from plants or compounds based on specific constituents of plants.[14] This is because most of the items asked in Item 4 (i.e., precise details of the interventions intended for each group and how and when they were actually administered) would not be applicable to the latter group of herbal products that are prepared from pure compounds obtained from manufacturers. Thus, trialists would not have had to perform the various steps needed to process raw plant material into the herbal product.
3. Comparator – any comparator
4. Outcome – any outcome
5. Study design – randomized controlled trials that were published as full reports and not just conference abstracts, and in any language.

Searching for eligible studies

We searched all published articles indexed in MEDLINE and CENTRAL (from inception to July 2018) using keywords 'Philippines' and 'dermatology OR skin OR cutaneous', and HERDIN (from inception to July 2018) using scientific names and common names of common herbs used in the Philippines (Appendix 2). Search strategy for PubMED is in Appendix 1. We also hand searched the table of contents of available issues (from inception up to 2017) of the Journal of the Philippine Dermatological Society (JPDS), Philippine Journal of Pediatrics (PJP), and Pediatric Infectious Disease Society of the Philippines Journal (PIDSPJ), the reference lists of included and excluded studies, and contacted known authors in the field.

Study selection

Two reviewers (RNFG and MCFB) independently screened the titles and abstracts of records and read the full texts of potentially relevant studies. We applied the eligibility criteria and only included studies that fulfilled all inclusion criteria.

Data collection

The following data items were collected using a data collection form:

1. General data: journal citation, professional status and institutional affiliation of main author, ethical approval, study funding, duration of study
2. Participants: setting, location, participants, disease, total number randomized
3. Herbal interventions: common name/binomial name/family name, part of plant, type of preparation, mode of delivery

Reporting of hCONSORT 2006 checklist items

The hCONSORT checklist contains 22 main items, but since some items had several aspects, we assessed them separately, and came up with 79 discrete study items for this review. Reporting was assessed as either 'yes', 'no', 'maybe' or 'not applicable' for each study item. We only considered a study to have fully reported an item if the assessment was 'yes'. Compliance was measured as the number of hCONSORT items that the study reported divided by the number of hCONSORT items (maximum possible number, 79). If the assessment to a study item was 'not applicable', this item was removed from the denominator for the number of items.

Pretesting of the data collection form was performed by extracting data from the first three reports retrieved and revising the form accordingly. Two sets of reviewers (RNFG and MCFB; RNFG and KMDL) independently extracted data and any disagreement was discussed to reach a consensus.

Summary measures

The primary outcome was defined as the mean reporting by included studies of the 79-item hCONSORT checklist. The secondary outcome was defined as the percentage of studies that reported each 79 study items.

Synthesis of results

A qualitative analysis was performed and we summarized results in a table by grouping the studies by several variables (e.g. disease, type of herb).

Risk of bias of studies

We did not assess risk of bias of included studies since we aimed to analyze how well the RCTs were reported and not how well they were conducted.

Data analysis

Ordinal data were summarized with descriptive statistics using frequency and percentage distribution with Microsoft Excel [2016]. We also performed a quantitative analysis for the percentage of hCONSORT checklist items reported. We did post-hoc subgroup analysis according to institutional affiliation (whether an accredited dermatology training program by the Philippine Dermatological Society, PDS), indexing status (PubMED) of journal where published, year of publication (whether pre- or post-CONSORT 2006), type of herb, and type of disease using one-way ANOVA calculators.[15,16] Our hypothesis was that papers published by PDS-accredited institutions, in PubMED-indexed journals and those published after CONSORT came out in 2006 will be more well-reported. We also hypothesized that *Senna alata* (akapulko) and *Cocos nucifera* (coconut oil), the most common types of herb used in the trials, would have better reporting quality.

RESULTS

Study selection

The search yielded 134 records. After eliminating duplicate titles and screening for title and abstract relevance according to our predetermined eligibility criteria, 55 potentially relevant articles were retrieved. Upon full-text review, we excluded 13 reports that failed to meet the inclusion criteria (single compound,[17–19] quasi-randomized,[20–24] controlled,[25,26] single-arm trials,[27] or non-herbal[28,29]) and one report awaiting classification,[30] resulting in 41 studies that met the criteria for inclusion in this review (Figure 1).

Study characteristics

The details of each included study are in Appendix 3, and are summarized in Table 1. Majority of the studies were on infections, infestations, and bites (27/41, 66%), specifically scabies, dermatophytosis, and head lice. The most common families of herbs used were *Fabaceae/Leguminosae* (kakawati, akapulko) (9/41, 22%), Arecaceae (coconut), *Myrtaceae* (eucalyptus, guava, tea tree) and Lamiaceae (lavender, lemon balm, peppermint, rosemary) (6/41, 12% each). All herbal products were applied topically and around one-fourth were cream preparations (10/41, 24%). Sample size in the trials ranged from 19 to 272 (mean, 76.9), with the greatest percentage (39%) of trials having between 50 and 150 participants. Ethical approval was stated in around half of studies (20/41, 49%) while source of funding was only reported in six studies. Government institutions funded five studies, while a private institution funded one study. Two manufacturing companies provided the herbal products

Table 1. Summary of characteristics of included studies

Category	No (%)
Disease	
Infections/Infestations/Bites	**27 (66)**
Fungal skin infections (Dermatophytoses, Tinea versicolor)	8 (20)
Scabies	7 (17)
Head lice	5 (12)
Viral warts	3 (7)
Bacterial skin infections	2 (5)
Others - Molluscum contagiosum, Mosquito bites (1 each)	2 (5)
Inflammatory/eczemas	**8 (20)**
Acne vulgaris	3 (7)
Atopic dermatitis	2 (5)
Xerosis	2 (5)
Seborrheic dermatitis	1 (2)
Pigmentary	**3 (7)**
Melasma	3 (7)
Misc - Basal cell carcinoma, Surgical wounds, Topical anesthesia (1 each)	**3 (7)**
Type of herb/Family	
Fabaceae	**9 (22)**
Akapulko	6 (15)
Kakawati	3 (7)
Arecaceae (Coconut)	**6 (15)**
Myrtaceae	**6 (15)**
Eucalyptus	2 (5)
Guava	2 (5)
Tea tree	2 (5)
Asteraceae	**3 (7)**
Sunflower	2 (5)
Yarrow	1 (2)
Lamiaceae	**6 (15)**
Lavender	2 (5)
Rosemary	2 (5)
Others - Lemon balm, peppermint (1 each)	2 (5)
Menispermaceae (Makabuhay)	**3 (7)**
Rosaceae	2 (5)
Apple	1 (2)
Lady's mantle	1 (2)
Solanaceae	**2 (5)**
Siling haba	1 (2)
Siling labuyo	1 (2)
Theaceae (Green tea)	**2 (5)**
Moringaceae (Malunggay)	**2 (5)**
Caricaceae (Papaya)	**2 (5)**
Others	9 (22)
Aloe (Asphodelaceae), cashew (Anacardiaceae), citronella (Cardiopteridaceae), ginger (Zingiberaceae), lemongrass (Poaceae), mallow (Malvaceae), mulberry (Moraceae), primrose (Primulaceae), western dock (Polygonaceae)	1 each

Professional status of main author	
Resident trainee	24 (59)
Consultant/Practitioner	6 (15)
Medical student	3 (7)
Not stated	8 (20)
Specialization of main author	
Dermatology	26 (63)
Pediatrics	7 (17)
Medical student	3 (7)
Family/Preventive Medicine	3 (7)
Obstetrics-Gynecology	1 (2)
Pharmacy	1 (2)
Institutional affiliation of main author	
PDS-accredited	**27 (66)**
UERMMMC Department of Dermatology	5 (12)
JRRMMC Dept. of Dermatology	3 (7)
MMC Dept. of Dermatology	3 (7)
RITM Dept. of Dermatology	3 (7)
SCFI	3 (7)
STUH Dept. of Dermatology	3 (7)
UP-PGH Section of Dermatology	3 (7)
OMMC Dept. of Dermatology	2 (5)
Others – DMC, EAMC (1 each)	2 (5)
Non-PDS-accredited	**14 (34)**
UERM College of Medicine	2 (5)
DLSU Med Center Family Medicine	2 (5)
Others – ADZU College of Medicine, DLS-STI Dept. of Ob-Gyne, IMH, MPI-MCP Dept. of Pediatrics, OMMC Dept. of Pediatrics, SLMC Dept. of Pediatrics, UERMMMC Dept. of Preventive and Community Med, UST Pharmacy, VMMC Dept. of Pediatrics, Not stated (1 each)	10 (24)

Journal of publication	
Indexed	**11 (27)**
Acta Med Philipp	2 (5)
Dermatitis	2 (5)
Int J Dermatol	2 (5)
J Phil Med Assoc	2 (5)
Others - J Drugs Derm, J Pharmacol Pharmacother, Phil J Ob Gyn (1 each)	3 (7)
Non-indexed	**30 (73)**
J Phil Dermatol Soc	15 (37)
Phil J Ped	4 (10)
UERMMMC JHS	4 (10)
Fil Fam Phy	2 (5)
J Phil Soc Cut Med	2 (5)
Ped Infect Dis Soc Phil J	2 (5)
Phil J Microbiol Infect Dis	1 (2)
Year of publication	
Pre-CONSORT 2006	17 (41)
1980s	1 (2)
1990s	2 (5)
2000s	14 (34)
Post-CONSORT 2006	**24 (59)**
2000s	3 (7)
2010s	21(51)
Sample size	
>150	10 (24)
50-150	16 (39)
<50	15 (37)

Legend: PDS Philippine Dermatological Society; UERMMMC University of the East-Ramon Magsaysay Memorial Medical Center; STUH Santo Tomas University Hospital; JRRMMC Jose R. Reyes Memorial Medical Center; MMC Makati Medical Center; OMMC Ospital ng Maynila Medical Center; RITM Research Institute for Tropical Medicine; SCFI Skin and Cancer Foundation, Inc; UP-PGH University of the Philippines-Philippine General Hospital; DLSU De La Salle University; ADZU Ateneo de Zamboanga University; DLS De los Santos; DMC Davao Medical Center; EAMC East Avenue Medical Center; IMH Iloilo Mission Hospital; MPI-MCP Medical Center Paranaque; SLMC St. Luke's Medical Center; VMMC Veterans Memorial Medical Center

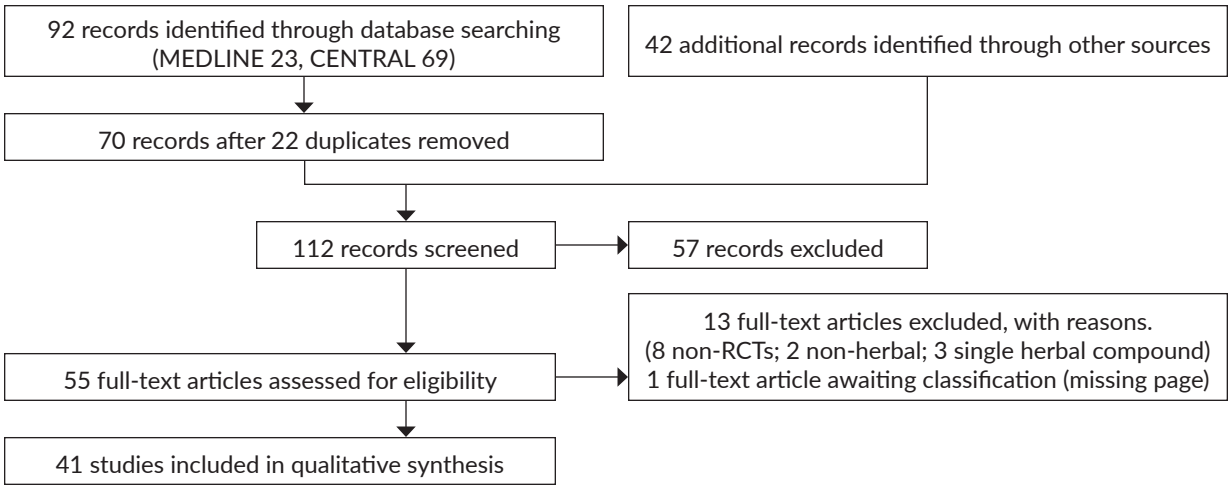

Figure 1. Study flow diagram.

in two studies. Resident trainees were the main authors in majority of trials (24/41, 57%), and belonged mostly to dermatology departments in institutions accredited by the Philippine Dermatological Society (27/41, 66%). The top two institutions where the trials were conducted were the University of the East-Ramon Magsaysay Memorial Medical Center (8/41, 20%) and Santo Tomas University Hospital (12%). The trials were published in 14 journals, four of which were international publications, and eleven of which were PubMED-indexed. The most common journals where the studies were published were the Journal of the Philippine Dermatological Society (37%), Philippine Journal of Pediatrics (10%), and UERM Health Sciences Journal (10%), which are local publications. The articles were published from 1983-2017, with a little over half (24/41, 59%) after 2006, the year when hCONSORT was published.

Percentage reporting of hCONSORT item of individual studies

The mean percentage of reported hCONSORT checklist items was 39.6% (SD 9.9; range 20.9, 60.0) and only a few studies (7/41, 17%) reported at least 50% of the hCONSORT checklist items (Table 2).

At least 50% of studies reported 31/79 items, including identification of trial as randomized (1a) (95.1%) and the type of preparation (1d) (95.1%), in the title and abstract, and eligibility criteria (3a) (95.1%) in the Methods section. Scientific background (2a) (85.4%), rationale (2b) (80.5%), including reasons with reference to herbal product (2c) (90.2%), settings (3b) (87.8%), common name of plant (4aiii) (80.5%), appropriateness of outcome measures (6e) (87.8%), and statistical methods (12a) (85.4%) also scored high for reporting (Table 3).

In describing the herbal interventions in the Methods section (items 4a to 4f), none of the studies provided complete details for the following: herbal medicinal product name, characteristics of the herbal product, dosage and quantitative description and qualitative testing. Specifically, no study reported on the family name of the plant, only one study reported on the status of registration with the Philippine Food and Drug Authority (Evangelista 2014), and method of authentication by a botanist from the Philippine Bureau of Plant Industry (Castillo 2013). In the latter study, the author also stated the specific geographic location (Angat, Bulacan) where the *Tinospora cordifolia* plant was sourced; the only author to report such. In addition, there was also poor reporting of type of extract (e.g. aqueous, alcoholic) (22%), and part of plant used (37%). On the other hand, specific herbal intervention details that were reported by more than 50% of studies aside from common name of plant (81%) were: name of manufacturer (51%), and type of product used (56%). Majority of studies reported on the dosage (76%) and duration (78%) of administration but none on how dose and duration of treatment were determined (Table 3).

Table 2. Percentage distribution of reporting hCONSORT checklist (expanded 79-item)

Study ID	Reported items No. (%)
1. Abdujarak 2017[31]	19 (27.5)**
2. Agero 2004[33]	28 (38.4)‡
3. Aguilar 2004[35]	24 (34.8)**
4. Alayon 2002[37]	32 (46.4)**
5. Alvin 2011[39]	36 (50.7)****
6. Ancheta 2004[41]	23 (31.5)‡
7. Bañez 1999[43]	27 (38.0)****
8. Banzon 2008[45]	31 (43.1)†
9. Buensalido 2011[47]	31 (43.7)****
10. Cabillos 2003[49]	27 (38.0)****
11. Castillo 2013[51]	33 (45.8)†
12. Concepcion 1999[53]	23 (33.3)**
13. Cue 2010[55]	28 (39.4)****
14. De Las Alas 2014[57]	39 (52.7)§
15. De Leon-Godinez 2011[59]	23 (31.9)†
16. De Leon-Pandanan 2002[61]	23 (33.3)**
17. Despuig 2016[63]	22 (31.4)***
18. Dizon 2013[65]	45/75 (60.0)¶
19. Dofitas 2001[67]	43 (59.7)†
20. Dumlao 2002[68]	18 (25.0)†
21. Evangelista 2014[70]	36 (48.6)§
22. Francisco-Diaz 2004[32]	22 (31.4)***
23. Gan 2003[34]	25 (36.2)**
24. Guillano 2005[36]	37 (51.4)†
25. Hau 2008[38]	32 (45.1)†
26. Lagunzad 2013[40]	30 (41.1)‡
27. Lisdyanti 2011[42]	23 (31.9)†
28. Lombos 2015[44]	21 (30.0)***
29. Martinez 2014[46]	29 (40.8)‡
30. Mendoza 2014[48]	15 (21.4)***
31. Moreno 2016[50]	28 (39.4)****
32. Naagas 2013[52]	36 (51.4)***
33. Ong-Salvador 2000[54]	24 (33.3)†
34. Perez-Chua 2012[56]	29 (40.8)****
35. Ramiro 2014[58]	30 (41.7)†
36. Rivera 1983[60]	14 (20.9)*
37. Sayo-Bondoc 2016[62]	38 (54.3)***
38. Tavanlar-Amado 2014[64]	42 (57.5)‡
39. Uy 2003[66]	27 (38.6)***
40. Verallo-Rowell 2008	25 (34.7)†
41. Yoro 2005[69]	19 (27.1)***
Mean (SD)	39.6 (9.9)

Note: Denominator is less than 79 due to non-inclusion of items not applicable to the study
n=67,n=69,***n=70,****n=71,†n=72,‡n=73,§n=74,¶n=75*
In bold font are studies with more than 50% reported checklist items

Table 3. Percentage distribution of studies (N=41) that reported individual hCONSORT 2006 checklist items

Checklist item / Description	No. (%)
1. Title and abstract	
1.a. How participants were allocated to interventions (e.g. "random allocation, "randomized" or "randomly assigned"	39 (95.1)
1.b. Either the title or abstract, or both should state the herbal medicinal product's Latin binomial	25 (61.0)
1.c. the part of the plant used	7 (17.1)
1.d. and the type of preparation	39 (95.1)
2. Introduction	
Background	
2.a. Scientific background	35 (85.4)
2.b. and explanation of rationale	33 (80.5)
2.c. Including a brief statement of reasons for the trial with reference to the specific herbal medicinal product being tested and…	37 (90.2)
2.d. If applicable, whether new or traditional indications are being investigated.	12 (29.3)
3. Methods/Participants	
3.a. Eligibility criteria for participants	39 (95.1)
3.b. Settings and…	36 (87.8)
3.c. locations where the data were collected	32 (78.0)
3.d. If a traditional indication is being tested, a description of how the traditional theories and concepts were maintained. For example, participant inclusion criteria should reflect the theories and concepts underlying the traditional indication.	9 (22.0)
4. Methods/Interventions	
4.a. *Herbal medicinal product name*	
4.a.i. The Latin binomial name together with botanical authority	9 (22.0)
4.a.ii. and family name for each herbal ingredient;	0
4.a.iii. common name(s) should also be included	33 (80.5)
4.a.iv. The propriety product name (i.e. brand name) or the extract name (e.g. Egb-761)	8 (19.5)
4.a.v. and the name of the manufacturer of the product	21 (51.2)
4.a.vi. Whether the product used is authorized (licensed, registered) in the country in which the study was conducted	1 (2.4)
4.b. Characteristics of the herbal product	
4.b.i. The part(s) of plant used to produce the product or extract.	15 (36.6)
4.b.ii. The type of product used (e.g. raw [fresh or dry], extract)	23 (56.1)
4.b.iii. The type and concentration of extraction solvent used (e.g. 80% ethanol, 100% H2O, 90% glycerine, etc.) and the ratio of herbal drug to extract (e.g., 2 to 1)	9 (22.0)
4.b.iv. The method of authentication of raw material (i.e. how done and by whom)	1 (2.4)
4.b.v. and the lot number of the raw material	0
4.b.vi. State if a voucher specimen (i.e., retention sample) was retained and,	0
4.b.vii. if so, where it is kept or deposited, and the reference number	0
4.c. Dosage regimen and quantitative description	
4.c.i. The dosage of the product,	31 (75.6)
4.c.ii. the duration of administration and	32 (78.0)
4.c.iii. how these were determined	0
4.c.iv. The content (e.g., as weight, concentration; may be given as range where appropriate) of all quantified herbal product constituents, both native and added, per dosage unit form. Added materials, such as binders, fillers, and other excipients; e.g., 17% maltodextrin, 3% silicon dioxide per capsule, should also be listed.	12 (29.3)
4.c.v. For standardized products, the quantity of active/marker constituents per dosage unit form	0*
4.d. Qualitative testing	
4.d.i. Product's chemical fingerprint	0
4.d.ii. and methods used (equipment and chemical reference standards)	1 (2.4)
4.d.iii. and who performed the chemical analysis (e.g. the name of the laboratory used);	1 (2.4)
4.d.iv. whether a sample of the product (i.e. retention sample) was retained	0
4.d.v. and if so, where it is kept or deposited	0
4.d.vi. Description of any special testing/purity testing (e.g., heavy metal or other contaminant testing) undertaken,	2 (4.9)
4.d.vii. which unwanted components were removed and how (i.e., methods)	0
4.d.viii. and if so, where it is kept or deposited	0
4.d.ix. Standardization: what to standardize (e.g., which chemical components of the product)	0*

4.e. Placebo/control group The rationale for the type of control/placebo used	16 (39.0)
4.f. Practitioner A description of the practitioners (e.g., training and practice experience) that are part of the intervention	**1 (2.4)**
5. Objectives Specific objectives and hypotheses	**29 (70.7)**
6. Outcomes	
6.a. Completely defined pre-specified primary outcome measures	14 (34.1)
6.b. Completely defined pre-specified secondary outcome measures	14 (34.1)
6.c. including how and when they were assessed	30 (73.2)
6.d. when applicable, any methods used to enhance the quality of measurements (e.g., multiple observations, training assessors)	3 (7.3)
6.e. Outcome measures should reflect the intervention and indications tested considering, where applicable, underlying theories and concepts	36 (87.8)
7. Sample size	
7.a. How sample size was determined	21 (51.2)
7.b. When applicable, explanation of any interim analyses and stopping guidelines	4 (40.0)**
8. Randomization/Sequence generation	
8.a. Method used to generate the random allocation sequence	32 (78.0)
8.b. Type of randomization; details of any restriction (such as blocking and block size)	11 (26.8)
9. Randomization/Allocation concealment mechanism Mechanism used to implement the random allocation sequence (such as sequentially numbered containers); describing any steps taken to conceal the sequence until interventions were assigned	16 (39.0)
10. Randomization - Implementation	
10.a. Who generated the random allocation sequence,	9 (22.0)
10.b. who enrolled participants,	1 (2.4)
10.c. and who assigned participants to interventions	10 (24.4)
11. Blinding	
11.a. Whether or not participants, those administering the interventions, and those assessing the outcomes were blinded to group assignment	22 (53.7)
11.b. When relevant, how the success of blinding was evaluated	1 (2.4)
12. Statistical Methods	
12.a. Statistical methods used to compare groups for primary and secondary outcomes	35 (85.4)
12.b. Methods for additional analyses, such as subgroup analyses and adjusted analyses	4 (80.0)***
13. Results Participant flow	
13.a. For each group, the numbers of participants who were randomly assigned,	31 (75.6)
13.b. received intended treatment,	9 (22.0)
13.c. and were analyzed for the primary outcome	27 (65.9)
13.d. For each group, losses and exclusions after randomization, together with reasons	29 (70.7)
14. Recruitment Dates defining the periods of recruitment and follow up	**19 (46.3)**
15. Baseline Data	
15.a.i. A table showing baseline demographics	30 (73.2)
15.a.ii. and clinical characteristics for each group	26 (63.4)
15.a.iii. including concomitant medications,	4 (9.8)
15.a.iv. herbal, and	1 (2.4)
15.a.v. complementary medicine use	1 (2.4)
16. Numbers analyzed For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	14 (34.1)
17. Outcomes and estimation For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	15 (36.6)
18. Ancillary analyses Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	6 (75.0)****
19. Adverse events All important adverse events or side effects in each intervention group.	29 (70.7)

20. Discussion	
Interpretation	
20.a.i. Interpretation of results, taking into account study hypotheses, sources of potential bias or imprecision and the dangers associated with multiplicity of analyses and outcomes	18 (43.9)
20.a.ii Interpretation of the results in light of the product and	24 (58.5)
20.a.iii. Interpretation of the results in light of the dosage regimen used	7 (17.1)
21. Generalisability	
21.a. Generalisability (external validity, applicability) of the trial findings	3 (7.3)
21.b. Where possible, discuss how the herbal product and dosage regimen used related to what is used in self-care and/or practice.	3 (7.3)
22. Overall evidence	15 (36.6)
General interpretation of the results in the context of current evidence. Discussion of the trial results in relation to trials of other available products.	

*Legend: *n=0; **n=10; ***n=5; ****n=8 (other studies excluded since sub-item was not applicable)*

Table 4. Subgroup analysis of percentage of reported hCONSORT checklist items based on institution, journal, and year published

Study variable	Mean (SD)	F-stat	P-value*
Institution		7.37109	0.75246 (NS)
PDS-accredited	42.54 (10.04)		
Not PDS-accredited	34.41 (7.59)		
Journal		0.00003	0.999 (NS)
PubMED-indexed	39.55 (13.0)		
Not PubMED-indexed	39.57 (8.85)		
Year of publication		3.28581	0.7694 (NS)
Pre-hCONSORT 2006	36.31 (9.42)		
Post-hCONSORT 2006	41.87 (9.85)		

*PDS Philippine Dermatological Society; *Using One-way ANOVA; NS Not significant*

Table 5. Subgroup analysis of percentage distribution of reported hCONSORT checklist items based on type of herb

Type of herb	N	Mean (SD)	F-stat	Df	P-value
Akapulko	6	37.5 (9.0)	0.59	10	0.8
Coconut	6	43.3 (9.4)			
Kakawati	3	39.4 (5.9)			
Makabuhay	3	44.0 (16.2)			
Green tea	2	34.1 (1.1)			
Guava	2	46.0 (20.6)			
Lavender, rosemary, eucalyptus	2	34.6 (2.3)			
Malunggay	2	34.7 (8.6)			
Papaya	2	44.0 (6.5)			
Sili	2	35.0 (4.3)			
Tea tree	2	31.2 (15.0)			
Total	**32**				

Note: Herb group with only one study (n=9) cannot be entered into one-way ANOVA analysis

Table 6. Percentage distribution of reported hCONSORT checklist items and One-way ANOVA analysis based on disease

Disease	N	Mean (SD)	F-stat	Df	P-value
Dermatophytoses	8	41.0 (9.8)	0.78	7	0.62
Scabies	7	34.4 (9.0)			
Head lice	5	38.4 (3.9)			
Warts	3	41.5 (13.9)			
Acne	3	31.7 (4.4)			
Melasma	3	35.0 (14.8)			
Bacterial infections	2	41.0 (8.9)			
Atopic dermatitis	2	34.7 (8.6)			
Xerosis	2	44.9 (9.2)			
Total	**35**				

Note: Disease group with only one study (n=6) cannot be entered into one-way ANOVA analysis

Characteristics of the herbal medicinal products were also poorly reported with no information from any study on the following: lot number of raw material (4bii), whether voucher specimen was retained (4bvi), where it is kept, and reference number (4bvii). Qualitative testing details were also poorly reported, with only one study that reported on the method used for chemical fingerprint (4dii) (i.e. thin layer chromatography),[67] although the actual chemical fingerprint (4di) and information on a retention sample (4diii to iv) were not elaborated. The same study was also the only one which reported on purity testing methods (4dvi) for akapulko lotion (i.e. total ash content, acid-insoluble ash, foreign organic matter). However, it did not state if unwanted components were removed and how. No study reported on standardization details, and there was no information on whether the herbal interventions they tested were on standardized products.

Post-hoc subgroup analyses showed no significant difference in percentage of reported hCONSORT items between groups based on accreditation of the institution of main author as a dermatology training program of the Philippine Dermatological Society (PDS), the status of PubMED indexing of the journal or the timing of publication of the study in relation to hCONSORT 2006 publication (Table 4).

There was no significant difference between different types of herbs (F-stat=0.59; P=0.8) (Table 5), and disease (F-stat=0.78; P=0.62) (Table 6).

DISCUSSION

Our review included 41 herbal RCTs that were mostly on infestations, infections, and bites, while the 2011 systematic review of three major databases had psychology as the major topic (112/406) and only 9 on dermatology.[7] This highlights the burden of infectious diseases that is still prevalent in tropical and low-income countries such as the Philippines, compared to higher-income countries where psychological disorders are more predominant. The most commonly studied herbs in our review were akapulko and coconut (n=6 each) which were not studied in any of the previous systematic reviews. Ginkgo (n=99/406; Asean Plus Six countries only)[9] and ginger (n=36/71; no geographic restriction)[7] were the most common herbs in previous systematic reviews. This finding indicates the promising potential for akapulko and coconut in the ASEAN and global market.

Our findings suggest that the published RCTs on treatment and prevention of dermatological diseases involving herbal interventions in the Philippines poorly reported checklist items suggested by the hCONSORT guidelines. The mean reporting rate was only 39.6% (SD 9.9), and only 15% of studies in our review reported at least 50% of the hCONSORT checklist items. Our results are similar to the 2011 systematic review of 11 top selling herbal products in the USA (mean compliance, 38%),[7] and the 2018 review that included herbal products for acne, atopic dermatitis, or psoriasis (15% of studies reported less than half of hCONSORT items).[8] On the other hand, our findings contrast with the 2015 systematic review that reported more than 80% of included studies that complied to more than 50% of the items in the hCONSORT checklist.[9] Since this 2015 review included RCTs for 20 registered herbal products in Thailand, the high reporting compliance may be a reflection of the robust herbal medicine industry and integration into their national formulary. In contrast, the Philippines currently has only three herbal products (lagundi [Vitex negundo], sambong (Blumea balsamifera], tsaang gubat [Ehretia microphylla]) in the Philippine National Drug Formulary,[71] and none is indicated for skin disease.

Poor reporting of details of the herbal intervention such as the family name and binomial name in the Abstract, which are more internationally used, will make it difficult for the scientific community to recognize the herbs. Some researchers did not include these specific details for herbal interventions in the Abstract, resulting in a decreased chance for these articles to be indexed and retrieved. To facilitate access to herbal medicine literature, hCONSORT recommends the inclusion of the product's Latin binomial, part of the plant used and type of preparation in the title and abstract of the article. It is also possible that researchers failed to mention the part of the plant used because they assume it is public knowledge (e.g. coconut oil, papaya latex, etc.) or that it is not relevant to know. However, it is a factor that may change the quality of the herbal medicine and eventual efficacy and safety, and thus, is important to state explicitly.

In the Methods section, none of our included studies provided complete information on the herbal medicinal product name, characteristics of the herbal product, dosage regimen and quantitative description and qualitative testing. This information is needed to have a comprehensive knowledge on the product to allow comparison of its efficacy and safety to other products. Seventy-eight percent of the studies did not provide the Latin binomial together with the botanical authority, and none of the studies provided the family name of the plant used. Our findings are similar to the previous 2015 systematic review, where studies also did not provide botanical authority and family name, and 62% of studies did not provide the Latin binomial name.[9] Complete reporting of the herbal medicinal product name in future researches is necessary to ensure replicability of test results. An important information that was not included in hCONSORT but was reported in one included study[51] is the geographic location where the plant was harvested. Agricultural production and collection details are essential since different locations have varying climates, soil conditions, and agricultural practices (WHO 2000).[14] In particular, there were several items that were never reported (e.g., voucher specimen of raw material, product's chemical fingerprint, retention sample of product, removal of unwanted components), which is similar to the previous 2011 systematic review.[7]

None of the studies stated using a standardized herbal product, and this may be because the products used in traditional practice are not pure compounds and active constituents have not been identified. Compared to this finding, the previous systematic reviews showed that 33%[12] to 51%[7] of studies reported on standardization details. This may be explained by the more developed herbal industry in higher-income countries, and is especially relevant in resource-limited countries like the Philippines where lack of access to costly drugs may be bridged by readily available traditional medicinal plants. None of the studies provided adequate information on how herbal product dosage was derived even when pre-clinical studies were present. Dosing implications were considered only after the study was done. These are missed opportunities to have carried out well-planned protocols with efficient use of resources. In a previous systematic review, 70% of the assessed articles also did not provide the recommended information on dosing regimen and cited that even the rationale for dosing and frequency of application of topical agents such as steroids has been limited.[8]

In the Discussion, less than 5% of the studies in this review discussed generalizability of results that would have elucidated on the applicability of the study findings under different conditions. This finding contrasts with previous systematic review that showed 67% of studies reported on

generalizability, although only 14% discussed this in relation to self-care and practice.[7] This would have greatly aided in providing practical recommendations on the use of the herbal product for other groups of individuals, or another product formulation being used in practice or self-care. More than 60% of the trials did not compare their results to other trials or interpret their results in the context of current evidence. This may have been due to lack of previous clinical trials on the herbal product, especially if the trials were pilot studies. Lack of access to full reports of previous studies on the topic, especially for studies published before the digital age, may have been a limitation. Hopefully, with improved indexing specificity of future herbal intervention studies, herbal literature will be easily accessed by researchers working on the same product.

In general, the quality of most of the studies in our review could still be increased by improved reporting of items other than those specific to herbal interventions, such as clearly stating the primary and secondary outcome measures, describing the placebo used, and specifying the type of randomization.

The reporting rate of included studies did not significantly differ between groups as to type of institution, status of indexing of journal, and the year of publication. Poor reporting of hCONSORT checklist items across institutions, journals, and through the decades may be due to the: 1) lack of awareness on the existence of hCONSORT, 2) lack of training of researchers in the dermatology residency programs on the use of hCONSORT and 2) lack of enforcement of hCONSORT guidelines by research mentors and journal editors. Likewise, the type of herb and disease did not affect the quality of reporting of our included studies. This differs from a previous systematic review where RCTs that used North American ginseng showed significantly higher quality than other herbal RCTs.[7]

We only hand searched three local journals so we may have missed some other relevant RCTs in journals that we did not have direct access. All studies were on topical herbal products so that our findings are not generalizable to oral herbal products, considering the widespread intake of whitening pills. In addition, we did not assess the risk of bias in these studies, as well as the magnitude and precision of the treatment effects of the herbal interventions compared with their comparator drugs. These are also important aspects of determining quality that will provide an evidence base for rational use of herbal products.

CONCLUSION

Published herbal RCTs in dermatology from the Philippines are poorly reported according to the hCONSORT criteria. The hCONSORT guideline needs to be widely disseminated to researchers working on herbal interventions for dermatologic diseases, and compliance to the hCONSORT checklist should be required for submitted manuscripts of herbal RCTs by journal editors. These steps will ensure quality protocols, data gathering, and data presentation to enable the promotion and practice of evidence-based herbal medicine in the country.

Statement of Authorship

All authors participated in data collection and analysis, and approved the final version submitted.

Author Disclosure

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APPENDICES

Appendix 1. List of commonly used herbs for skin diseases[72]

Skin disease	Common name	Scientific name
Abscess	Bayabas or guava	*Psidium guajava* L.
	Gumamela	*Hibiscus rosa-sinensis* L.
	Kamantigi or kamantigue	*Impatiens balsamina* L.
	Kalachuchi	*Plumeria rubra* L./*Plumeria acuminata* W.T Aiton
	Pili	*Canarium ovatum* Engl.
Burns	Gumamela	*Hibiscus rosa-sinensis* L.
	Oregano	*Plectranthus amboinicus* (Lour.) Spreng.
Falling hair	Coconut	*Cocos nucifera* L.
Itching	Bayabas	*Psidium guajava* L.
	Kakawati or kakawate or madre de cacao	*Gliciridia sepium* (Jacq.) Walp.
	Kamoteng kahoy	*Manihot esculenta* Crantz
Scabies	Kakawati or kakawate or madre de cacao	*Gliciridia sepium* (Jacq.) Walp.
	Makabuhay	*Tinospora rumphii* Boerl./*Tinospora cordifolia* (Willd.) Miers
	Akapulko or akapulco or acapulco or acapulko	*Senna alata* (L.) Roxb./*Cassia alata* L
Tinea, ringworm and athlete's foot	Tanglad	*Cymbopogon citratus* (DC.) Stapf
	Bawang	*Allium sativum* L.
	Akapulko or akapulco or acapulco or acapulko	*Senna alata* (L.) Roxb./*Cassia alata* L.
Infected wounds/ skin ulcers	Bayabas or guava	*Psidium guajava* L.
	Gumamela	*Hibiscus rosa-sinensis* L.
	Kamantigi or kamantigue	*Impatiens balsamina* L.
	Kalachuchi	*Plumeria rubra* L./*Plumeria acuminata* W.T Aiton
Others [73]	Aloe	*Aloe vera* (L.) Burm.f.
	Calamansi or Kalamansi	*Citrus x microcarpa* Bunge
	Cashew	*Anacardium occidentale* L.
	Siling labuyo or siling haba or Chili or cayenne pepper	*Capsicum frutescens* L.,/*Capsicum annuum* L.
	Green tea	*Camellia sinensis* (L.) Kuntze
	Malunggay	*Moringa oleifera* Lam.
	Neem	*Azadirachta indica* A. Juss.
	Papaya	*Carica papaya* L.

Appendix 2. Search strategy for medline (PubMed)

Search	Query	Items found
#5	Search ((((dermatol*) OR cutaneous) OR skin)) AND (("randomized controlled trial"[Publication Type]) AND ((Philippine*) OR Filipin*))	23
#4	Search ("randomized controlled trial"[Publication Type]) AND ((Philippine*) OR Filipin*)	352
#3	Search ((dermatol*) OR cutaneous) OR skin	1008660
#2	Search (Philippine*) OR Filipin*	17819
#1	Search "randomized controlled trial"[Publication Type]	468918

Appendix 3. Characteristics of included studies

Study ID	Herb/Part/Preparation	Disease	Institution Of Main Author
1. Abdujarak 2017[31]	Malunggay leaf extract gel	Acne vulgaris	Ateneo de Zamboanga University – College of Medicine
2. Agero 2004[33]	Extra virgin coconut oil	Xerosis	Makati Medical Center – Dept. of Dermatology
3. Aguilar 2004[35]	Akapulko leaf extract 75% aqeous solution	Dermato-phytoses (tinea pedis)	UERM - College of Medicine
4. Alayon 2002[37]	Akapulko leaf 80% lotion	Scabies	De La Salle University Health Sciences Institute – Dept. of Family Medicine
5. Alvin 2011[39]	Mulberry (Morus alba) 75% Extract Oil	Melasma	Skin Cancer Foundation, Inc.
6. Ancheta 2004[41]	Kakawati soap and ointment	Scabies	UERM – College of Medicine
7. Bañez 1999[43]	Kakawati lotion	Scabies	UERMMMC – Dept. of Dermatology
8. Banzon 2008[45]	Siling labuyo 50% and 75% ointment	Pain	RITM – Dept. of Dermatology
9. Buensalido 2011[47]	Papaya fruit latex 1.5% cream	Dermato-phytoses (tinea corporis)	Makati Medical Center – Dept. of Dermatology
10. Cabillos 2003[49]	Green tea extract 5% cream	Molluscum contagiosum	Makati Medical Center – Dept. of Dermatology
11. Castillo 2013[51]	Makabuhay extract lotion	Scabies	UST – Pharmacy Department
12. Concepcion 1999[53]	Akapulko 50% lotion	Scabies	De La Salle University Health Sciences Institute – Dept. of Family Medicine
13. Cue 2010[55]	Lemongrass 10% oil	Dermato-phytoses (tinea corporis and cruris)	STUH – Dept. of Dermatology
14. De Las Alas 2014[57]	Virgin coconut oil	Uremic xerosis	PGH – Section of Dermatology
15. De Leon-Godinez 2011[59]	Siling haba 0.025% cream	Mosquito bites	RITM – Dept. of Dermatology
16. De Leon-Pandanan 2002[61]	Akapulko cream	Tinea versicolor	OMMC – Dept. of Dermatology
17. Despuig 2016[63]	Tea tree oil	Acne vulgaris	UERMMMC – Dept. of Preventive and Community Medicine
18. Dizon 2013[65]	Cashew nut pericarp extract cream (DeBCC)	Basal cell carcinoma	PGH – Section of Dermatology
19. Dofitas 2001[67]	Akapulko 50% lotion	Tinea versicolor	PGH – Section of Dermatology
20. Dumlao 2002[68]	Akapulko 7.5 & 15% ointment	Dermato-phytoses (tinea pedis)	UERMMMC – Dept. of Dermatology
21. Evangelista 2014[70]	Virgin coconut oil	Atopic dermatitis	JRRMMC – Dept. of Dermatology
22. Francisco-Diaz 2004[32]	Gigawhite 5% solution (Various - mallow, peppermint, primrose, lady's mantle, lemon balm, yarrow)	Melasma	Skin Cancer Foundation, Inc.
23. Gan 2003[34]	Green tea 3% extract cream	Acne vulgaris	JRRMMC – Dept. of Dermatology
24. Guillano 2005[36]	Kakawati 50% ointment	Dermato-phytosis (tinea corporis and cruris)	Davao Medical Center (DMC) – Dept. of Dermatology
25. Hau 2008[38]	Ginger rhizome powder 25 mg/g Cream	Dermato-phytosis (tinea corporis and cruris)	JRRMMC – Dept. of Dermatology
26. Lagunzad 2013[40]	Apple cider vinegar	Common warts	UERMMMC – Dept. of Dermatology

Journal Published	Sample Size	Study Setting And Study Population	Duration Of Follow-Up	Ethical Approval	Study Funding
PJP	34	School: Boniao National High School, Mahayag, Zamboanga del Sur Male high school students; age not stated	6 wks.	Y	NS
Dermatitis	34	Dermatology clinic 16-70 year old	2 wks.	Y	NS
UERM JHS	22	Community: Brgy. Damayan Lagi and Brgy. 48-B Kapiligan Age not stated	4 wks.	NS	NS
FFP	120	General clinic, Dasmariñas, Cavite Age not stated	3 days	NS	NS
JDD	50	Dermatology clinic of a charity hospital in Makati Adults	8 wks.	Y	NS
UERM JHS	49	Orphanage 3-18 years old	7 days	NS	NS
PJMID	44	Bagong Nayon II All ages	5 days	NS	NS
JPDS	85	Dermatology OPD, RITM Adults aged 18-60 years old	9 days	NS	NS
JPDS	60	NS Age not stated	6 mos.	Y	N
JPDS	69	Makati Medical Center OPD Children and young adults	NS	Y	NS
J Pharmacol Pharmacother	66	Manila Youth Reception Center, Reception Action Center and Tanglao Detention Center, Malolos, Bulacan 2-22 years old	4 wks.	Y	Y, Science Education Institute, DOST, CHED, FAPE, and the UST Grants Office, (Philippines)
FFP	100	Not stated 7-30 years old	4 wks.	NS	NS
JPDS	96	Not stated 2-70 years old	4 wks.	Y	N
Acta Medica Philippina	45	Dialysis Unit, PGH Adult patients	4 wks.	Y	Y, PDS
JPDS	75	Dermatology and Entomology Laboratory, RITM 18 to 60 years old	1 mo.	NS	N
JPSCM	150	Dermatology Clinic, OMMC Adults	4 wks.	NS	N
UERM JHS	70	Community in Brgy. Doña Imelda Children and adults	4 wks.	Y	NS
Acta Medica Philippina	19	PGH Outpatient Department, Section of Dermatology Adult patients	8 wks.	Y	Y, NIH and PCHRD. Study drugs by RCC Amazing Touch.
JPDS	129	Dermatology clinic of PGH 7-65 years old	NS	NS	Y, PCHRD
UERM JHS	43	Brgy. Bagong Silang, Cainta, Rizal and Brgy. Doña Imelda, QC Any age	2 wks.	NS	NS
IJD	117	Dermatology OPD in JRRMMC Children 1-13 years old	8 wks.	NS	NS
JPDS	28	Makati Medical Center Adults	NS	NS	NS
JPSCM	108	Tertiary hospital Age not stated	12 wks.	NS	NS
JPDS	40	DMC dermatology clinic 7-79 years old	4 wks.	NS	NS
JPDS	24	Not stated 12-70 years old	8 wks.	NS	NS
JPDS	27	STUH- OPD 2-60 years old	5 wks.	Y	N

27. Lisdyanti 2011[42]	*Aloe vera* with vitamin E cream	Surgical wounds	De Los Santos-STI Medical Center – Dept. of OB-Gynecology
28. Lombos 2015[44]	Tea tree oil	Common warts	East Avenue Medical Center – Dept. of Dermatology
29. Martinez 2014[46]	Citronella shampoo (Lyecare)	Head lice	MPI-Medical Center Muntinlupa – Dept. of Pediatrics
30. Mendoza 2014[48]	Western dock 3% cream	Melasma	RITM – Dept. of Dermatology
31. Moreno 2016[50]	Cooking coconut oil	Head lice	OMMC – Dept. of Dermatology
32. Naagas-Sarmiento 2013[52]	Guava extract 10% shampoo	Seborrheic dermatitis	UERMMMC – Dept. of Dermatology
33. Ong-Salvador 2000[54]	Lavender, rosemary, eucalyptus in sunflower oil	Head lice	STUH – Dept. of Dermatology
34. Perez-Chua 2012[56]	Lavender, rosemary, eucalyptus in sunflower oil	Head lice	STUH – Dept. of Dermatology
35. Ramiro 2014[58]	Virgin coconut oil	Head lice	Veterans Memorial Medical Center – Dept. of Pediatrics
36. Rivera 1983[60]	Makabuhay 4% aqeous solution	Scabies	Not stated
37. Sayo-Bondoc 2016[62]	Malunggay 15% ointment	Localized pyoderma	OMMC – Dept. of Dermatology
38. Tavanlar-Amado 2014[64]	Papaya latex extract cream (BlemishOFf Herbocautery cream)	Warts	UERMMMC – Dept. of Dermatology
39. Uy 2003[66]	Guava leaf 0.25% decoction	Ecthyma	Iloilo Mission Hospital - Dept. of Pediatrics
40. Verallo-Rowell 2008	Virgin coconut oil	Atopic dermatitis	Skin Cancer Foundation, Inc.
41. Yoro 2005[69]	Makabuhay lotion	Scabies	St. Luke's Medical Center – Dept. of Pediatrics

Legend: UERMMMC University of the East-Ramon Magsaysay Memorial Medical Center; PJP Philippine Journal of Pediatrics; UERM JHS Journal of Health Sciences; FFP The Filipino Family Physician; JDD Journal of Drugs in Dermatology; PJMID Philippine Journal of Microbiology and Infectious Diseases; RITM Research Institute of Tropical Medicine; JPDS Journal of the Philippine Dermatological Society; JRRMMC Jose R. Reyes Memorial Medical Center; JPSCM Journal of the Phil. Society of Cutaneous Medicine; PGH Philippine General Hospital; IJD International Journal of Dermatology; STUH Santo Tomas University Hospital; OMMC Ospital ng Maynila Medical Center; JPMA Journal of the Philippine Medical Association

PJOG	101	Department of Obstetrics and Gynecology Adults	11 mos.	Y	NS
JPMA	20	Dermatology clinic, EAMC 8-45 years old	4 wks.	Y	NS
PIDSPJ	86	MPI PNR (Philippine National Railway) Site, Putatan, Muntinlupa City Children up to 15 years old	NS	Y	NS
IJD	45	Dermatology clinic, RITM Adults 18-60 years old	8 wks.	NS	NS
PIDSPJ	150	Barangay 704, Zone 77 malate Manila 1-12 years old	14 days	Y	NS
JPDS	45	Dermatology clinic, UERMMMC 18-60 years old	4 mos.	Y	N
JPDS	272	Selected orphanages in Metro Manila 6-15 years old	1 yr.	NS	Y, PCHRD
JPDS	154	Community in Bulacan Children, Adults, and Elderly	3 wks.	Y	N
PJP	180	Gawad Kalinga, Bagong Silangan and Our Lady of the Star Daycare Center, Caloocan City 2-19 years old	14 days	Y	NS
JPMA	91	Reception and Study Center for Children in Quezon City 2 mos. to 8 years old	NS	NS	NS
JPDS	66	Department of dermatology, OMMC 6-15 years old	4 mos.	Y	N
JPDS	74	Dermatology OPD, UERMMMC 5-70 years old	6 mos.	Y	NS
PJP	58	3 rural public elementary schools in Miag-ao, Iloilo, Philippines Children; no age stated	41 days	NS	NS
Dermatitis	52	2 general dermatology Clinics 18 to 40 years old	4 wks.	NS	Y, Skin Sciences Laboratory, Inc.
PJP	55	Manila Boys town Complex, Girls' Home 2-17 year old females	NS	NS	NS