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Research paper

Uses and experience of highly standardised plant medicine extracts by UK medical herbalists

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ABSTRACT

Introduction: Traditionally Western Herbal Medicine (WHM) uses 'whole plant extracts', typically presented as liquids, teas and powders, with no formal measurement of identified plant constituents. In contrast, 'standardised extract' preparations offer a guaranteed minimum content of specified constituents, as identified in modern research. A limited number of these preparations, referred to here as 'highly standardised extracts' and largely presented as tablets, offer a much higher dose of 'active constituent/s' than is present in the whole plant extract. They are the focus of this study. The study investigated how herbalists have come to use highly standardised extracts and their attitudes towards them, with a view to informing the debate and the wider interested community.

Methods: An online survey, a mix of quantitative and qualitative questions, was distributed by UK herbalists' professional bodies to members.

Results: Findings from a total of 78 respondents indicate that there is limited but clear use of single highly standardised extracts by a large minority of participants, with use influenced mainly by the growing body of research, historical influence of other herbalists and clinical evidence of 'strength'. All herbalists reported accessing herbal research studies. The major identified limiting factor on highly standardised extract use was the strong emphasis on the 'natural' whole plant extract.

Conclusion: This survey indicated a strong focus of responding herbalists on the use of the natural whole plant extract. Despite limited use of research-based highly standardised extracts, all reported engagement with research. It is acknowledged that response bias limits strength of conclusions.

Introduction

This introduction contextualises the study, which is important for understanding the complex current and historical issues at stake for practicing herbalists in the UK.

Whole plant extracts and highly standardised extracts

Practitioners of Western Herbal Medicine (WHM) have historically used 'whole plant extracts' on the basis of a traditional knowledge (TK) of herbal medicines, which are typically dispensed as liquid extracts (such as tinctures), teas and powders. In practice, several herbs are combined for a patient after an assessment of their condition and needs by the herbalist. In addition, several individual herbs are available in the form of 'highly standardised extracts', developed from modern research studies. Presented largely in tablet form, they offer a much higher dose of identified 'active' constituent or constituents than are present in the whole plant. Examples meeting the definition here of highly standardised extract are preparations from *Curcuma longa* (turmeric) rhizome, *Silybum marianum* (milk thistle) seed, *Ginkgo biloba* leaf and *Serenoa serrulata* (saw palmetto) berry. The focus of this study is the use of highly standardised extracts by UK practitioners of WHM which has historically been controversial due to perceived differences between highly standardised extracts and whole plant extracts. This important issue has been widely discussed in the literature (Evans, 2008; Waddell, and Nissen, 2016, 2015, 2010) but there is as yet no published data on prescribing choices and only anecdotal evidence. So little is known in the context of herbal practice in the UK and this study aims to offer some initial evidence informing this particular issue.

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Historical relationship of western herbal medicine with research and research-based highly standardised extracts

WHM is largely practised around the 'Western' world in Australia, Canada, New Zealand, the United Kingdom, the United States and Western Europe but as a practice it has long been only loosely defined (Niemeyer et al., 2013; Waddell, 2016). In the UK, it was somewhat distinguished in the 1990s from other herbal traditions present in the West, such as Traditional Chinese Medicine (TCM), Ayurvedic medicine or Tibetan medical systems, as using plants largely native to Europe, within a philosophical tradition arising from European thought (Nissen, 2010, 2015). The formation in 1864 of the leading WHM professional association (PA) in the UK, the National Institute of Medical Herbalists (NIMH), previously The National Association of Medical Herbalists (NAMH), started the formalisation of WHM as a type of medical profession. This contrasts with the common image of herbalists being simple purveyors of herbs. It took WHM away from non-scientific 'folk medicine' in the year of publication of the first British Pharmacopoeia, commissioned by the General Medical Council after its establishment under the Medical Act 1858 which sought to distinguish qualified from nonqualified medical practitioners (Shelley, 2014; Wahlberg, 2010). Among the core aims of the NAMH were the study of and research into herbal medicine. TK has at least from the mid-twentieth century started to give way to 'phytotherapy' (Nissen, 2010). This is a term used especially among European doctors with specialist herbal medicine training to denote a more scientific knowledge and practice based on research into plant medicines from across the globe, their phytochemistry and pharmacological constituents. These studies supported the development of research-based herbal preparations such as highly standardised extracts. These products are manufactured to guarantee the presence and quantity of key constituents, aiming to ensure their safety and reliability. They contrast with the natural variability of constituents in whole plant extracts, due to differences such as plant location, growing conditions and harvesting practices. There is a large and increasing body of studies into plant medicines, but a lack of practice-based research of UK herbalists (Lorenc et al., 2018). Modern health research underpinning the Evidence-Based Medicine (EBM) of the last thirty years has necessitated the standardisation of herbal medicines for research purposes; this contrasts with the methods and materials of the TK stance that has informed WHM practice. In this way modern research has been controversial for parts of the WHM community. There is perceived incompatibility of most published research studies in informing the commonly practised traditional form of WHM. Knowledge obtained from the scientific methods of EBM contrasts with TK which draws on reports from clinical practice. More practically, tableted highly standardised extracts are not readily incorporated into a typical herbal prescription.

The focus on EBM methods and a growing body of plant research historically provided the opportunity for WHM to assert itself as a recognised profession in the face of challenges from lawmakers and the medical profession. UK herbal PAs pursued statutory regulation recommended in a House of Lords Science and Technology committee report (Conway, 2005; Day, 2007; HoL, 2000; Nissen, 2010). Others viewed this engagement with the methods of modern medicine as part of a 'survival' strategy (Waddell, 2016) by some herbalists' leaders and PAs to increase public acceptance and approval and enhance the professional image of WHM (Conway, 2005; VanMarie, 2002). The aim was to separate the image of WHM from the existing traditional approach, rooted in folk medicine. The 'virtues' of herbs listed in old herbals moved towards the scientific currency of monographs in a herbal pharmacopoeia. The adoption of more conventional explanations of herbal therapeutic actions (Evans, 2008; Griggs, 1997; Nissen, 2010) was described by Treasure (2014) as akin to a Kuhnian paradigm shift. Other initiatives in the development of evidence-based herbal medicine included the creation of new journals of herbal medicine, a widely used textbook on herbal practice, and a core curriculum to advise the leaders of the new university-based BSc Herbal Medicine courses and graduate entry into the PAs. A history of 'modernising' influences on WHM are considered by Waddell (2016) to have moved the profession away from the traditional focus on whole plant extracts, rather dwelling on professional skills and research. Indeed, he notes that currently detailed requirements for membership of the largest PA, NIMH (2021), 'barely mentions herbs' (p.25), but rather focuses on more general professional skills. The advance towards statutory regulation and professional legitimacy continued until it too came to an abrupt end in 2015 when the chair of a government working group looking to establish statutory regulation drew up a report against such a move (Walker, 2015) and effectively proposed the status quo of a voluntarily-regulated profession. In addition university courses were attacked by pressure groups subjecting vice-chancellors to freedom of information requests over the content of these courses only the Lincoln College BSc course survives.

Controversy of research and use of highly standardised extract use in western herbal medicine

Considering the differences in how evidence is generated from TK compared to research, a major concern is whether findings from typical modern gold standard randomised controlled trials (RCTs) can be usefully extended to WHM practice (Snow, 2016). Issues concern both the preparations used and the methods of investigation. Herbal preparations used in research studies typically contrast with traditional practice and the use of whole plant extracts. They may be highly standardised extracts, highly processed products or isolated active constituents. This does not allow for the perceived additional value of the complex, little-processed whole plant extract. It has delivered herbal knowledge based on 'products' or 'phytopharmaceuticals' made from plants rather than whole plant extracts or plants themselves (Evans, 2008; Jagtenberg and Evans, 2003; Nissen, 2015). Almost all RCTs employing the herbs discussed here as highly standardised extracts do indeed use such standardised preparations and therefore research evidence strictly only supports the use of those extracts. It has been proposed (Evans, 2008), that the evidence from research on highly standardised extracts should strictly only lead either to the use of those preparations in practice or whole plant extract doses that are equivalent to highly standardised extract doses studied. Research evidence is largely lacking for effects of the whole plant extract forms of these herbs. In addition, outcomes may focus on specific mechanisms of action. In WHM the focus is on the patient rather than the condition with individualised prescription of herbs, each patient receiving a tailored poly-herb preparation (as described by Nissen [2015] and Niemeyer et al. [2013]). Compared to the rational scientific basis of modern research, WHM practice may also incorporate the less scientific notions of vitalism and holism. The concept of vitalism (Lash, 2006) may be framed as '*life cannot be understood just through principles of physics and chemistry*' (Sheldrake, 1990, p79 in Evans, 2008) and holism as the '*…unity of (the) parts….*(is) *more than a sum of its parts*'; this quote allegedly originated from Aristotle (Nissen, 2011; Niemeyer et al., 2013; Sarraf Yazdy et al., 2019). Despite these fundamental differences between TK and the EBM approach, the relative lack of a central philosophical basis in WHM compared to other herbal traditions may leave it more open to the '*scientificization*' (Wahlberg, 2008) or medicalisation encouraged by the EBM approach. This may happen when a less firmly rooted philosophy is more easily over-ridden (Barry, 2006).

The controversy of highly standardised extracts is similar but somewhat distinct from those of general research. A central issue with highly standardised extract use is that it challenges a core tenet of traditional WHM practice, which is the longstanding use of 'natural' whole plant extract (Nissen, 2015) and the perceived benefit that this complexity brings (Niemeyer et al., 2013). Waddell (2016) investigating herbalists' thinking and practice, discussed the existence of these fundamentally different influences. He contrasted an academic

science-based approach with a non-scientific 'enchantment' with plants, which underlies the controversy of the highly standardised extract. As Wahlberg (2008) pointed out herbalists generally prefer the whole plant extract. Considering differences in the nature of these two types of preparations, complex whole plant extracts typically consist of hundreds of constituents that are believed by some to act together in largely unexplained (and maybe practically inexplicable) 'synergy', to achieve a desired outcome in the body (Avila et al., 2011). Niemeyer et al. (2013) discussed complexity in WHM, proposing that plants work synergistically with humans and more recently Bone (2021, p.18) quoted Gertsch (2011) in defining herbs as *''intelligent mixtures' ….shaped by evolutionary pressures'*. In addition, the quality of whole plant extracts is largely 'tested' by herbalists via organoleptics (using taste, smell touch and sight) and this is not possible with highly standardised extracts (Wahlberg, 2008; Waddell, 2016). Conversely, highly standardised extracts may be viewed by some as having less complexity, with a much greater concentration of a chosen chemical (or group of chemicals) which may have a specific desired effect in the body. Bone (2021, p.18) quoted Sharma (1997) in explicitly criticising the scientific focus on active constituents. It was suggested that this focus has developed, not as a strength of the scientific method, but rather a weakness. It may not be suited to work with such complex systems as whole plant extracts which defy the scientific requirements of measurement and control.

Relative lack of existing evidence for choice of highly standardised extract or whole plant extract

There is limited evidence to inform choice of highly standardised or whole plant extract by herbal practitioners. *C. longa* highly standardised extract may offer a convenient high dose or replication of research studies, but there is also evidence for historical use of the whole plant extract. Reviewed herbal texts focus more on the traditional lower dose whole plant extract for this herb that has been overwhelmingly adopted into WHM. Similarly *S. marianum* highly standardised extract may offer a convenient form for the recommended dose as used in research studies. Although the body of research is less compelling than for *C. longa*, use of *S. marianum* highly standardised extract is supported by a greater recommendation in a review of contemporary herbal texts than for *C. longa* highly standardised extract. There is only limited evidence of the influence of long traditional WHM use of low dose *S. marianum* whole plant extracts. Similarly *G. biloba* highly standardised extract also offers a high dose as used in research studies and is the most widely recommended highly standardised extract in herbal texts, rather than the whole plant extract. When recommended as the whole plant extract it is as a high dose 'equivalent' to the highly standardised extract and may not be practical to administer. This reflects a lack of traditional use for *G. biloba* leaf and therefore presumably rather a focus on research evidence, although that evidence is limited. Finally, *S. serrulata* highly standardised extract also has mixed research evidence for clinical use. The relatively low dose in studies may be conveniently replaced by the whole plant extract (e.g. as a powder or tincture), particularly since it has a continual history of traditional use supporting use of the whole plant extract. Given the level of debate over the use of whole plant and highly standardised extracts by herbalists, surprisingly few research studies have been conducted exploring this issue. Just one survey study by one of the researchers (SS) found a significant minority (40% of those surveyed) were using *C. longa* highly standardised extract for its perceived effectiveness and convenience. The study found little influence of research evidence underpinning that produce in herbal practice (Sprung, 2016). Building on this earlier study, we investigate the extent to which UK registered herbalists have come to use such highly standardised extracts and their attitudes towards them. For example, it is not clear to what extent herbalists use such extracts in practice or what the influences are for choices made, including how much research evidence is used. The aims, therefore, were to investigate if and why herbalists have come to use or not use highly standardised extracts in their practice.

Method

This paper reports on an online survey (see Supplementary Material) distributed to practising herbal practitioners. It formed the final part of a larger study involving Grounded Theory methodology with mixed methods research in an exploratory sequential design. Substantive theory about the topic of 'highly standardised extract' use was gained through individual interviews with herbalists. Thematic analysis was applied to the data and this formed the first part of the wider study; these findings will be reported on in a separate paper. Themes identified from interview data on how herbalists have come to use highly standardised extracts informed the development of the online survey questions reported on in this paper. Questions were largely closed-ended and quantitative in nature and most were limited to 20 words per question stem (Burns et al., 2008) being less cognitively demanding of participants (Holyk, 2008). Open text boxes were used for qualitative questions. Piloting was carried out by six herbalists to detect variance, flaws or obvious bias in questions, or answer options that may have affected reliability and validity of data. All herbalists carrying out the pilot completed it successfully and no suggestions were made for modification. The survey was therefore considered to have face validity. Participants were recruited from the body of UK herbalists who were members of one or more of the five UK professional associations (PAs) for herbalists that appeared on a Google search for 'UK Herbalist association'. These PAs were: The National Association of Medical Herbalists (NIMH), The College of Practitioners of Phytotherapy (CPP), The Unified Register of Herbal Practitioners (URHP), The Association of Master Herbalists (AMH) and The Association of Naturopathic Practitioners (ANP). PAs were requested to send the online link for the survey out directly to practising UK members via electronic newsletters. Reminders were sent in a subsequent newsletter and advertisements made on relevant Facebook forums. The survey was open in total for 4 months from March 16, 2020. Data analysis was facilitated by the JISC Online surveys software (JISC, 2021) and qualitative data analysed by the method of content analysis (Krippendorff, 2019). Analysis did not include inferential tests due to insufficient data but cross tabulations were explored. Ethical approval for this study was obtained from the University of Central Lancashire College of Health Peer Review Panel (STEMH 947). The study was carried out in accordance with UCLan Code of Conduct and ethical principles for research (UCLan, 2021a, b).

Results

A total of 78 responses were received after reminders and additional advertising on social media. It was not possible to reliably deduce an accurate response rate due to lack of clarity concerning numbers reached although a tentative figure of 16% was obtained by using numbers of practicing herbalists listed on 'find a practitioner' pages on PA websites. Furthermore it was not possible to carry out statistical analysis on the data due to the limited response. Available demographic details are shown in Table 1. The majority had qualified since 2000 (75.4%, n = 55/73) although decade of qualification showed no difference in use of highly standardised extracts. Most (43%, n = 32/74) saw between five and 14 patients weekly, although two reported seeing no patients and six over 30 or more patients. There was no identified link between number of patients seen weekly and highly standardised extract use. Respondents had qualified from a range of institutions with the College of Phytotherapy (26%, n = 19/74), Middlesex University (14%, n = 10/74), Lincoln University (12%, n = 9/74) and University of East London (11%, n = 8/74) being most frequently attended. Once again place studied did not influence use of highly standardised extracts. Seventy-three respondents indicated they belonged to one or more professional bodies: the NIMH (n = 56), CCP (n = 18), URHP (n = 7) and AMH (n = 5).

The majority of respondents were not using highly standardised extracts (69%, n = 54/78). When asked as to why they were non-users

Table 1
Demographic data for respondents.

Number of patients per week	0	1–4	5–14	15–30	30 +			
Number of responding practitioners (74 total replies)	2	23	32	11	6			
Decade qualified	*1970s*	*1980s*	*1990s*	*2000s*	*2010s*			
Number of responding practitioners	4	6	8	31	24			
Training course attended	*College of Phyto*	*Middlesex Uni.*	*Lincoln Uni.*	*Uni. of East London*	*Uni. of Westminster*	*Uni. of Central Lancashire*	*Scottish School of Herbal Medicine*	*Other courses*
Number of responding practitioners (74 total replies)	19	10	9	8	7	6	6	9
Professional association membership	*NIMH*	*CPP*	*URHP*	*AMH*				
Number of responding practitioners (75 total replies[1])	56	18	7	5				

AMH, association of master herbalists; CPP, college of practitioners of phytotherapy; NIMH, national institute of medical herbalists; URHP, unified register of herbal practitioners.
[1] n = 13 report being a member of two professional associations.

the overwhelming responses were 'they preferred to use the whole plant extract', because 'the whole is greater than the sum of the parts' or 'the constituents work synergistically'. They also showed scepticism toward highly standardised extracts, with comments such as 'I believe standardisation distorts the natural ratio of the plant's constituents'; 'lack of long-term safety data'; 'not as nature intended'; high cost was also mentioned. Those not currently using highly standardised extracts were asked if they had ever done so in the past. Of the 54 respondents currently not using, seven stated they had done so previously and included *C. longa* (n = 4), *G. biloba* (n = 2) and *S. marianum* (n = 2). Furthermore, 65% (n = 34/52) of non-users stated that they could imagine a clinical situation where they would use a highly standardised extract. Non-users were clear (81%, n = 42/52) that they were making informed choices and did not lack clarity over whether to choose a highly standardised extract or whole plant extract. Of note was the relationship between organisational membership and highly standardised extract use. No respondent who was a member of URHP or AMH was a current user of these preparations, and furthermore only two of these 12 members would consider future use. This is in contrast to NIMH and CCP members where approximately a third of memberships were currently using highly standardised extracts and of those not using them, over half would consider future use. For those currently using highly standardised extracts (31%, n = 24/78) a number of products were reported in response to the open-ended question (Table 2). Reasons for using a highly standardised extract were that they were more effective (n = 15/24), stronger (n = 10/24), easier for the patient to take (n = 10/24) and used for a specific action (n = 13/24). Respondents were also asked to rate a series of statements regarding their decision. Table 3 shows that published research (n = 22/23, 96%) and evidence from their own practice (n = 19/20, 95%) were the main 'strong or moderately strong' influencers on use of highly standardised extracts. Recommendation from other herbalists (n = 17/23, 74%) was also influential. Seminars, either from a herbalist (n = 14/19, 74%) or from manufacturers (n = 7/19), 37%) were least likely to shape their decision to use highly standardised extracts.

With regard to published research, respondents were asked what formal training they have had in their ability to assess research. 80% (n = 62/78) stated they had received prior training; for users of highly standardised extract this was 91% (n = 22/24) and 74% (n = 40/54) of non-users. No respondents reported never accessing research studies. The frequency by which journals were accessed was most commonly on a monthly basis (42%, n = 32/76). For users of highly standardised extracts this was 50% (n = 12/24) and for non-users 39% (n = 20/52). Daily access (17%, n = 6/24 for users; 10% (n = 5/52) for non-users) and weekly access (29%, n = 7/24; 40%, n = 20/52) was also reported. 4% (n = 1/24) of highly standardised extract users reported only yearly access; for non-users this was 14% (n = 7/52). Although published research influenced users of highly standardised extracts and they accessed materials frequently just 6 respondents (25% of n = 24) reported they used the highly standardised extract as per study recommendations. Very few respondents reported that patients had experienced side effects when given a highly standardised extract; no users of highly standardised extracts reported side effects. For non-users (from previous experience) this was 12% (n = 6/49) and side effects

Table 2
Most commonly used HSEs (numbers > n = 24 as some respondents listed multiple HSEs).

HSE Used	n
Turmeric (*C. longa*)	17
Milk thistle (*S. marianum*)	8
G. biloba	4
Resveratrol	2
Other	4

HSE, highly standardised extract.

Table 3
Influences on the decision to use HSEs.

	Strong influence	Moderate influence	Weak influence	No influence
Published research (n = 23)	16	6	1	0
Evidence from own practice (n = 20)	12	7	0	1
Recommendation from another herbalist (n = 23)	5	12	1	3
Seminar by another herbalist (n = 19)	7	7	0	5
Seminar by supplement company (n = 19)	1	6	7	5

HSE, highly standardised extract.

were observed with *C. longa* (n = 4), *G.biloba* (n = 1) and *S. marianum* (n = 1). No instances of side effects were formally reported (e.g. the Yellow Card Reporting System).

Discussion

Results from this online survey of UK professional herbalists suggest that those who use highly standardised extracts are in the minority, with 69% claiming they do not use them at all. Moreover, among those who do use them, this use is largely of a single extract (mostly *C. longa)* rather than using multiple products. Use of a chosen highly standardised extract is attributed to a perceived effectiveness or strength of the preparation and influenced by research evidence and recommendations from other herbalists. Highly standardised extract use does not appear to be affected by the length of time the herbalist has been in practice or the training course they attended but does seem to be associated with PA membership, particularly membership of CPP and NIMH. This pattern of use is reflected in orientations of individual PAs towards practice. CPP, with the greatest percentage of highly standardised extract users here is partly characterised by a focus on 'scientific developments' through research evidence, the use of these research-based preparations reflecting the PA's research focus. In contrast the URHP website does not mention herbal research and no members were identified who reported use of highly standardised extract; it rather calls on TK and the '*energetics of herbal medicine….based on recognition of the Vital Force within each living object*' (URHP, 2021). AMH also makes no reference to scientific research, rather referring to the 300-year-old American Eclectic tradition that similarly invokes the vital force (Evans, 2008). The vital force has been described as a '*Self-regulating and self-healing, creative, directive intelligence*' (Evans, 2008, p. 2101) that, under the umbrella of vitalism, cannot be understood through scientific principles (Evans [2008]). This notion of the vital force has been proposed by Canguilhem (Canghuilhem in Delaporte [1994]) to underly a low dose approach to herbal therapeutics; herbal medicines are used to support the vital force to achieve self-healing rather than using herbal medicine to '*directly counter pathological processes*' (Evans, 2008, p.2101). A low dose approach is therefore more suited to whole plant preparations than highly standardised extracts and it is therefore not surprising that URHP members would not use the latter. The contrasting use of highly standardised extracts in members of CPP and NIMH may therefore suggest a move away from notions of vitalism and the vital force but use here has been seen as very limited. It appears that highly standardised extract use (specifically *C. longa*) may be less widespread than previous findings from Sprung (2016) suggested where 40% of respondents reported use of highly standardised *C. longa* (largely the Lamberts Healthcare brand [Lamberts Healthcare Ltd, 2022]). Such historically higher use may have been a relatively short-lived phase related to several factors – the drive towards statutory regulation of the profession that may have encouraged the use of research-based products until its end in 2015 (Walker, 2015). Closure of all but one university-based BSc training courses may have also reduced the focus on EBM. In addition free Lamberts Healthcare seminars for healthcare professionals promoted their *C. longa* highly standardised products before the data from Sprung (2016). Despite suggestions of whole plant extract-using herbalists here engaging with notions of vitalism and the vital force, as reflected in URHP and AMH literature above, there is no mention of this from survey data. There was no explicit question about vitalism in the survey. Rather, questioning was exploratory and based on findings from the informative interview stage, yet offering unlimited explanation of major reasons behind choice of preparation in open-ended questions. The message that comes through strongly from the data for the limited use of highly standardised extracts is that of a preference for the 'natural' balance of the whole plant. This idea of a natural balance is associated with the concepts of holism or synergy and is a clear and strong reported focus for practice in this study, with the relative absence of other reported factors. Rather than reflecting ideas of vitalism and the vital force, the importance of the 'natural balance' may be more akin to other more recently identified aspects of herbal practice identified by Nissen (2015) and Waddell (2016), namely 'naturalness' and 'enchantment with herbs'. 'Naturalness' or 'shared humanity within the organic world' (Nissen, 2015, p.174) contrasts with the 'rational scientific order of modernity' (Nissen, 2015, p. 163). Nissen's interviewed herbalists reflected the difference between this natural approach to practice and modern biomedicine. The identified non-scientific 'enchantment' with herbs is referred to as a 'sensual affective energy', the senses being understood as important in engaging with and understanding the natural world (Abram, 1997; Waddell, 2016). This contrasts with rationalisation via scientific methods. 'Enchantment' with herbs was an identified path through which Waddell's (2016) interviewed herbalists entered the profession. It may be compared to Weber's (2004) 'disenchantment of the world', suggested by Sherry (2009) as engagement with the world 'losing its magic'. Together, these findings from the current study (as well as those from Nissen and Waddell) suggest a central importance of the 'natural', largely scientifically unexplained and undefined whole plants themselves, rather than other aspects of the loosely defined practice of WHM. It also offers an element of homogeneity in a profession that has been described as a 'mass of tensions' (Waddell, 2016, p.1). Having proposed this central focus of herbal practice on the use of the natural whole plant, which contrasts with the modern biomedical approach, reported engagement with research found here may be surprising. It is clear here that responding herbalists have not rejected the historically controversial notion of modern scientific methods but rather have embraced them. This is likely to have followed decades of research methods teaching in university herbalist education courses and engagement with research appears to have increased compared to previous studies (Nissen, 2015; VanMarie, 2002). There is no suggestion here that increased use of research studies is associated with increased use of highly standardised extracts. The focus on the natural whole plant remains strong, although it is not clear how engagement with research will influence practice in the future. As suggested by Wahlberg (2008), the modern scientific approach may have become 'normalised' with traditional herbalism, as also suggested by Waddell (2016). Reported engagement with research here by all respondents may reflect this position. However there is a suggestion of poor research-literacy since the large majority of respondents reported following highly standardised extract research with whole plant preparations. Issues of existing research-literacy may be further compounded by the end of the drive for statutory regulation of the profession reducing the focus on EBM and the closure of most BSc university-based training courses.

Strengths and limitations

The study offers limited but valuable initial information concerning use of highly standardised extracts by UK herbalists and attitudes towards practice. It contributes towards the small body of existing literature concerning UK herbal practice. Conclusions are tentative due to the low response rate. In general, response rates to online surveys of herbalists are highly variable but the current study compares favourably with a 2018 NIMH online survey that achieved an 18% response (NIMH, 2021). Another limitation of the study is that it is not considered feasible to assess how representative the responses are of the UK herbalist population, there being no existing demographic data to compare with. Although almost all respondents considered the study topic useful it may be argued that only those with an interest would be likely to respond.

Conclusion

In conclusion it appears that the majority of herbalists are committed to the use of only whole plant extracts, based on a preference for the natural balance of constituents. This seems to be the most important focus for herbalists here rather than more loosely defined theories of practice. Engagement with research evidence has only positively influenced highly standardised extract use in a minority. Such research evidence and other factors (e.g. recommendations from other herbalists and seminars) do not appear to have influenced the majority to use them, reflecting the strong commitment to a practice based on whole plant preparations. Despite the now decades-long history of scientific 'modernisation' of WHM and apparent engagement of herbal practitioners with research suggested here, there is little evidence of a movement away from the traditional use of whole plant extracts and both appear possible in current practice.

Ethics approval

Ethical approval for this study was obtained from the University of Central Lancashire College of Health Peer Review Panel (STEMH 947). The study was carried out in accordance with UCLan Code of Conduct and ethical principles for research.

Informed consent statement

Informed consent for participation in the online survey was understood to have been given by participants ticking the required consent box to confirm that they agreed with the terms of participation explained in the information sheet on the first page of the survey. This consent box represented question one of the survey.

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Author contributions

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Appendix A. Supporting material

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.hermed.2023.100742.

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