

Naturopathic Medicine for the Management of Endometriosis, Dysmenorrhea, and Menorrhagia: A Content Analysis

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Abstract

Objectives: To explore the recommendations of naturopathic medicine for the management of endometriosis, dysmenorrhea, and menorrhagia, drawing on traditional and contemporary sources.

Design: Content analysis.

Setting: Australia, Canada, and the United States of America (USA).

Subjects: Contemporary sources were identified from reviewing naturopathic higher education institutions' recommended texts, while traditional sources were identified from libraries which hold collections of naturopathic sources. Sources were included if they were published from 1800 to 2016, were in English, published in Australia, Canada, or the USA, and reported on the topic. Included sources were as follows: 37 traditional texts; 47 contemporary texts; and 83 articles from naturopathic periodicals.

Results: Across included sources, the most reported disciplines were herbal medicine, clinical nutrition, mineral medicines, homeopathy, hydrotherapy, and chemical-based medicines. Herbal medicines were extensively reported from all sources for the management of endometriosis, dysmenorrhea, and menorrhagia. Clinical nutrition was only recommended from contemporary sources for all three conditions. Mineral medicines were mentioned in both traditional and contemporary sources, but were only recommended for dysmenorrhea and menorrhagia. There were limited recommendations for homeopathy and hydrotherapy treatments in all conditions across all sources. Chemical-based medicines were only mentioned for dysmenorrhea and menorrhagia, and recommendations ceased after 1922. Recommendations for endometriosis were not present in any of the traditional sources, across all reported disciplines.

Conclusions: The findings of this article provide insights into the documented historical and contemporary treatments within naturopathic medicine for endometriosis, dysmenorrhea, and menorrhagia. While philosophical principles remain the core of naturopathic practice, the therapeutic armamentarium appears to have changed over time, and a number of the original naturopathic treatments appear to have been retained as key elements of treatment for these conditions. Such insights into naturopathic treatments will be of particular interest to clinicians providing care to women, educators designing and delivering naturopathic training, and researchers conducting clinical and health service naturopathic research.

Keywords: endometriosis, dysmenorrhea, menorrhagia, naturopathy, traditional evidence, content analysis

Introduction

NATUROPATHY IS A TRADITIONAL SYSTEM of health care guided by philosophical principles which were codified during the 19th and 20th centuries and drawn from historical

predecessors in European traditional medicine.¹ Naturopathy as a distinct profession has traditional roots founded by the Nature Cure practice originating from Germany² and the historical pioneers of eclectic medicine during the 19th and 20th centuries,¹ which led to incorporation of homeopathy,

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herbal medicines, hydrotherapy, and other disciplines into naturopathy.² The naturopathic approach to care involves the combination of traditional and contemporary evidence, while being guided by the philosophical principles.³ According to the World Health Organization (WHO), naturopathy is recognized as one of the major global traditional systems of medicine.⁴ In the contemporary setting, naturopathy often falls under the term complementary medicine (CM), which includes a diverse collection of clinical practices that are not associated with conventional medicine.⁵ There has been increasing evidence that CM, including naturopathy,⁵ is more commonly used by women,⁶ particularly by those with reproductive conditions being a common reason for naturopathy use.⁷

Menstrual irregularities, including dysmenorrhea, known as painful menstruation, and menorrhagia, defined as excessive heavy menstrual bleeding,⁸ have varying prevalence rates. A WHO systematic review reported prevalence rates for dysmenorrhea, ranging from 1.7% to 97%,⁹ while an Australian study identified a prevalence rate of 80%.¹⁰ In the case of menorrhagia, prevalence rates of 5%–10% have been reported; however, the WHO reported that an estimated 18 million women worldwide are affected by menorrhagia.¹¹ Currently, there has been increased attention on endometriosis and is topical within the Australian Government¹²; however, its prevalence remains unclear.

Endometriosis is a chronic reproductive condition that presents with debility symptomology, including menorrhagia and dysmenorrhea,¹³ with many of its symptoms having direct negative impact on women's quality of life.¹⁴ Despite this, there has been limited research conducted on accurate prevalence rates, with one article from 1997 reporting that 1 in 10 women are diagnosed with endometriosis.¹⁵ However, this figure may not reflect the general population as it was reported on women who had surgery for infertility.¹⁵ In addition, prevalence rates have been reported in an Australian longitudinal study, which stated that the rates for endometriosis and dysmenorrhea have remained stable, while menorrhagia has increased over 7 years.¹⁶

These conditions have significant negative impacts on women's lives such as decreased quality of life.^{14,17} Not only do women report negative implications but also they face difficulties and dissatisfaction with care. A recent systematic review on endometriosis reported that women felt dissatisfied with the care and treatments they received from convention health professionals.¹⁴ Dissatisfaction with care and treatments has also been reported by women with dysmenorrhea¹⁸ and menorrhagia, with the level of dissatisfaction dependent on the type of treatment prescribed.¹⁹ Such factors may lead women to seek care from outside of the conventional domain, such as naturopathy.²⁰

There is emerging evidence of the use of naturopathy in the management of acute and chronic diseases,³ including female reproductive conditions such as pregnancy,²¹ menopause,²² and polycystic ovarian syndrome.²³ While recent evidence suggests that naturopathy is used by women with these and other reproductive conditions,^{7,16,24} there is limited evidence on the naturopathic treatments used in clinical practice. Identifying the level of engagement from traditional and contemporary evidence in practice is important to understand current naturopathic practice and to provide a foundational base for assessing naturopathic treatment ef-

fectiveness and safety.²⁵ In response to this gap, this article explores the traditional and contemporary naturopathic approaches to managing endometriosis, dysmenorrhea, and menorrhagia, drawing on traditional and contemporary texts and periodicals.

Materials and Methods

The contemporary texts were selected by identifying texts from naturopathic institutions in Australia, Canada, and the United States of America (USA) (the three countries where most scholarly work is known to exist²⁶). The naturopathic institutions were limited to accredited (USA and Canada) and degree-granting (Australia) institutions, including Endeavour College of Natural Health, Australia; Southern School of Natural Therapies, Australia; Australian College of Natural Therapies, Australia; National University of Natural Medicine (NUNM), USA; Southwest College of Naturopathic Medicine, USA; Canadian College of Naturopathic Medicine, Canada; and Bastyr University, USA.

The contemporary texts were from the textbooks required for undertaking a naturopathic qualification with subjects in naturopathic clinical practicum, naturopathic therapeutics, naturopathic theory, and naturopathic gynecology subjects. Contemporary texts were included if they reported naturopathic treatments for the management of endometriosis, dysmenorrhea, and menorrhagia.

Traditional texts were identified through the NUNM library catalog, which holds the largest repository of rare and traditional books on naturopathy in North America (the Friedhelm Kirchfeld Rare Book Collection). This collection was donated by collectors for the naturopathic profession and holds over 2000 texts and periodicals.²⁷ The library catalog search used the terms: *women's health* AND *naturopath** OR *herbal medicine* OR *eclectic**. Women's health as a term was selected as it was indexed against a large number of naturopathic sources, including traditional texts. The search was refined by English language and years 1800–1941. This year range was selected on the basis of the “three generations (75 years)” rule used by the Australian Therapeutic Goods Administration (the only regulator of the three countries that establishes a time limit for evidence) as the minimum requirement for recognition of traditional claims as a form of evidence.²⁸

A manual search of the NUNM library catalog was also conducted. Individual searches were employed using the following search terms: *women's health*, *naturopath**; *herbal medicine*; and *eclectic**. Each search was refined to the same parameters of the previous search. An additional hand search was conducted at the Friedhelm Kirchfeld Rare Book Collection. All identified texts were assessed in the same manner using title, table of contents, and chapter analysis for relevance to the topic. Traditional texts were included if they were published between 1800 and 1941, reported on naturopathic treatments for endometriosis, dysmenorrhea, or menorrhagia, and were published in Australia, Canada, or USA. Traditional texts were excluded if there was not a clear reference to naturopathy or where the author's known biography does not include a clear link to the naturopathic profession. In addition, traditional texts were also accessed through a website database Archive.org, which holds digital collections on a wide range of texts.

Naturopathic periodicals published from 1800 to 2016 were also included. Identification of periodicals was conducted using a manual search through the Friedhelm Kirchfeld Rare Book Collection, the National Library of Australia, and the State Library of South Australia. These libraries were selected as they have a well-regarded collection of periodicals relating to naturopathy that were not duplicated in other major libraries. Periodicals were included if they reported on the naturopathic treatment for endometriosis, dysmenorrhea, and menorrhagia, were published in Australia, Canada, or USA, and were published in English. As the project focused on Western naturopathy, English was the only language included.

Analysis

Data extraction involved reading sources and extracting data relevant to the topic. Extracted data were developed into Microsoft Word files, which were uploaded into the software program NVivo for thematic analysis. Thematic analysis was conducted using a content analysis approach where coding in NVivo was derived directly from the data extracted. This approach allowed for recording themes that were highlighted in the included texts. R.R. conducted the data extraction and thematic analysis. A.S. and J.W. conducted cross-checking of coding and thematic analysis.

Reference to “menstrual cramps,” “painful menstruation,” “uterine cramps,” and “uterine pain” within included sources was extracted and aggregated to the “dysmenorrhea” node. Likewise, “excessive menstruation” and “profuse menstruation” were coded to the “menorrhagia” node. Each individual treatment for the management of endometriosis, dysmenorrhea, or menorrhagia was allocated to an individual node and

was cross coded. Recommendations with combined treatments were assigned to each individual treatment node and were cross coded with the condition.

Results

Traditional texts

A total of 97 texts were identified from the NUNM electronic search. An additional 18 were identified from a manual search of the NUNM library catalog, and an additional 5 were identified from a hand search through the Friedhelm Kirchfeld Rare Book Collection, generating 120 for inclusion. From the 120 texts, 9 were duplicates, 50 were excluded based on review of title and/or chapter analysis, and 26 were excluded for not mentioning the topic. A total of 35 traditional texts were included. Figure 1 reports the selection process for the traditional texts.

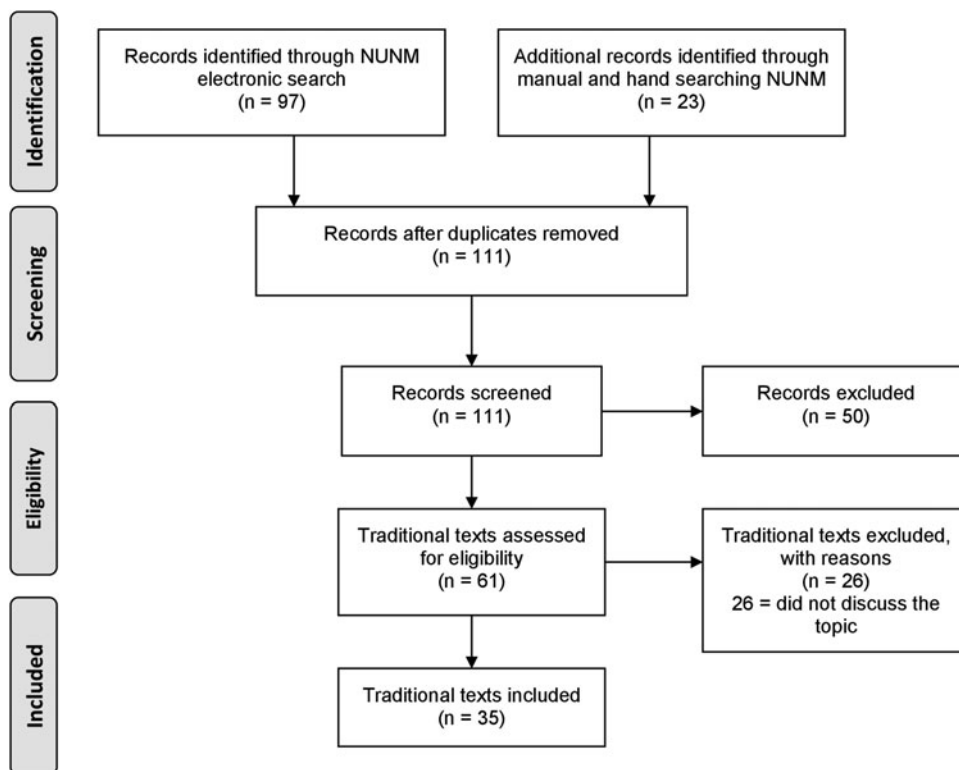
Contemporary texts

A total of 130 contemporary texts were identified from the education institutions. A total of 35 were duplicates, 30 were excluded based on review of the book’s description, and 6 were excluded based on table of contents, leaving 59 for assessment. From review of the chapters, 12 were excluded for not being of relevance, leaving 47 for inclusion. Figure 2 reports the selection process for the contemporary texts.

Traditional and contemporary periodicals

Based on title, 126 periodicals were assessed. From this figure, 102 were excluded for not being of relevance, leaving 24 periodicals for assessment. From assessment of the 24 periodicals (by title), 97 individual articles were assessed

FIG. 1. Selection process for the traditional texts. NUNM, National University of Natural Medicine.



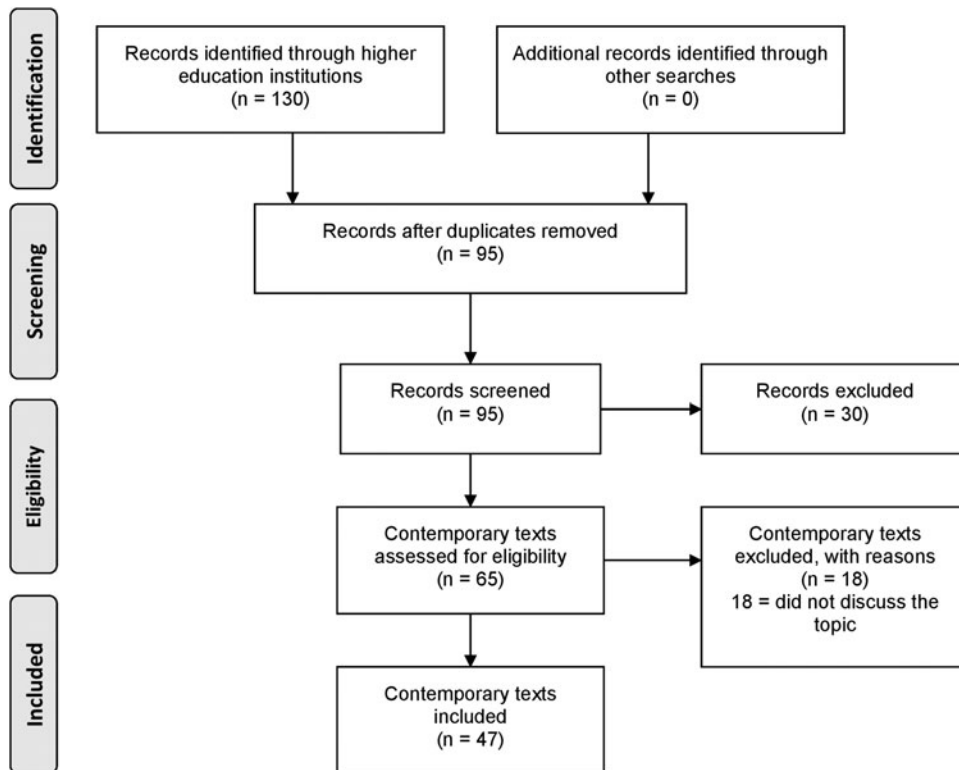


FIG. 2. Selection process for contemporary texts from higher education institutions.

for inclusion with 14 being excluded. The remaining 83 articles were included. The final included periodicals were allocated into traditional (years 1800–1941) ($n=52$) or contemporary periodicals (years 1942–2016) ($n=31$). Figure 3 reports the selection process for the traditional and contemporary periodicals.

In total, 167 naturopathic sources were included in the project.

Herbal medicine

Herbal medicine was the most reported treatment with 220 herbs for dysmenorrhea, 163 for menorrhagia, and 84 for endometriosis. Table 1 displays the herbal medicines for endometriosis, dysmenorrhea, and menorrhagia.

The most recommended herb for dysmenorrhea was *Cimicifuga racemosa* with 69 recommendations, with a continuous history of use across 23 traditional texts,^{29–51} 5 traditional periodicals,^{52–56} 22 contemporary texts,^{1,57–77} and 2 contemporary periodicals.^{78,79} Similarly, *Viburnum opulus*, *Caulophyllum thalictroides*, and *Anemone pulsatilla* were mentioned across traditional and contemporary sources. These herbs were recommended from 1856 to 2014. *Senecio aureus* and *Atropa belladonna*, while frequently listed, were only found in traditional sources with the most recent from 1935.^{29,51} *Gelsemium sempervirens* was primarily reported in traditional sources and in one contemporary source. Herbal medicines only identified in contemporary texts included *Rubus idaeus* ($n=15$), *Zingiber officinale* ($n=14$), *Angelica sinensis* ($n=14$), *Achillea millefolium* ($n=12$), *Piscidia erythrina* ($n=11$), and *Valeriana officinalis* ($n=10$).

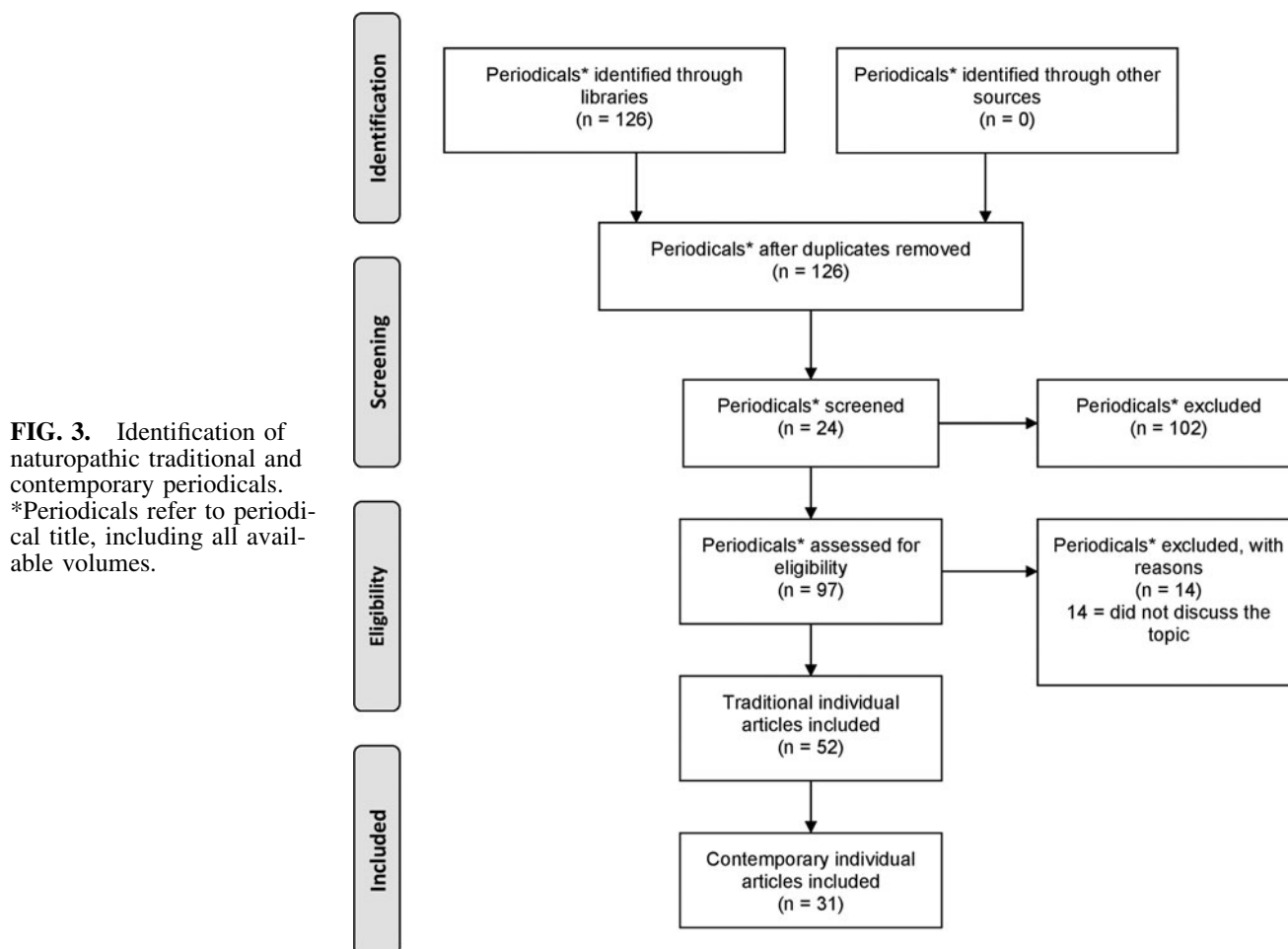
The herb most frequently identified for menorrhagia was *A. millefolium* with 34 recommendations,^{29,32,34,37,41–43,58,61,64,67,68,74–77,80–90} across 8 traditional texts,^{29,32,34,37,41–43,90} 2 traditional periodicals,^{88,89} 17 con-

temporary texts,^{58,61,64,67,68,74–77,81–87,91} and 1 contemporary periodical,⁸⁰ during 1856–2016.^{29,87} *Claviceps purpurea* ($n=12$)^{31,33,35,38,39,43,46,48,49,51,92,93} was frequently identified in traditional sources with one contemporary source.⁵⁹ Similarly, all reports of *Cephaelis ipecacuanha* and *C. racemosa* were from traditional sources, with no recommendations from contemporary sources. *S. aureus* was listed in traditional sources ($n=10$)^{29,30,34,37,40,44–46,49,94} and in five contemporary sources.^{67,71,75,86,87} The most referenced herbs from contemporary sources were *A. millefolium* ($n=17$)^{58,61,64,67,68,74–77,80–87} and *Capsella bursa-pastoris* ($n=17$).^{58,59,61,64,67,68,74,76,77,81,83,84,86,87,95–97} Recommendations for *R. idaeus* were reported in more contemporary sources^{64,67,69,70,82,84,86,95,98–100} compared to traditional sources.⁴⁴ *Vitex agnus-castus* was only reported from contemporary sources ($n=11$),^{61,64,67,68,71,73,76,83,85,87,95} with no recommendations from traditional sources.

Herbal treatments for endometriosis were few with 84 herbal medicines recommended. The top 20 herbs were recommended from contemporary texts during 1993–2016,^{83,87} with no recommendations from traditional sources. The most prominent herb recommendation across all sources was *V. agnus-castus* with 17 recommendations across 16 contemporary texts.^{60–64,67,69,71,73,74,76,83,84,86,87,101}

Mineral medicine

Table 2 displays the mineral medicines for endometriosis, dysmenorrhea, and menorrhagia. There were 12 minerals recommended for dysmenorrhea in 8 traditional texts,^{29,35,38,40,44,49,51,102} 14 contemporary texts,^{1,60,63–65,70,72–74,83,97,103–105} and 4 contemporary periodicals^{79,106–108} during 1856–2014. Magnesium was the most



commonly recommended mineral ($n=20$) followed by iron ($n=13$), calcium ($n=12$), phosphate ($n=7$), and iodine ($n=6$). A higher proportion of these recommendations were found in contemporary (texts: $n=14$; periodicals: $n=4$) compared to traditional sources (texts only: $n=8$).

For endometriosis management, 10 minerals were identified. The most common were selenium ($n=7$), magnesium ($n=6$), zinc ($n=5$), and calcium ($n=2$). These recommendations were reported during 1991–2016 and were across eight contemporary texts^{60,64,65,67,86,87,101,109} and one contemporary periodical.¹⁰⁶ There were no recommendations for minerals from traditional sources.

For menorrhagia, there were eight reported minerals across three traditional texts,^{40,44,110} one traditional periodical,¹¹¹ seven contemporary texts,^{64,83,85–87,97,104} and two contemporary periodicals.^{106,112} The most common was iron ($n=11$) across 10 sources.^{44,64,83,85–87,97,104,106,110} Other common minerals included calcium ($n=3$), phosphate ($n=3$), potassium ($n=3$), and zinc ($n=2$). These minerals were reported in three traditional texts,^{40,44,110} seven contemporary texts,^{64,83,85–87,97,104} and two contemporary periodicals^{106,112} between 1905 and 2016.^{44,87}

Clinical nutrition

Table 3 displays the nutritional treatments for endometriosis, dysmenorrhea, and menorrhagia. Across all three

conditions, more nutritional medicine ($n=29$) treatments were listed for the management of endometriosis compared to dysmenorrhea and menorrhagia, although all of these recommendations were only reported in the contemporary sources.^{60,64,65,67,73,74,76,83,86,87,97,101,106, 109,112–114} The earliest nutritional treatment for endometriosis was vitamin E

and was found in two contemporary periodicals from 1982¹¹² to 1991.¹⁰⁶ Vitamin E was also reported the largest number of recommendations ($n=13$). Other popular nutrients were eicosapentaenoic acid/docosahexaenoic acid ($n=11$), vitamin C ($n=9$), vitamin B complex ($n=7$), β -carotene ($n=6$), *Lactobacillus acidophilus* ($n=4$), choline ($n=3$), cysteine ($n=3$), γ -linolenic acid ($n=3$), and grape seed extract ($n=3$).

The nutritional management of dysmenorrhea was reported across 28 nutritional medicines, with the most prominent recommendation being vitamin E ($n=17$).^{1,63–65,67,70,72,73,97,103,104,106–108} Vitamin E was reported across 11 contemporary texts^{1,63–65,67,70,72,73,97,103,104} and 3 periodicals^{106–108} during 1991 and 2014. Other frequently reported treatments were eicosapentaenoic acid/docosahexaenoic acid ($n=12$), γ -linolenic acid ($n=9$), vitamin B6 ($n=8$), vitamin B3 ($n=7$), vitamin B1 ($n=6$), vitamin C ($n=5$), bromelain ($n=3$), folic acid ($n=2$), and probiotics ($n=2$, strain not specified). These recommendations were only reported in contemporary sources, with no recommendations

TABLE 1. COMMON HERBAL MEDICINES RECOMMENDED FOR ENDOMETRIOSIS, DYSMENORRHEA, AND MENORRHAGIA AS IDENTIFIED IN TRADITIONAL AND CONTEMPORARY SOURCES

Herbal medicine	Endometriosis			Dysmenorrhea			Menorrhagia		
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	
<i>Achillea millefolium</i>	—	n = 5 Wood ⁵⁸ ; Alfis ⁸⁴ ; Kaur et al. ⁶⁴ ; Romm ⁷³ ; Wood ⁷⁵	—	n = 14 Gladstar ⁸³ ; Wood ⁵⁸ ; Weiss ¹⁵⁷ ; Alfis ⁸⁴ ; Bliss ⁸ ; Van Wyk and Wink ³⁶ ; Gladstar ⁸⁵ ; Fisher ⁶⁸ ; Romm ⁷³ ; Wood ⁷⁵ ; Bone and Mills ⁷⁶ ; Sarris and Wardle ¹	n = 10 King ²⁹ ; Brown ³² ; Scudder ³⁴ ; Scudder ³⁷ ; Dean ⁴¹ ; Fyfe ⁴² ; Felter and Lloyd ⁴³ ; Mausert ⁹⁰ ; Lust ⁸⁸ ; Riggs ⁸⁹	n = 24 Atkinson ⁸⁰ ; Lust ⁸¹ ; Frawley and Lad ⁸² ; Gladstar ⁸³ ; Wood ⁵⁸ ; Alfis ⁸⁴ ; Bone ⁶¹ ; Kaur et al. ⁶⁴ ; Gladstar ⁸⁵ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Trickey ⁷⁴ ; Wood ⁷⁵ ; Pizzorno et al. ⁷ ; Bone and Mills ⁷⁶ ; Frances ⁷⁷ ; Pizzorno and Murray ⁸⁶			
<i>Alchemilla vulgaris</i>	—	n = 4 Alfis ⁸⁴ ; Godfrey and Saunders ⁷¹ ; Romm ⁷³ ; Tobyn ¹⁵⁸	—	—	n = 2 No author ¹⁵⁹ ; Milton ⁵⁶	n = 10 Wood ⁵⁸ ; Gladstar ⁸⁵ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Godfrey and Saunders ⁷¹ ; Tobyn ¹⁵⁸ ; Trickey ⁷⁴ ; Pizzorno and Murray ⁸⁶ ; Frances ⁷⁷			
<i>Aletris farinosa</i>	—	n = 9 King ²⁹ ; Webster et al. ⁴⁰ ; Felter and Lloyd ⁴⁴ ; Ellingwood ⁴⁶ ; Meyer ⁴⁸ ; Larsen	n = 4 Fisher ⁶⁸ ; Godfrey and Saunders ⁷¹ ; Trickey ⁷⁴ ; Sarris and Wardle ¹	n = 5 Brown ³² ; Watkins ³⁹ ; Felter and Lloyd ⁴⁴ ; Meyer ⁴⁸ ; Mausert ⁹⁰	n = 4 Atkinson ⁸⁰ ; Hudson ⁶⁷ ; Trickey ⁷⁴ ; Pizzorno and Murray ⁸⁶				
<i>Anemone pulsatilla</i>	—	n = 4 Micozzi and Lowdog ⁶³ ; Kaur et al. ⁶⁴ ; Romm ⁷³ ; Frances ⁷⁷	—	—	—	—			
<i>Angelica sinensis</i>	—	n = 6 Gladstar ⁸³ ; Micozzi and Lowdog ⁶³ ; Kaur et al. ⁶⁴ ; Kirschmann ¹⁰⁹ ; Romm ⁷³ ; Bone and Mills ⁷⁶	—	n = 17 Gladstar ⁸³ ; Bone ⁷⁶ ; Alfis ⁸⁴ ; Bone ⁶¹ ; Micozzi and Lowdog ⁶³ ; Tilgner ⁶⁹ ; Braun and Cohen ⁷⁰ ; Godfrey and Saunders ⁷¹ ; Leach ⁷² ; Romm ⁷³ ; Trickey ⁷⁴ ; Bone and Mills ⁷⁶ ; Frances ⁷⁷ ; Sarris and Wardle ¹	—	—			
<i>Astragalus membranaceus</i>	—	n = 4 Micozzi and Lowdog ⁶³ ; Kaur et al. ⁶⁴ ; Romm ⁷³ ; Bone and Mills ⁷⁶	—	—	—	—			

(continued)

TABLE 1. (CONTINUED)

Herbal medicine	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>Atropa belladonna</i>	—	—	<i>n</i> = 10 King ²⁹ ; Phillips ³¹ ; Locke and Felter ³⁸ ; Felter and Lloyd ⁴³ ; Felter and Lloyd ⁴⁴ ; Felter ⁴⁹ ; Wilson ⁵¹	<i>n</i> = 3 Weiss ¹⁵⁷ ; Frances ⁷⁷	—	—
<i>Capsella bursa-pastoris</i>	—	—	—	—	<i>n</i> = 8 Lust ⁸⁸ ; Scudder ³⁷ ; Watkins ³⁹ ; Fyfe ⁴² ; Felter and Lloyd ⁴³ ; Ellingwood and Lloyd ⁴⁵ ; Mausert ⁹⁰ ; Wilson ⁵¹	<i>n</i> = 19 Lust ⁸¹ ; Gladstar ⁸³ ; Wood ⁵⁸ ; Blumenthal ⁹ ; Alfs ⁸⁴ ; Bone ⁶¹ ; Van Wyk and Wink ⁹⁶ ; Kaur et al. ⁶⁴ ; Osiecki ⁹⁷ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Trickey ⁷⁴ ; Pizzorno and Murray ⁸⁶ ; Bone and Mills ⁷⁶ ; Frances ⁷⁷ ; Pizzorno et al. ⁸⁷
<i>Caulophyllum thalictroides</i>	—	—	—	—	<i>n</i> = 7 King ²⁹ ; Coe ³⁰ ; Adolphus ¹⁶⁰ ; Felter and Lloyd ⁴³ ; Felter and Lloyd ⁴⁴	<i>n</i> = 8 Alfs ⁸⁴ ; Bone ⁶¹ ; Hudson ⁶⁷ ; Tilgner ⁶⁹ ; Godfrey and Saunders ⁷¹ ; Trickey ⁷⁴ ; Pizzorno and Murray ⁸⁶ ; Frances ⁷⁷
<i>Cephaelis ipecacuanha</i>	—	—	—	—	<i>n</i> = 9 Phillips ³¹ ; Scudder ³³ ; Goss ³⁵ ; Fyfe ⁴² ; Felter and Lloyd ⁴⁴ ; Ellingwood and Lloyd ⁴⁵ ; Felter ⁴⁹	—
<i>Chamaelirium luteum</i>	—	—	<i>n</i> = 16 Scudder ¹⁶¹ ; Felter ¹⁶² ; Howard ¹²⁶ ; King ²⁹ ; Coe ³⁰ ; Goss ³⁵ ; Locke and Felter ³⁸ ; Felter and Lloyd ⁴³ ; Felter and Lloyd ⁴⁴ ; Ellingwood ⁴⁶ ; Blair ⁴⁷ ; Meyer ⁴⁸ ; Wilson ⁵¹	<i>n</i> = 10 Bradley ⁵⁷ ; Bone ⁶¹ ; Osiecki ⁹⁷ ; Barnes et al. ⁶⁶ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Godfrey and Saunders ⁷¹ ; Leach ⁷² ; Hechtman ¹⁰³ ; Sarris and Wardle ¹	<i>n</i> = 5 Griffith ¹⁶³ ; King ²⁹ ; Watkins ³⁹ ; Fyfe ⁴² ; Ellingwood ⁴⁶	<i>n</i> = 3 Osiecki ⁹⁷ ; Trickey ⁷⁴ ; Wood ⁷⁵

(continued)

TABLE 1. (CONTINUED)

Herbal medicine	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>Cimicifuga racemosa</i>	—	<i>n</i> = 9 Hoffman ⁶² , Micozzi and Lowdog ⁶³ , Kaur et al. ⁶⁴ , Ostrzenski ⁶⁰ , Frances ⁷¹ , Tilgner ⁶⁹ , Braun and Cohen ⁷⁰ , Romm ⁷³ , Kirschmann ¹⁰⁹ , Hudson ⁶⁷	<i>n</i> = 42 Scudder ⁵² , Webster ⁵³ , Felter ⁵⁴ , Felter ⁵⁵ , Milton ⁵⁶ , King ²⁹ , Coe ³⁰ , Phillips ³¹ , Brown ³² , Scudder ³³ , Scudder ³⁴ , Gross ³⁵ , Scudder ³⁶ , Scudder ³⁷ , Locke and Felter ³⁸ , Watkins ³⁹ , Webster et al. ⁴⁰ , Dean ⁴¹ , Fyfe ⁴² , Felter and Lloyd ⁴³ , Felter and Lloyd ⁴⁴ , Ellingwood and Lloyd ⁴⁵ , Ellingwood ⁴⁶ , Blair ⁴⁷ , Meyer ⁴⁸ , Felter ⁴⁹ , Rexford ⁵⁰ , Wilson ⁵¹	<i>n</i> = 27 Bliss ⁷⁸ , Wharton ⁷⁹ , Bradley ⁵⁷ , Wood ⁵⁸ , Blumenthal ⁵⁹ , Ostrzenski ⁶⁰ , Bone ⁶¹ , Hoffman ⁶² , Micozzi and Lowdog ⁶³ , Kaur et al. ⁶⁴ , Northrup ⁶⁵ , Barnes et al. ⁶⁶ , Hudson ⁶⁷ , Fisher ⁶⁸ , Tilgner ⁶⁹ , Braun and Cohen ⁷⁰ , Godfrey and Saunders ⁷¹ , Leach ⁷² , Romm ⁷³ , Trickey ⁷⁴ , Wood ⁷⁵ , Bone and Mills ⁷⁶ , Frances ⁷⁷ , Sarris and Wardle ¹	<i>n</i> = 8 Neal ¹⁶⁴ , King ²⁹ , Scudder ³³ , Watkins ³⁹ , Felter and Lloyd ⁴³ , Felter and Lloyd ⁴⁴ , Wilson ⁵¹	—
<i>Cinnamomum cassia</i>	—	—	—	—	<i>n</i> = 9 Scudder ³³ , Watkins ³⁹ , Dean ⁴¹ , Felter and Lloyd ⁴³ , Felter and Lloyd ⁴⁴ , Wilson ⁵¹	<i>n</i> = 4 Gladstar ⁸³ , Alfis ⁸⁴ , Hudson ⁶⁷ , Pizzorno and Murray ⁸⁶
<i>Claviceps purpurea</i>	—	—	—	—	<i>n</i> = 14 Phillips ³¹ , Scudder ³³ , Gross ³⁵ , Locke and Felter ³⁸ , Watkins ³⁹ , Felter and Lloyd ⁴³ , Ellingwood ⁴⁶ , Meyer ⁴⁸ , Felter ⁴⁹ , Larsen ⁹³ , Scudder ⁹² , Wilson ⁵¹	<i>n</i> = 1 Blumenthal ⁵⁹
<i>Curcuma longa</i>	—	<i>n</i> = 5 Kaur et al. ⁶⁴ , Romm ⁷³ , Trickey ⁷⁴ , Bone and Mills ⁷⁶	—	—	—	—
<i>Dioscorea villosa</i>	—	<i>n</i> = 6 Hoffman ⁶² , Gladstar ⁸³ , Ostrzenski ⁶⁰ , Hudson ⁶⁷ , Romm	<i>n</i> = 11 King ²⁹ , Kost ¹⁶⁵ , Coe ³⁰ , Scudder ³³ , Locke and Felter ³⁸ , Ellingwood ¹⁶⁶ , Ellingwood and Lloyd ⁴⁵ , Felter ⁴⁹ , Felter ⁶⁷ , Rexford ⁵⁰ , Wilson ⁵¹	<i>n</i> = 19 Gladstar ⁸³ , Wood ⁸⁸ , Ostrzenski ⁶⁰ , Alfis ⁸⁴ , Bone ⁶¹ , Hoffman ⁶² , Micozzi and Lowdog ⁶³ , Hudson ⁶⁷ , Fisher ⁶⁸ , Braun and Cohen ⁷⁰ , Godfrey and Saunders ⁷¹ , Romm ⁷³ , Leach ⁷² , Trickey ⁷⁴ , Bone and Mills ⁷⁶ , Hechtman ¹⁰³ , Sarris and Wardle ¹	—	—

(continued)

TABLE 1. (CONTINUED)

Herbal medicine	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>Echinacea angustifolia</i>	—	<i>n</i> = 4 Micozzi and Lowdog ⁶³ , Kaur et al. ⁶⁴ , Romm ⁷³ , Bone and Mills ⁷⁶	—	—	—	—
<i>Erigeron canadensis</i>	—	—	—	—	<i>n</i> = 9 King ²⁹ , Coe ³⁰ , Scudder ³³ , Watkins ³⁹ , Webster et al. ⁴⁰ , Ellingwood and Lloyd ⁴³ , Wilson ⁵¹	<i>n</i> = 2 Hudson ⁶⁷ ; Pizzomo and Murray ⁸⁶
<i>Gelsemium sempervirens</i>	—	—	<i>n</i> = 15 King ²⁹ , Coe ³⁰ , Brown ³² , Scudder ³³ , Goss ³⁵ , ¹⁶⁸ , Watkins ⁹⁴ , Scudder ¹⁶⁸ , Locke and Felter ³⁸ , Watkins ³⁹ , Webster et al. ⁴⁰ , Denton ¹⁶⁹ , Felter and Lloyd ⁴⁴ , Jones ¹⁰² , Blair ⁴⁷	<i>n</i> = 1 Fisher ⁶⁸	—	—
<i>Geranium maculatum</i>	—	—	—	—	<i>n</i> = 9 King ²⁹ , Brown ³² , Watkins ³⁹ , Felter and Lloyd ⁴⁴ , Meyer ⁴⁸ , Felter ⁴⁹ , Unknown author ¹⁷⁰	<i>n</i> = 10 Atkinson ⁸⁰ , Vasquez ¹⁷¹ , Vazquez ¹⁷² , Wood ⁵⁸ , Alfs ⁸⁴ , Bone ⁶¹ , Hudson ⁶⁷ , Fisher ⁶⁸ , Trickey ⁷⁴ , Pizzomo and Murray ⁸⁶
<i>Glycyrrhiza glabra</i>	—	<i>n</i> = 4 Micozzi and Lowdog ⁶³ , Kirschmann ¹⁰⁹ , Romm ⁷³ , Bone and Mills ⁷⁶	—	—	—	—
<i>Gossypium herbaceum</i>	—	<i>n</i> = 3 Micozzi and Lowdog ⁶³ , Romm ⁷³ , Godfrey and Saunders ⁷¹	—	—	—	—
<i>Hydrastis canadensis</i>	—	—	—	—	<i>n</i> = 9 Brown ³² , Watkins ³⁹ , Cook ⁹¹ , Adolphus ¹⁶⁰ , Felter and Lloyd ⁴⁴ , Lloyd ¹⁷³ , Ellingwood and Lloyd ⁴⁵ , Felter ⁴⁹ , Wilson ⁵¹	<i>n</i> = 8 Hedges ¹⁷⁴ , Frawley and Lad ⁸² , Bradley ⁵⁷ , Bone ⁶¹ , Hudson ⁶⁷ , Fisher ⁶⁸ , Trickey ⁷⁴ , Pizzomo and Murray ⁸⁶
<i>Juniperus sabina</i>	—	—	—	—	<i>n</i> = 8 King ²⁹ , Phillips ³¹ , Goss ³⁵ , Scudder ³⁷ , Locke and Felter ³⁸ , Fyfe ⁴² , Felter and Lloyd ⁴⁴ , Jones ¹⁰²	<i>n</i> = 2 Hudson ⁶⁷ , Pizzomo and Murray ⁸⁶

(continued)

TABLE 1. (CONTINUED)

Herbal medicine	Dysmenorrhea			Menorrhagia		
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>Leonurus cardiaca</i>	—	<i>n</i> = 5 Ostrzenski ⁶⁰ ; Hudson ⁶⁷ ; Romm ⁷³ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	<i>n</i> = 4 Felter and Lloyd ⁴⁴ ; Ellingwood and Lloyd ⁴⁵ ; Ellingwood ⁴⁶ ; Rexford ¹	<i>n</i> = 12 Bone ⁶¹ ; Gladstar ⁸³ ; Alfs ⁸⁴ ; Gladstar ⁸⁵ ; Fisher ⁶⁸ ; Leach ⁷² ; Romm ⁷³ ; Frances ⁷⁷	—	—
<i>Matricaria recutita</i>	—	—	<i>n</i> = 10 King ²⁹ ; Brown ³² ; Locke and Felter ³⁸ ; Webster et al. ⁴⁰ ; Felter ¹⁷⁵ ; Felter and Lloyd ⁴⁴ ; Blair ⁴⁷ ; Felter ¹⁷⁶ ; Felter ⁴⁹ ; Rexford ⁵⁰	<i>n</i> = 16 Wharton ⁷⁹ ; Wharton ¹⁰⁸ ; Wood ⁵⁸ ; Alfs ⁸⁴ ; Bone ⁶¹ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Leach ⁷² ; Romm ⁷³ ; Trickey ⁷⁴ ; Bone and Mills ⁷⁶ ; Sarris and Wardle ¹	—	—
<i>Mitchella repens</i>	—	—	<i>n</i> = 11 Howard ¹²⁶ ; King ²⁹ ; Locke and Felter ³⁸ ; Fyfe ⁴² ; Felter and Lloyd ⁴⁴ ; Ellingwood and Lloyd ⁴⁵ ; Ellingwood ⁴⁶	<i>n</i> = 13 Milton ⁵⁶ ; Wharton ¹⁰⁷ ; Wharton ¹⁰⁸ ; Boyle and Saine ¹²⁴ ; Alfs ⁸⁴ ; Micozzi and Lowdog ⁶³ ; Fisher ⁶⁸ ; Tilgner ⁶⁹ ; Godfrey and Saunders ⁷¹ ; Leach ⁷² ; Romm ⁷³ ; Wood ⁷⁵ ; Frances ⁷⁷	<i>n</i> = 5 King ²⁹ ; Meyer ⁴⁸ ; Fyfe ⁴² ; Felter and Lloyd ⁴⁴	<i>n</i> = 5 Alfs ⁸⁴ ; Godfrey and Saunders ⁷¹ ; Trickey ⁷⁴ ; Frances ⁷⁷ ; Milton ⁵⁶
<i>Paeonia lactiflora</i>	—	<i>n</i> = 4 Micozzi and Lowdog ⁶³ ; Romm ⁷³ ; Tobyn ¹⁵⁸ ; Trickey ⁷⁴	—	—	—	—
<i>Pinus pinaster</i>	—	<i>n</i> = 5 Trickey ⁷⁴ ; Murray and Pizzorno ¹⁰¹ ; Pizzorno and Murray ⁸⁶ ; Bone and Mills ⁷⁶ ; Pizzorno et al. ⁸⁷	—	—	—	—
<i>Piscidia erythrina</i>	—	—	<i>n</i> = 4 Watkins ³⁶ ; Webster et al. ⁴⁰ ; Fyfe ⁴² ; Ellingwood and Lloyd ⁴⁵	<i>n</i> = 11 Bradley ⁵⁷ ; Bone ⁶¹ ; Barnes et al. ⁶⁶ ; Fisher ⁶⁸ ; Tilgner ⁶⁹ ; Godfrey and Saunders ⁷¹ ; Leach ⁷² ; Romm ⁷³ ; Trickey ⁷⁴ ; Frances ⁷⁷ ; Sarris and Wardle ¹	—	—
<i>Rubus idaeus</i>	—	—	—	<i>n</i> = 16 Phyllis ⁹⁸ ; Blackwell ⁹⁹ ; Frawley and Lad ⁸² ; Gladstar ⁸³ ; Wharton ¹⁰⁷ ; Wharton ⁷⁹ ; Wharton ¹⁰⁸ ; Gladstar ⁸⁵ ; Fisher ⁶⁸ ; Braun and Cohen ⁷⁰ ; Romm ⁷³ ; Trickey ⁷⁴ ; Bone and Mills ⁷⁶ ; Frances ⁷⁷ ; Sarris and Wardle ¹	<i>n</i> = 1 Felter and Lloyd ⁴⁴	<i>n</i> = 11 Frawley and Lad ⁸² ; Gladstar ⁸³ ; Ogilvie ¹⁰⁰ ; Alfs ⁸⁴ ; Kaur et al. ⁶⁴ ; Hudson ⁶⁷ ; Pizzorno and Murray ⁸⁶ ; Tilgner ⁶⁹ ; Braun and Cohen ⁷⁰ ; Phyllis ⁹⁸ ; Blackwell ⁹⁹

(continued)

TABLE 1. (CONTINUED)

Herbal medicine	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>Senecio aureus</i>	—	—	<i>n</i> = 17 King ²⁹ ; Kost ¹⁶⁵ ; Coe ³⁰ ; Brown ³² ; Scudder ³⁴ ; Goss ³⁵ ; Watkins ³⁹ ; Webster ⁴⁰ ; Dean ⁴¹ ; Felter and Lloyd ⁴⁴ ; Ellingwood and Lloyd ⁴⁵ ; Ellingwood ⁴⁶ ; Felter ⁴⁹ ; Mausert ⁹⁰	<i>n</i> = 2 Godfrey and Saunders ⁷¹ ; Wood ⁷⁵	<i>n</i> = 10 King ²⁹ ; Coe ³⁰ ; Scudder ³⁴ ; Scudder ³⁷ ; Watkins ³⁹ ; Webster ⁴⁰ ; Felter and Lloyd ⁴⁴ ; Ellingwood and Lloyd ⁴⁵ ; Ellingwood ⁴⁶ ; Felter ⁴⁹	<i>n</i> = 5 Hudson ⁶⁷ ; Godfrey and Saunders ⁷¹ ; Wood ⁷⁵ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷
<i>Silybum marianum</i>	—	<i>n</i> = 3 Micozzi and Lowdog ⁶³ ; Romm ⁷³ ; Bone and Mills ⁷⁶	—	—	—	—
<i>Taraxacum officinale</i>	—	<i>n</i> = 7 Gladstar ⁸³ ; Ostrzenski ⁶⁰ ; Micozzi and Lowdog ⁶³ ; Hudson ⁶⁷ ; Romm ⁷³ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	—	—	—	—
<i>Trillium erectum</i>	—	—	—	—	<i>n</i> = 11 King ²⁹ ; Coe ³⁰ ; Brown ³² ; Scudder ³⁴ ; Webster et al. ⁴⁰ ; Felter and Lloyd ⁴⁴ ; Meyer ⁴⁸ ; Larsen ⁹³ ; Unknown author ¹⁷⁷	<i>n</i> = 9 Atkinson ⁸⁰ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Tilgner ⁶⁹ ; Trickey ⁷⁴ ; Wood ⁷⁵ ; Pizzorno and Murray ⁸⁶ ; Bone and Mills ⁷⁶
<i>Valeriana officinalis</i>	—	<i>n</i> = 3 King ²⁹ ; Felter and Lloyd ⁴⁴ ; Rexford ⁵⁰	<i>n</i> = 10 Frawley and Lad ⁸² ; Gladstar ⁸³ ; Weiss ¹⁵⁷ ; Barnes et al. ⁶⁶ ; Hudson ⁶⁷ ; Tilgner ⁶⁹ ; Leach ⁷² ; Trickey ⁷⁴ ; Frances ⁷⁷ ; Sarris and Wardle ¹	—	—	—
<i>Viburnum opulus</i>	—	<i>n</i> = 5 Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ ; Hudson ⁶⁷ ; Romm ⁷³ ; Bone and Mills ⁷⁶	—	—	—	—
<i>Viburnum prunifolium</i>	—	<i>n</i> = 13 Felter ⁶² ; Webster ⁴⁰ ; Scudder ³⁴ ; Goss ³⁵ ; Cook ⁹¹ ; Felter and Lloyd ⁴⁴ ; Ellingwood ⁴⁶ ; Lloyd ⁴⁵ ; Ellingwood ⁴⁶ ; Meyer ⁴⁸ ; Felter ⁴⁹ ; Larsen ⁹³ ; Rexford ⁵⁰ ; Wilson ⁵¹	<i>n</i> = 21 Wharton ⁷⁹ ; Wood ⁵⁸ ; Weiss ¹⁵⁷ ; Ostrzenski ⁶⁰ ; Bone ⁶¹ ; Hoffman ⁶² ; Micozzi and Lowdog ⁶³ ; Van Wyk and Wink ⁹⁶ ; Gladstar ⁸³ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Godfrey and Saunders ⁷¹ ; Leach ⁷² ; Romm ⁷³ ; Trickey ⁷⁴ ; Wood ⁷⁵ ; Bone and Mills ⁷⁶ ; Hechtman ¹⁰³	<i>n</i> = 9 Felter ¹⁶² ; Webster ⁴⁰ ; Scudder ³³ ; Scudder ³⁴ ; Wilson ⁵¹ ; Felter and Lloyd ⁴⁴ ; Meyer ⁴⁸ ; Cook ⁹¹	<i>n</i> = 3 Bliss ⁷⁸ ; Godfrey and Saunders ⁷¹ ; Wood ⁷⁵	

(continued)

TABLE 1. (CONTINUED)

Herbal medicine	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>Vitex agnus-castus</i>	—	n = 17 Gladstar ⁸³ ; Ostrzenski ⁶⁰ ; Alfs ⁸⁴ ; Bone ⁶¹ ; Hoffman ⁶² ; Micozzi and Lowdog ⁶³ ; Kaur ⁶⁴ ; Hudson ⁶⁷ ; Tilgner ⁶⁹ ; Godfrey and Saunders ⁷¹ ; Romm ⁷³ ; Trickey ⁷⁴ ; Murray and Pizzorno ¹⁰¹ ; Pizzorno and Murray ⁸⁶ ; Bone and Mills ⁷⁶ ; Pizzorno et al. ⁸⁷	—	—	—	n = 13 Gladstar ⁸³ ; Bone ⁶¹ ; Gladstar ⁸⁵ ; Kaur ⁶⁴ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Godfrey and Saunders ⁷¹ ; Romm ⁷³ ; Pizzorno and Murray ⁸⁶ ; Bone and Mills ⁷⁶ ; Pizzorno et al. ⁸⁷
<i>Zanthoxylum americanum</i>	—	n = 4 Ostrzenski ⁶⁰ ; Hudson ⁶⁷ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	—	—	—	—
<i>Zingiber officinale</i>	—	n = 5 Micozzi and Lowdog ⁶³ ; Kaur et al. ⁶⁴ ; Romm ⁷³ ; Trickey ⁷⁴ ; Bone and Mills ⁷⁶	n = 3 Ellingwood and Lloyd ⁴⁵ ; Meyer ⁴⁸ ; Felter ⁴⁹	n = 20 Gladstar ⁸³ ; Ostrzenski ⁶⁰ ; Bone ⁶¹ ; Kaur et al. ⁶⁴ ; Gladstar ⁸⁵ ; Hudson ⁶⁷ ; Fisher ⁶⁸ ; Braun and Cohen ⁷⁰ ; Trickey ⁷⁴ ; Gladstar ⁷⁰ ; Bone and Mills ⁷⁶ ; Sarris and Wardle ⁷² ; Leach ⁷² ; Romm ⁷³	—	—

TABLE 2. TOP 5 MINERALS AND NUMBER OF RECOMMENDATIONS ACROSS THE CONTEMPORARY AND TRADITIONAL SOURCES

Minerals	Endometriosis			Dysmenorrhea			Menorrhagia		
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	
Calcium (phosphate)	—	n=2 Kaur et al. ⁶⁴ , Kirschmann ¹⁰⁹	—	n=12 Dillon ¹⁰⁶ , Wharton ¹⁰⁷ , Wharton ⁷⁹ , Wharton ¹⁰⁸ , Ostrzenski ⁶⁰ , Kaur et al. ⁶⁴ , Leach ⁷² , Romm ⁷³ , Hechtman ¹⁰⁵ , Sarris and Wardle ¹	n=1 Webster et al. ⁴⁰	n=2 Dillon ¹⁰⁶ , Atkinson ¹¹²	—	—	—
Iodine (alone, kelp, or with other minerals)	—	n=1 Kaur et al. ⁶⁴	n=6 King ²⁹ , Goss ³⁵ , Locke and Felter ³⁸ , Felter and Lloyd ⁴⁴ ; Felter ⁴⁹	—	—	—	—	—	—
Iron (chloride, phosphate, sulfate, gluconate or Lloyd's Iron)	—	—	n=7 Goss ³⁵ ; Locke and Felter ³⁸ , Webster et al. ⁴⁰ , Felter and Lloyd ⁴⁴ , Felter ⁴⁹ , Wilson ⁵¹	n=6 Dillon ¹⁰⁶ ; Gladstar ⁸³ ; Werbach and Moss ¹⁰⁴ ; Osiecki ⁹⁷ ; Leach ⁷² ; Hechtman ¹⁰⁵	n=2 Feller and Lloyd ⁴⁴ , Melendy ¹¹¹	n=9 Dillon ¹⁰⁶ , Gladstar ⁸³ , Werbach and Moss ¹⁰⁴ , Kaur et al. ⁶⁴ , Osiecki ⁹⁷ , Gladstar ⁸⁵ , Pizzorno and Murray ⁸⁶ , Pizzorno et al. ⁸⁷	—	—	—
Magnesium (orotate, chelate, or phosphate)	—	n=6 Kaur et al. ⁶⁴ , Northrup ⁶⁵ ; Kirschmann ¹⁰⁹ ; Murray and Pizzorno ¹⁰¹	n=1 Jones ¹⁰²	n=19 Dillon ¹⁰⁶ , Wharton ¹⁰⁷ ; Wharton ¹⁰⁸ , Murray ¹⁰⁵ ; Werbach and Moss ¹⁰⁴ , Ostrzenski ⁶⁰ ; Micozzi and Lowdog ⁶³ ; Osiecki ⁹⁷ ; Braun and Cohen ⁷⁰ ; Leach ⁷² ; Romm ⁷³ ; Trickey ⁷⁴ ; Hechtman ¹⁰⁵ ; Sarris and Wardle ¹	—	—	—	—	—
Phosphate (alone or with other minerals)	—	—	n=5 Locke and Felter ³⁸ ; Webster et al. ⁴⁰ ; Felter and Lloyd ⁴⁴ ; Jones ¹⁰²	n=2 Dillon ¹⁰⁶	n=1 Webster et al. ⁴⁰	n=2 Dillon ¹⁰⁶ , Atkinson ¹¹²	—	—	—
Potassium (chloride or phosphate)	—	—	—	—	—	—	—	—	—
Selenium (form not specified)	—	n=7 Ostrzenski ⁶⁰ , Kaur et al. ⁶⁴ , Northrup ⁶⁵ ; Hudson ⁶⁷ ; Murray and Pizzorno ¹⁰¹ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	—	—	—	—	—	—	—
Zinc (form not specified)	—	n=5 Dillon ¹¹⁰ , Kaur et al. ⁶⁴ ; Northrup ⁶⁵ ; Kirschmann ¹⁰⁹ , Murray and Pizzorno ¹⁰¹	—	—	—	n=2 Dillon ¹⁰⁶ , Kaur et al. ⁶⁴	—	—	—

TABLE 3. TOP 10 NUTRITIONAL MEDICINES AND NUMBER OF RECOMMENDATIONS ACROSS THE CONTEMPORARY SOURCES

Nutritional medicines	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
β -Carotene	—	$n=6$ Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ , Kirschmann ¹⁰⁹ ; Hudson ⁶⁷ , Pizzorno and Murray ⁸⁶ , Pizzorno et al. ⁸⁷	—	—	—	—
Bioflavonoids	—	—	—	—	—	$n=5$ Kaur et al. ⁶⁴ , Hudson ⁶⁷ , Trickey ⁷⁴ ; Pizzorno and Murray ⁸⁶ , ⁸⁷ Pizzorno et al.
Bromelain	—	—	—	$n=3$ Kaur et al. ⁶⁴ , Hendl ¹⁵⁷ , Romm ⁷³	—	—
Chlorophyll tablets	—	—	—	—	—	$n=2$ Pizzorno and Murray ⁸⁶ , Pizzorno et al. ⁸⁷
Choline	—	$n=3$ Hudson ⁶⁷ , Pizzorno and Murray ⁸⁶ , Pizzorno et al. ⁸⁷	—	—	—	—
Cysteine	—	$n=3$ Hudson ⁶⁷ , Pizzorno and Murray ⁸⁶ , Pizzorno et al. ⁸⁷	—	—	—	—
Essential fatty acids	—	$n=11$ Kaur et al. ⁶⁴ ; Northrup ⁶⁵ , Osiecki ⁹⁷ ; Kirschmann ¹⁰⁹ , Hudson ⁶⁷ ; Romm ⁷³ , Trickey ⁷⁴ ; Murray and Pizzorno ¹⁰¹ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	—	$n=12$ Wharton ¹⁰⁷ ; Werbach and Moss ¹⁰⁴ ; Ostrzenski ⁶⁰ , Micozzi and Lowdog ⁶³ ; Kaur et al. ⁶⁴ ; Northrup ⁶⁵ ; Osiecki ⁹⁷ ; Hudson ⁶⁷ ; Romm ⁷³ ; Leach ⁷² ; Trickey ⁷⁴ ; Hechtman ¹⁰⁵	—	$n=3$ Kaur et al. ⁶⁴ ; Osiecki ⁹⁷ ; Romm ⁷³
Flaxseed oil	—	—	—	—	—	$n=1$ Kaur et al. ⁶⁴
Folic acid	—	—	—	$n=2$ Dillon ¹⁰⁶ ; Hechtman ¹⁰³	—	—

(continued)

TABLE 3. (CONTINUED)

Nutritional medicines	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
γ -Linolenic acid	—	<i>n</i> =3 Gladstar ⁸³ ; Ostrzenski ⁶⁰ ; Hudson ⁶⁷	—	<i>n</i> =9 Dillon ¹⁰⁶ ; Gladstar ⁸³ ; Wharton ¹⁰⁷ ; Wharton ¹⁰⁸ ; Osiecki ⁹⁷ ; Braun and Cohen ⁷⁰ ; Leach ⁷² ; Romm ⁷³ ; Hechtman ¹⁰³	—	<i>n</i> =1 Kaur et al. ⁶⁴
Grape seed extract	—	<i>n</i> =3 Trickey ⁷⁴ ; Murray and Pizzorno ¹⁰¹ ; Bone and Mills ⁷⁶	—	—	—	—
Kelp	—	—	—	—	—	<i>n</i> =1 Atkinson ¹¹²
<i>Lactobacillus acidophilus</i>	—	<i>n</i> =4 Kaur et al. ⁶⁴ ; Osiecki ⁹⁷ ; Prousky ¹¹⁴ ; Prousky ¹¹⁵	—	—	—	—
Probiotics (strain not specified)	—	—	—	<i>n</i> =2 Kaur et al. ⁶⁴ ; Hechtman ¹⁰³	—	—
Vitamin A	—	—	—	—	—	<i>n</i> =7 Dillon ¹⁰⁶ ; Werbach and Moss ¹⁰⁴ ; Moss ¹⁰⁴ ; Kaur et al. ⁶⁴ ; Northrup ⁶⁵ ; Hudson ⁶⁷ ; Romm ⁷³ ; Trickey ⁷⁴
Vitamin B complex	—	<i>n</i> =7 Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ ; Kirschmann ¹⁰⁹ ; Hudson ⁶⁷ ; Romm ⁷³ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	—	—	—	—
Vitamin B1	—	—	—	<i>n</i> =6 Dillon ¹⁰⁶ ; Werbach and Moss ¹⁰⁴ ; Micozzi and Lowdog ⁶³ ; Hudson ⁶⁷ ; Leach ⁷² ; Trickey ⁷⁴	—	—
Vitamin B3	—	—	—	<i>n</i> =7 Dillon ¹⁰⁶ ; Werbach and Moss ¹⁰⁴ ; Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ ; Osiecki ⁹⁷ ; Hudson ⁶⁷ ; Leach ⁷²	—	—

(continued)

TABLE 3. (CONTINUED)

Nutritional medicines	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
Vitamin B6	—	—	—	<i>n</i> = 8 Dillon ¹⁰⁶ ; Wharton ¹⁰⁸ , Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ , Northrup ⁶⁵ ; Osiecki ⁹⁷ ; Leach ⁷² ; Trickey ⁷⁴	—	—
Vitamin C	—	<i>n</i> = 9 Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ , Osiecki ⁹⁷ ; Kirschmann ¹⁰⁹ , Hudson ⁶⁷ ; Murray and Pizzorno ¹⁰¹ ; Pizzorno and Murray ⁸⁶ ; Hechtman ¹⁰³ ; Pizzorno et al. ⁸⁷	—	<i>n</i> = 5 Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ , Osiecki ⁹⁷ ; Hudson ⁶⁷ ; Hechtman ¹⁰³	—	<i>n</i> = 7 ¹⁰⁶ . Werbach and Dillon ¹⁰⁴ ; Kaur et al. ⁶⁴ , Osiecki ⁹⁷ ; Hudson ⁶⁷ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷
Vitamin E	—	<i>n</i> = 13 Atkinson ¹¹² ; Dillon ¹⁰⁶ , Gladstar ⁸³ ; Ostrzenski ⁶⁰ ; Kaur et al. ⁶⁴ ; Northrup ⁶⁵ ; Osiecki ⁹⁷ ; Kirschmann ¹⁰⁹ ; Hudson ⁶⁷ ; Trickey ⁷⁴ ; Murray and Pizzorno ¹⁰¹ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷	—	<i>n</i> = 17 Dillon ¹⁰⁶ ; Wharton ¹⁰⁷ , Wharton ¹⁰⁸ ; Werbach and Moss ¹⁰⁴ ; Micozzi and Lowdog ⁶³ ; Kaur et al. ⁶⁴ ; Northrup ⁶⁵ ; Osiecki ⁹⁷ ; Hudson ⁶⁷ ; Braun and Cohen ⁷⁰ ; Leach ⁷² ; Romm ⁷³ ; Hechtman ¹⁰³ ; Sarris and Wardle ¹	—	<i>n</i> = 4 Dillon ¹⁰⁶ ; Kaur et al. ⁶⁴ , Northrup ⁶⁵ ; Osiecki ⁹⁷
Vitamin K	—	—	—	—	—	<i>n</i> = 6 Murray ¹⁰⁵ , Kaur et al. ⁶⁴ , Hudson ⁶⁷ ; Trickey ⁷⁴ ; Pizzorno and Murray ⁸⁶ ; Pizzorno et al. ⁸⁷

from traditional sources and the earliest source being from 1991.¹⁰⁶

Nutritional recommendations for menorrhagia were less commonly reported, with a total of 14 nutritional medicines. The most frequently identified treatments were vitamin A ($n=7$) and vitamin C ($n=7$) followed by vitamin K ($n=6$), bioflavonoids ($n=5$), vitamin E ($n=4$), and eicosapentaenoic acid/docosahexaenoic acid ($n=3$). Other less common recommendations included chlorophyll tablets ($n=2$), flaxseed oil ($n=1$), γ -linolenic acid ($n=1$), and kelp ($n=1$). All of the recommendations for nutritional medicines for menorrhagia were identified in the contemporary sources (texts: $n=11$; periodicals: $n=2$) from 1982 to 2016.

Homeopathic remedies

Table 4 displays the homeopathic remedies for dysmenorrhea, menorrhagia, and endometriosis. There were a total of 39 remedies recommended for dysmenorrhea. The most common was *Nux vomica* (*nux-v.*) primarily seen in traditional sources,^{38,39,49,110} with one occurrence in a contemporary periodical from 1995.¹⁰⁷ *Sepia officinalis* (*sep.*) was also more likely to be reported in the traditional sources with three between 1885 and 1898^{35,39,40} and one contemporary source from 2002.⁶⁰ *Belladonna* (*bell.*) and *Chamomilla* (*cham.*) were reported during 1926–1995.^{107,110,115}

Similar to dysmenorrhea, there were 40 homeopathic remedies for menorrhagia. The most common were *Apis mellifica* (*apis.*),^{38,43,116} *Ipecacuanha* (*ip.*),^{39,110,115} *Alettris farinosa* (*alet.*),^{64,75} *Carbo vegetabilis* (*carbo-v.*),³³ and *Crocus sativus* (*croc.*)^{110,115}; *A. mellifica* (*apis.*)^{38,43,116} and *Ipecacuanha* (*ip.*)^{39,110,115} were identified across the same sources (traditional texts: $n=2$; contemporary text: $n=1$). *A. farinosa* (*alet.*) was the only remedy without recommendations from the traditional sources,^{64,75} while *Carbo vegetabilis* (*carbo-v.*) had two recommendations from one traditional text³³ and no recommendations from contemporary sources.

Seven homeopathic remedies were identified across two contemporary texts^{64,109} for the management of endometriosis. There were no recommendations of homeopathic remedies from the traditional sources.

Hydrotherapy

Table 5 displays the recommendations for hydrotherapy for dysmenorrhea and menorrhagia. The application of hydrotherapy for dysmenorrhea was found in 10 sources, including 1 contemporary text⁷³; 3 contemporary periodicals^{79,117,118}; 3 traditional texts^{35,119,120}; and 3 traditional periodicals.^{121–123} From these 10 sources, there were 7 hydrotherapy treatments for dysmenorrhea. The most common treatments included a hot bath,^{73,79,121} a hot sitz bath^{79,117,119} and a warm bath.^{35,119,120} Also identified were enemas¹²² and hot water compresses.⁷³ Hydrotherapy treatments were found in sources published between 1885 and 2010 during which time the main treatments recommended in both traditional and contemporary resources were hot baths^{73,79,121} and the hot hip/sitz baths,^{79,117,119} while the warm baths were no longer recommended within the contemporary sources.

Eight hydrotherapy treatments were identified for menorrhagia in one contemporary text,¹²⁴ one contemporary periodical,¹²⁵ five traditional texts,^{33,120,126–128} and two traditional

periodicals.^{121,129} From these sources, treatments included a vaginal douche,^{33,128} a cold compress,^{120,128} a cold sitz bath,^{124,125} a cold bath,¹²⁷ and a hot enema.¹²⁹ These recommendations were found in sources published between 1881 and 1988. The use of the cold bath was used during the earlier part of the 20th century,¹²⁷ while a cold sitz bath was recommended in the later part of the 20th century.^{124,125}

There were no recommendations of hydrotherapy for endometriosis.

Chemical-based medicines

Table 6 displays commonly identified chemical-based medicines for dysmenorrhea and menorrhagia. In the context of this article, chemical-based medicines refer to chemical substances and compounds that were used as treatments in these conditions. A total of 15 chemical-based medicines were found for dysmenorrhea. The most common were quinine sulfate,^{29,44} ammonium acetate,^{38,44} borax,^{40,49} cerium oxalate,^{40,49} and ether.^{38,49} These recommendations come from five traditional texts^{29,38,40,44,49} from 1856 to 1922.

Chemical-based medicines for menorrhagia were reported across six traditional texts^{29,32,33,38,44,49} and one traditional periodical.¹³⁰ These included nine chemical-based medicines such as gallic acid,^{33,38} acidum tannicum,⁴⁹ ammonia,²⁹ berberine sulfate,¹³⁰ and hydrastininiae hydrochloras.⁴⁴ These medicines were recommended in traditional sources during 1856–1922.^{29,49}

There were no recommendations for the treatment of endometriosis with chemical-based medicines.

Discussion

Evolution of naturopathy

This is the first article to describe naturopathic treatments for the management of endometriosis, dysmenorrhea, and menorrhagia, drawing on traditional and contemporary sources. The results suggest that naturopathic practice has a rich history of multiple disciplinary treatments used to manage these conditions, but changes in treatments over time provide evidence that naturopathic practice is continually evolving. Upon its formation, naturopathy incorporated the Nature Cure practice, defined as a system of health care which treated disease with hydrotherapy, fresh air, and wholesome food,¹³¹ as well as the incorporation of other “natural” therapies such as herbal medicine and homeopathy.² Although based on preexisting European traditional medicine systems, during the earliest part of the 20th century, naturopathy became formalized as Benedict Lust and began to modernize the profession through the establishment of qualifications which continued to expand its curriculum to include science, physiotherapy, herbal medicine, and a broad range of therapies that were considered amenable to naturopathic philosophy of healing,² particularly *vis medicatrix naturae* (healing power of nature).¹³² Naturopathy, particularly in America, continued to absorb such treatments,^{132–134} with some influences from eclectic medicine,^{2,135} as well as Lindlahr’s theories on the practice of using food as medicine.² The influence of naturopathic predecessors continues even in the absorption of modern therapies (such as clinical nutrition) and suggests elements of naturopathy as a living system of health care through its

TABLE 4. TOP 5 HOMEOPATHIC REMEDIES AND NUMBER OF RECOMMENDATIONS ACROSS THE CONTEMPORARY AND TRADITIONAL SOURCES

Homeopathy	Endometriosis		Dysmenorrhea		Menorrhagia	
	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations	Traditional recommendations	Contemporary recommendations
<i>A. farinosa</i> (alet.)	—	—	—	—	—	<i>n</i> = 2 Kaur et al. ⁶⁴ , Wood ⁷⁵
<i>Apis mellifica</i> (apis.)	—	—	—	—	<i>n</i> = 2 Locke and Felter ³⁸ , Felter and Lloyd ⁴³	<i>n</i> = 1 Koegler ¹¹⁶
Belladonna (bell.)	—	—	<i>n</i> = 1 Melendy ¹¹⁰	<i>n</i> = 2 Minton ¹¹⁵ ; Wharton ¹⁰⁷	—	—
Carbo vegetabilis (carbo-v)	—	—	—	—	<i>n</i> = 2 Scudder ³³	—
Chamomilla (cham.)	—	—	<i>n</i> = 1 Melendy ¹¹⁰	<i>n</i> = 2 Minton ¹¹⁵ ; Wharton ¹⁰⁷	—	—
<i>C. racemosa</i> (cimic.)	—	<i>n</i> = 1 Kaur et al. ⁶⁴	—	—	—	—
<i>Crocus sativus</i> (croc.)	—	—	—	—	—	—
Folliculinum (foll.)	—	<i>n</i> = 1 Kaur et al. ⁶⁴	—	—	<i>n</i> = 1 Melendy ¹¹⁰	<i>n</i> = 1 Minton ¹¹⁵
Ipecacuanha (ip.)	—	—	—	—	—	—
Kalium phosphoricum (kali-p.)	—	<i>n</i> = 1 Kirschmann ¹⁰⁹	—	—	—	—
Luteinum (lutin.)	—	<i>n</i> = 1 Kaur et al. ⁶⁴	—	—	—	—
Magnesium phosphoricum (mag-p.)	—	<i>n</i> = 1 Kirschmann ¹⁰⁹	—	—	—	—
Nux vomica (nux-v.)	—	—	<i>n</i> = 4 Locke and Felter ³⁸ , Watkins ³⁹ ; Felter ⁴⁹ , Melendy ¹¹⁰	<i>n</i> = 1 Wharton ¹⁰⁷	—	—
Rhus toxicodendron (rhus-t.)	—	—	<i>n</i> = 2 Scudder ³³ ; Watkins ³⁹	<i>n</i> = 1 Minton ¹¹⁵	—	—
<i>Sepia officinalis</i> (sep.)	—	—	<i>n</i> = 3 Goss ³⁵ ; Watkins ³⁹ , Webster et al. ⁴⁰	<i>n</i> = 1 Ostrzenski ⁶⁰	—	—
Silicea terra (sil.)	—	<i>n</i> = 1 Kirschmann ¹⁰⁹	—	—	—	—
Thiosinaminum (thiosin.)	—	<i>n</i> = 1 Kaur et al. ⁶⁴	—	—	—	—

TABLE 5. TOP 5 HYDROTHERAPY TREATMENTS AND NUMBER OF RECOMMENDATIONS ACROSS THE CONTEMPORARY AND TRADITIONAL SOURCES

<i>Hydrotherapy</i>	<i>Dysmenorrhea</i>		<i>Menorrhagia</i>	
	<i>Traditional recommendations</i>	<i>Contemporary recommendations</i>	<i>Traditional recommendations</i>	<i>Contemporary recommendations</i>
Cold bath	—	—	<i>n</i> = 1 Kuhn ¹²⁷	—
Cold compress	—	—	<i>n</i> = 3 Juettner ¹²⁰ ; Juettner ¹²⁸	—
Cold sitz bath	—	—	<i>n</i> = 2 Dixon ¹²⁵ ; Boyle and Saine ¹²⁴	—
Enema	<i>n</i> = 1 Stretch ¹²²	—	<i>n</i> = 1 Unknown Author ¹²⁹	—
Hot bath	<i>n</i> = 1 Tilden ¹²¹	<i>n</i> = 2 Wharton ⁷⁹ ; Romm ⁷³	—	—
Hot compress	—	<i>n</i> = 1 Romm ⁷³	—	—
Hot sitz bath	<i>n</i> = 1 Schilling ¹¹⁹	<i>n</i> = 2 Lust ¹¹⁷ ; Wharton ⁷⁹	—	—
Vaginal douche	—	—	<i>n</i> = 3 Scudder ³³ ; Juettner ¹²⁸	—
Warm bath	<i>n</i> = 3 Goss ³⁵ ; Juettner ¹²⁰ ; Schilling ¹¹⁹	—	—	—

continued adaption and sharing of cultural medicine.¹³⁶ Differences in treatments suggest that naturopathy appears to be continually evolving, as it appears that the boundaries of the profession are not fixed. This can be reflected in the contested boundaries of knowledge of the profession¹³⁶ which are constantly debated and redefined within the profession of what it means to be a naturopath and what disciplines are considered to be naturopathic. This could also be defined by the influence of professional elites or groups within naturopathy that steer or influence practice, as has occurred similarly in other CM professions.¹³⁷ Given that

one of the common criticisms of traditional medicine systems is their fixed systems and that they do not evolve when faced with new evidence,¹³⁸ their research suggests that significant differences in common treatments over time have occurred; however, further scholarly work is needed to examine the evolution and factors that influence such changes.

Continuity in the use of herbal medicine

Herbal medicine was the only treatment which displayed a long history and continued inclusion in contemporary

TABLE 6. TOP 5 CHEMICAL-BASED MEDICINES AND NUMBER OF RECOMMENDATIONS ACROSS TEXTS

<i>Chemical-based medicines</i>	<i>Dysmenorrhea Traditional recommendations</i>	<i>Menorrhagia Traditional recommendations</i>
Acidum tannicum	—	<i>n</i> = 1 Felter ⁴⁹
Ammonia	—	<i>n</i> = 1 King ²⁹
Ammonium acetate	<i>n</i> = 2 Locke and Felter ³⁸ ; Felter and Lloyd ⁴⁴	—
Berberine sulfate	—	<i>n</i> = 1 Unknown Author ¹³⁰
Borax	<i>n</i> = 2 Webster ⁴⁰ ; Felter ⁴⁹	—
Cerium oxalate	<i>n</i> = 2 Webster et al. ⁴⁰ ; Felter ⁴⁹	—
Ether	<i>n</i> = 2 Locke and Felter ³⁸ ; Felter ⁴⁹	—
Gallic acid	—	<i>n</i> = 2 Scudder ³³ ; Locke and Felter ³⁸
Hydrastininæ hydrochloras	—	<i>n</i> = 1 Felter and Lloyd ⁴⁴
Quinine sulfate	<i>n</i> = 4 King ²⁹ ; Felter and Lloyd ⁴⁴	—

sources. This supports the view from leading international organizations such as the World Naturopathic Federation that herbal medicine is a popular therapeutic tool for naturopathic practice.¹³⁹ However, specific herbs prescribed for these conditions have changed over time, and there may be varying reasons for this. Some variations may indicate that herbal medicine use is highly influenced by cultural setting, for example, *V. agnus-castus* has been used in European practice for menstrual irregularities¹⁴⁰; however, it was not identified in the traditional sources from Australia and North America, yet it is included in most modern texts. This suggests it is possible that contemporary naturopathic practice is being influenced by increased naturopathic global collaboration and research.^{141,142} Additional reasons for changes in herbal prescribing can also include that some herbs are known for safety issues (such as in the case of *C. ipecacuanha*¹⁴³ and *A. Belladonna*^{77,144}) and have since been superseded by other herbs with a more favorable safety profile. Again, these developments suggest that naturopathic medicine is not a static profession, but one that is continually progressing.

Adoption of clinical nutrition treatments

While herbal medicine has had a long-standing position in naturopathic practice, clinical nutrition has been adopted into naturopathy more recently. Clinical nutrition is a universal term that is used by primary health care professions, including those described as CM,¹⁴⁵ referring to the principle that micronutrients are required for biochemical metabolism,¹⁴⁶ which can be sourced from food and supplementation to optimize health or correct pathologies.¹⁴⁵ The concept of nutritional medicine was not well recognized until the mid 18th century where science began to investigate nutrition.¹⁴⁷ Over the past half a century, clinical nutrition has evolved rapidly; however, it wasn't until 1985 when the Institute of Medicine recommended the integration of nutrition into medical school curriculum.¹⁴⁸ Despite these recommendations, there has been some resistance by medical schools to meet the recommended minimum curriculum requirements, which has led to a need to advocate its importance in conventional practice.¹⁴⁹

While clinical nutrition has faced this difficulty, it has been embraced by the naturopathic profession, with recommendations for treatments for endometriosis, dysmenorrhea, and menorrhagia over the contemporary period forming a major element of naturopathic practice, even where it was relatively absent in traditional texts. While nutritional medicine was not one of the founding practices for naturopathy, it appears that it has been incorporated as an important aspect of treatment within contemporary naturopathic education and practice as part of the evolution of the profession.¹³⁴

Evolution of other naturopathic treatments

In contrast to the increased scope of herbal and nutritional medicine, a number of once-dominant modalities have since decreased or become nonexistent in contemporary naturopathic medicine. Chemical-based medicines were originally incorporated into naturopathy through eclectic medicine influences and largely ceased to exist in modern naturopathic treatments, most likely due to the advancement in research and clinical knowledge that many of these sub-

stances are poisonous or have safety concerns (such as the substance Ether¹⁵⁰). Hydrotherapy was historically an important treatment in naturopathy; yet, based on this research its contemporary application appears to be significantly reduced. This may be due to a number of factors; in the Australian context, changes in the course delivery models in the 1980s are thought to be largely responsible,¹⁵¹ with hydrotherapy gradually being removed from the curriculum in favor of ingested medicines.¹⁵² Similarly, homeopathy was once a dominant treatment in naturopathic practice²; however, its application in these conditions in contemporary texts is limited in comparison to other treatments. Additional factors outside of the profession—for example, the controversy surrounding the scientific validity of homeopathy—may also have an influence on the limited contemporary use of homeopathy.¹⁵³

Endometriosis as a contemporary health condition

Endometriosis is a complex disease that has a nebulous historical diagnosis and continues to face challengers relating to diagnosis and scientific understanding.¹⁵⁴ Additional challengers relate to current diagnostic processes,¹⁵⁴ social stigmatization of menstruation, delay in diagnosis, and most notably the difficulties women face in receiving care, often due to limited medical understanding from primary health care professionals.^{14,154} In the context of this research, the ambiguous history of the disease may be reflected in the absence of recommendations across traditional sources. While a large number of herbal medicines were identified for the treatment of dysmenorrhea and menorrhagia, there was a notable absence of herbal medicines—or any other treatment—listed for endometriosis from traditional sources. Absence of treatments for endometriosis may not reflect naturopathy ignoring this condition, but may highlight its ambiguous nature and the historical observations in misdiagnosis noted in history,¹⁵⁴ or may reflect a traditional diagnostic pattern that does not align with conventional diagnosis. Endometriosis is considered to be a relevantly new disease, which is commonly overlooked by conventional health care professionals,¹⁴ and issues with diagnosis continue to exist. Exploring traditional treatment patterns around symptoms consistent with endometriosis may provide insights into the traditional concept of endometriosis in naturopathic practice and may provide insights into modern endometriosis management.

Future Research and Limitations

This project is not without limitations. First, the study design has its own disadvantages in terms of its subjective nature and lack of representativeness.¹⁵⁵ In addition, this list of naturopathic sources may not be considered an exhaustive list as some sources may have been missed due to lack of availability at the time of data extraction and many of the traditional periodicals were incomplete volumes or were missing pages. While this project identifies a robust history of treatments used in dysmenorrhea, menorrhagia, and some cases for endometriosis, it does not provide the details on how this was translated to practice and what actually occurs in naturopathic practice, and as such additional research in this area is warranted. Doing so may identify additional complementary treatments that are beneficial to women

suffering with these reproductive conditions. In addition, as this article describes the treatments recommended for the discussed conditions over a period of time, further research investigating the evolution of treatments could be warranted.

This research also has implications to education and practice. In particular, the findings of this research may prove valuable to educators involved in the design and delivery of naturopathic curriculum, particularly in terms of ensuring that naturopathic students and practitioners are receiving education as they respond to internal and external demands for naturopaths to engage with evidence-based practice. For example, as discussed in this article, various chemical medicines ceased being used in the treatment of these menstrual conditions, possibly due to the safety concerns associated with such treatments. While in the case for herbal medicine, the changes over time may be due to an increase in the evidence base and scientific understanding of the mechanism of action. Equally, clinicians and professional leaders may benefit from the deeper understanding of the changing treatment approach of naturopathy over the last 200 years as it relates to current naturopathic practice. Their findings may also assist researchers examining the women's menstrual health complaints encompassed by this study or naturopathic medicine more broadly, by highlighting treatments that may warrant closer empirical study.

Conclusions

The findings of this article provide insights into the documented historical and contemporary naturopathic treatments for endometriosis, dysmenorrhea, and menorrhagia. While philosophical principles remain the core of naturopathic practice, the therapeutic armamentarium appears to have changed and a number of the original naturopathic treatments appear to have been retained as key elements of treatment for these conditions. Such insights into naturopathic treatments will be of interest to clinicians providing care to women, educators delivering naturopathic training, and researchers conducting clinical and health service naturopathic research.

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