



An expert consensus-based guideline for the integrative anthroposophic treatment of acute gastroenteritis in children



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ABSTRACT

Objectives: Acute gastroenteritis is one of the major causes of hospital admission in childhood. The primary objective of the treatment is rehydration, but conventional drug therapies are limited. Therefore, several pediatricians supplement conventional treatment with complementary and alternative therapies. In the two German departments for pediatric integrative medicine, children suffering from an acute gastroenteritis are treated with supportive therapy based on anthroposophic medicine. However, up to now scientifically validated guidelines for these therapies are lacking.

Design: We consulted an expert pool of 50 physicians with expertise in anthroposophic medicine as well as pediatrics and invited them to participate in an online-based Delphi process. Results were analyzed by means of qualitative content analysis with two independent raters using MAXQDA. Using four rounds of questioning, a consensus-based guideline was developed.

Results: A strong consensus (> 90%) or consensus (> 75–90%) was achieved for 14 of 16 subsections. The guideline describes disease characteristics, the most useful diagnostics, drug as well as non-drug treatment recommendations and advises for a good physician-patient interaction.

Conclusion: The guideline will help clinicians, as well as family doctors, in their daily routine and make anthroposophic medicine more tangible for parents and health insurance companies.

1. Introduction

Complementary and alternative medicine (CAM) therapies are used by an average of 52% (5–90 %) of children in European countries.¹ A frequently used therapy form, particularly in German-speaking countries, is anthroposophic medicine.^{1,2} According to the Society of anthroposophic doctors in Germany (GAÄD; Gesellschaft anthroposophischer Ärzte Deutschland), 270 physicians provide anthroposophic medicine for children and adolescents.³ Additionally, a survey of 38 primary care physicians revealed that 41.8% of all prescribed medications are anthroposophic remedies, whereby 37.3% of these remedies are indicated for digestive and abdominal symptoms.⁴

Similar to classical European naturopathy, anthroposophic medicine makes use of herbal preparations as well as creative and movement therapies, and it extends the conventional medicine whilst considering

the human being in its diagnostic and therapeutic approaches.^{5,6} In contrast to naturopathy, the anthroposophic medicine is based on the spiritual philosophy of its founder Rudolf Steiner, so-called anthroposophy.⁵

In Germany, there are two departments for pediatric integrative medicine using anthroposophic therapies; the *Gemeinschaftskrankenhaus Herdecke* and the *Filderklinik* in Filderstadt.² In both pediatric departments, approximately 3000 patients are treated every year (2006–2015) and acute gastroenteritis (236 cases per year) is one of the most frequent diseases causing hospital admission.⁷

The treatment of an acute gastroenteritis (aGE) in childhood is mostly limited to hydration or rehydration as administration of pharmaceutical medication, such as antimotility drugs or antiemetics, are avoided due to the unfavorable risk-benefit ratio.⁸ In the German departments for pediatric integrative medicine, these patients receive a

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supportive anthroposophic treatment, which is based on long-term experience of expertized pediatricians.

A previously conducted systematic literature review⁹ revealed that in German literature several anthroposophic drugs such as Amara drops, Bolus alba comp., Chamomilla, China N oligoplex, Chinium arsenicosum, Cichorium/Pancreas comp., Colocynthis, Geum urbanum, Gentina comp., Gentiana stomach Globuli velati, Ipecacuanha, Levico, Magnesit, Nux vomica, Olivenit, Podophyllum, Potentilla erecta, Salix/Rhus comp., Taraxacum, Tormentilla, Veratrum album and Veratrum comp. are recommended for children suffering from aGE.^{10–14,9}

However, official guidelines or high quality studies (e.g. randomized controlled studies) for the use of anthroposophic therapies for aGE in childhood are lacking.⁹ Thus, we performed an online-based multi-step expert survey (Delphi process) to develop a guideline for the supportive anthroposophic therapies administered to pediatric inpatients suffering from aGE. The Delphi process is an accepted method used to gain consensus between experts of a field on issues with big variance or on issues with little information, particularly in medical research.^{15–17} It was also utilized for development of other medical guidelines, for example the guideline for clinical nutrition in inflammatory bowel disease.^{18–20}

2. Methods

To develop a consensus-based supportive guideline for the use of anthroposophic therapies in the treatment of aGE in children, an online-based Delphi process was performed. Therefore, a pool of 50 experts were selected and invited to join the anonymous multi-step online survey. The Delphi process was conducted between March 2017 and February 2018. We decided to develop a consensus-based guideline using the Delphi survey because development of an evidence-based guideline was impossible as studies investigating the efficiency of anthroposophic therapies are lacking. The Delphi survey is an iterative process with several rounds of questions, starting with open-ended questions and ending with the evaluation of the guideline.^{21,15} The process is illustrated in Fig. 1.

2.1. Pool of experts

The expert pool consists of physicians working in the German anthroposophic pediatric wards of the *Gemeinschaftskrankenhaus Herdecke* (n = 10) or the *Filderklinik* (n = 10) as well as resident pediatricians (n = 30). All of them have at least one year experience in the field of pediatric anthroposophic medicine.

2.2. Delphi process

The Delphi process is a multistep survey representing a consensus-based opinion of experts. The online survey tools LamaPoll and UniPark were used for the anonymous questioning of the experts. In the first round, experts received a questionnaire with six open questions regarding disease characteristics, disease course, severity, diagnostics, therapies, chances and risks and interaction between the physicians and the children and parents, respectively (see supplemental data 1). Data were analyzed by two independent raters by means of content analysis using MAXQDA and answers were extracted for the second round of questioning. Here, experts had to reply to a questionnaire consisting of 27 questions (see supplemental data 2). For most of the questions, we provided answer opportunities, which the experts could select by the drag and drop function. Subsequently, a first draft of the treatment recommendation was created based on the most frequent responses. The experts had to agree or disagree to the different subsections. In case of disagreement, they had to state their reasons. If a section reached < 75% agreement, we modified it and sent it again to the experts.

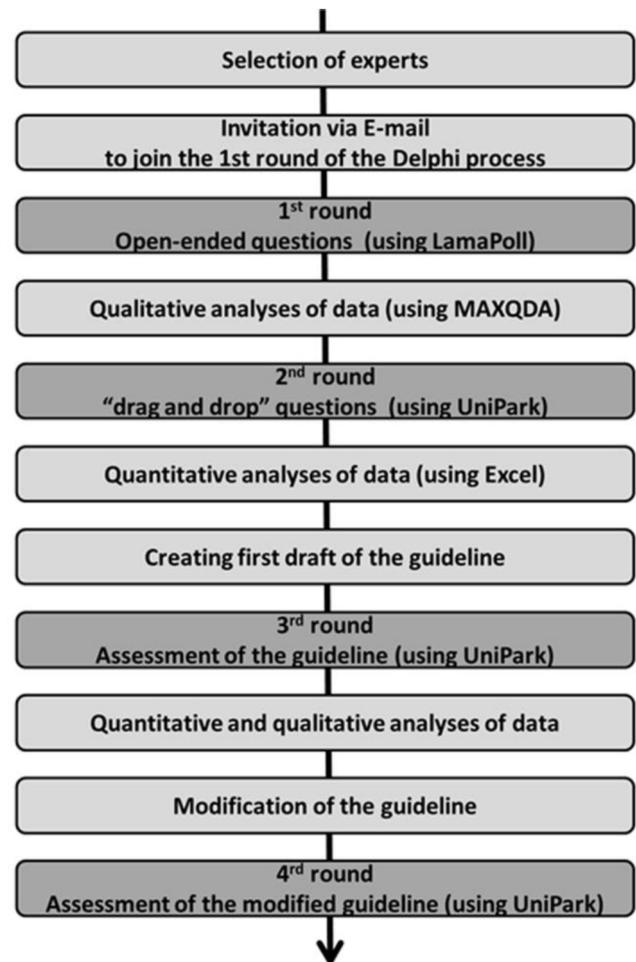


Fig. 1. Delphi process. Steps conducted by the authors and steps conducted by the experts are highlighted in light grey and dark grey, respectively.

2.3. Data analysis

Qualitative content analyses of open questions were conducted by using the MAXQDA software. Coding and interpretation of responses were performed by two independent reviewers. In case of discrepancies, a third reviewer was involved in the process. Moreover, quantitative analysis of response frequencies was performed.

2.4. Consensus assessment

Consensus was evaluated by the ESPEN consensus classification of consensus strength.¹⁸ Assessment of consensus was made by referring to the classification provided in Table 1.

2.5. Ethical approval

The survey procedure was assessed and approved by the local ethics commission of the University of Witten/Herdecke (179/2016).

Table 1
ESPEN classification for the strength of consensus.

Agreement of experts	Assessment
> 90 %	Strong consensus
> 75 %- 90%	Consensus
> 50 %-75 %	Majority agreement
< 50 %	No consensus

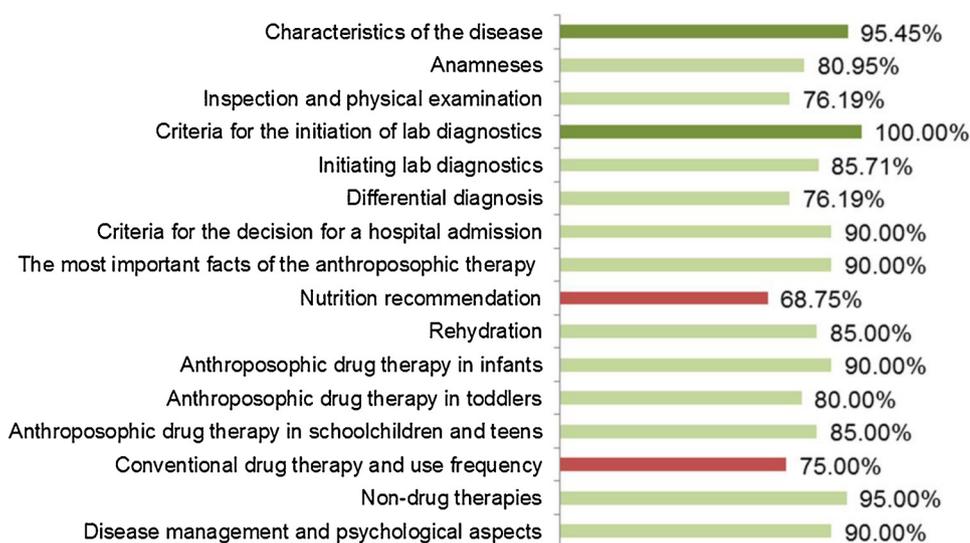


Fig. 2. Expert agreement to the developed guideline. Strong consensus (> 90%) and consensus (> 75%-90%) are indicated by dark green and light green bars, respectively. Parts reaching only majority agreement (> 50%-75%) are depicted by red bars (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article).

Table 2
Characteristics of aGE in childhood.

Characteristic	Description
Frequency of aGE in childhood:	Frequent
Duration of an uncomplicated aGE:	3-4 days
Duration of a complicated aGE:	5-7 days
Most reasons:	Noro-, Rota- or other viruses infection
Leading symptoms:	Diarrhea, vomiting and stomach cramps
Therapy relevant symptoms:	Vomiting, insufficient drinking, apathy, poor circulation, dizziness and reduced diuresis
Characteristics of a complicated course:	Somnolence, dehydration > 10%, electrolyte imbalance, acetonemic vomiting and poor circulation

Table 3
Anamnesis (Consensus: 80.95%).

Symptoms/complaints listed with decreasing relevance	Grading
Drinking behavior	Normal, slightly reduced, strongly reduced
Diuresis	Normal, slightly reduced, strongly reduced
Vomiting	Rarely, frequently (2-3 x daily), very often (2-3 x hourly)
Bloody stool	None, a bit, a lot
Disease duration	< 1d, < 3d, < 5d or > 5d
Tears	Due to crying: existent, non-existent

Table 4
Inspection and physical examination (Consensus: 76.19%).

Examination/Physiological parameters	Grading
Hydration condition	Normal, slightly reduced, strongly reduced
Peristalsis	Normal activity, increased, or others
Abdominal palpation	Soft, painful, tensed
Skin turgor	Normal or decreased
Pulse	Normal or increased
Blood pressure	Normal or decreased
Temperature	Normal, increased or decreased
Mucous membranes	Moist or dry
Eyes/orbita	Normal or periorbital dark circles
Weight	Unchanged, < 10% reduced, > 10% reduced
Pulse	Normal or increased

3. Results

3.1. Response rate

In the first round, 22 of 50 experts (40%) answered our

questionnaire. In the second and third round, the response rate was 66.7% (33 experts) and 40% (22 experts), respectively. In the last round, 16 participants were counted.

3.2. Treatment recommendation

Based on the mean results of the expert responses, we developed a guideline including data for disease characteristics, diagnostics, therapy, disease management and psychological aspects. A strong consensus (> 90%) was determined for “characteristic of disease” (95.45%), “criteria for the initiation of diagnostics” (100%) and “non-drug therapies” (95%). For the other parts of our guideline, a consensus (> 75%) was received except in the sections of “nutrition recommendation” (68.75%) and “conventional drug therapy and use frequency” (75%) (Fig. 2).

3.2.1. Characteristics of the disease (Consensus: 95.45%)

Disease characteristics are listed in Table 2.

3.2.2. Anamnesis and physical examination

Parameters relevant for the anamnesis as well as for the inspection and physical examination, respectively, are summarized in Table 3 and 4.

3.2.3. Diagnostics

Criteria for the initiation of a laboratory diagnostic (Consensus: 100%):

- Dehydration status
- General condition
- Somnolence
- Duration of symptoms

Table 5
Anthroposophic drug therapy indicated for the main symptoms of aGE.

	Infants (< 1 year) Consensus:90 %	Toddlers (1-5 years) Consensus:80 %	School children and teens (6-18 years) Consensus:85 %
Basic therapy	Remedy	Geum urbanum Rh D3 Dilution:	Bolus alba comp. powder
	Indication	Diarrhea	Diarrhea and abdominal pain
	Dosage	3-6 x daily 3 drops	½ teaspoon per glass of water, drinking in sips during the day
	Remedy	Nux vomica e semine D6 Globuli	Nux vomica e semine D6 Globuli
	Indication	Nausea and vomiting	Nausea and vomiting
	Dosage	3x daily 3 globuli	3-5x daily 5 globuli
	Remedy	Chamomilla Cupro culta, Radix Rh D3 Dilution	Colocynthis et fructibus D6 Globuli
	Indication	Abdominal cramps	Abdominal pain
	Dosage	3-6x daily 3 drops	5 globuli as required
Further remedies	Remedy	Bolus alba comp. powder (as an alternative for Geum urbanum, only for older infants)	Geum urbanum Rh D3 Dilution (if Bolus alba comp. is not applied)
	Indication	Diarrhea and vomiting	Diarrhea
	Dosage	½ teaspoon per glass of water, drinking in sips during the day	3-6x daily. 5 drops
	Remedy		Veratrum e radice D6 Globuli
	Indication		Poor circulation
	Dosage		3x daily, 5 globuli
	Remedy		Veratrum e radice D6 Globuli
		Poor circulation	
		3x daily, 5 globuli	
		Gentiana Magenglobuli	
		Nausea and vomiting	
		3 × 10 globuli	

Table 6
Anthroposophic non-drug therapies (Consensus: 90%).

Therapy approach	Indication	Dosage
Chamomilla oil compresses/liniments	Cramps and unrest	2-5 %
Fennel oil (<i>Foeniculum vulgare</i>) compresses/liniments	Abdominal cramps and flatulence	2-10 %
Caraway oil or tea compresses/liniments	Cramps with meteorism and flatulence	2-5 %
Hot water bottle or blanket	Avoid cooling	–

Initiated laboratory parameters (Consensus: 85.70%):
(Listed with decreasing relevance)

- Blood gas analysis, especially base excess and pH-value
- Electrolyte: Sodium, potassium and calcium
- Blood glucose
- Inflammatory parameters: CRP-value
- Hematocrit
- Kidney values

Differential diagnostic (Consensus: 76.19%):

- Appendicitis
- Invagination
- Hemolytic-uremic syndrome
- Meningitis or meningoencephalitis
- Angina tonsillar or other infections of the upper airways

Criteria for the stationary admission (Consensus: 90.00%):
(Listed with decreasing relevance)

- Dehydration
- Reduced general condition
- Opinion and compliance of the parents
- Unusual laboratory values
- Age

3.2.4. Therapy

The next section outlines the therapy options of the anthroposophic

supportive therapy including information about nutrition, rehydration, anthroposophic drug and non-drug treatment as well as the use of conventional drugs. In the supplemental (supplemental data 3) you find a summary of the anthroposophic therapy recommendation as a template for pocket card.

The most important facts of the anthroposophic supportive therapy (Consensus: 90%):

- Rehydration and hydration, respectively
- Anthroposophic medications
- Abdominal compresses or liniments
- Supplying or maintaining warmth
- Conscious nutrition

Nutritional recommendation (Consensus: 68.75%):

No general consensus- recommendation possible. We recommend an individual adapted procedure.

Rehydration (Consensus: 85%):

- The rehydration is mostly applied orally, to a lesser extent intravenously and rarely rectally.
- Oral rehydration solution:
- Ready to use glucose-electrolyte solutions (according to WHO recommendation with 13.5 g/l glucose, 2.6 g/l sodium chloride, 1.5 g/l potassium chloride and 2.9 g/l sodium citrate)
- Tea (e.g. fennel tea or chamomilla tea) supplemented with (grape) sugar and salt; for example, 150 ml tea, 1 teaspoon sugar and a pinch of salt
- Intravenous rehydration solution:

- Glucose-electrolyte solution

Anthroposophic drug therapy

An age-appropriate recommendation for anthroposophic drug therapy is represented in Table 5 and non-drug therapies are presented in Table 6.

Conventional drug therapy and use frequency (Consensus: 75%):

- Dimenhydrinat: occasionally – rarely applied
- Antibiotics: recommend for special cases
- Central affecting antiemetics (e.g. Granisetron, Ondansetron): rarely or never applied

3.2.5. Disease management and psychological aspects (Consensus: 90.00%)

What can parents and children learn from the disease?

- They learn to handle diseases and disease situations.
- Suffering from an aGE can show the parents that the natural way is a reliable option in treatment and that calm and care can contribute to the healing process.
- They can learn self-efficacy and healing: even if the child seems to be seriously ill, he/she can recover quickly.
- Development of confidence in the healing power of the child.
- They can learn about conscious handling with regards to food intake and regulation.
- They can learn to carefully handle with the meaning of life: hunger-appetite-satiety-feeling of fullness-nausea
- The parents can learn that the children need fluids but do not necessarily need food during the time of illness.

4. Discussion

Several guidelines for the treatment of infantile aGE are available including the WHO guideline for treatment of diarrhea and an European guideline published by the European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN).^{22,8,23} None of the 15 guidelines mentioned anthroposophic medicine; therefore, our guideline provides a useful complementation, especially for German-speaking countries, where integrative and particularly anthroposophic medicine are often used in pediatrics.² Development of guidelines is an important step for the prestige of anthroposophic medicine, for the implementation in to clinical situations and quality assurance of treatment delivery.

For the first time, this paper presents a consensus-based scientific guideline for the supportive anthroposophic therapies applied for treating aGE in pediatric inpatients, which should be used in addition to conventional treatment regimes.

Results of the Delphi process demonstrate that, despite a very patient-orientated and individual treatment selection in anthroposophic medicine, there is very high agreement in the applied therapy options among our expert pool. Almost all experts (90%) agreed that rehydration/hydration, anthroposophic medications, abdominal compresses or liniments, supplying or maintaining warmth and conscious nutrition are the most important steps for the treatment of pediatric aGE. In line with all other guideline, rehydration is the most important aspect of the therapy.⁸ Regarding the point of conventional drugs, our expert pool estimated the use frequency as rare or never. In the European guideline, the use of antimotility drugs (Loperamide) is not recommended and they did not make a statement on the use of antiemetics (Ondansetron) because of missing studies for safety and efficiency.²²

Recommendation of anthroposophic remedies were subdivided with regards to age (infants (< 1 year), toddlers (1–5 years), school children and teens (6–18 years)). Here, 80% - 90% of experts agreed to the guideline. All of the recommended remedies are registered and only available in pharmacies, but efficiency and safety are poorly

investigated. Observational studies are only available for Bolus alba comp. and for Gentiana *Magenglobuli*.^{14,13} Here, more than 85% of physicians assessed the efficiency of both remedies as good or very good, and almost all physicians reported that remedies are well tolerated. However, more clinical trials are urgently needed to investigate anthroposophic remedies and to support the expert opinions. Currently, prospective case series documentations for the treatment of acute gastroenteritis and further diseases are carried out in the department of Pediatrics in the *Gemeinschaftskrankenhaus Herdecke*.

According to the ESPEN grading of consensus strength, two sections did not reach consensus. These points were the nutritional aspect and the use of conventional drugs. The expert opinions of nutritional recommendation during aGE ranged between no food intake to eating ad libitum. This reflects the current state of study situation. A lot of studies have been performed to investigate nutritional behavior during aGE, yet the question of early or late refeeding remains unclear.²⁴ WHO and the European guideline recommended to continue regular food intake without any changes in diet, including breast feeding.^{23,22} We decided to make no statement on this matter and leave the decision to the physician, depending on the individual case.

Nevertheless, our guidelines, as all conclusions created by Delphi processes, have their limitations. The results are limited to the expertise of the selected experts, and a bias by wording of the questions or by the judgment of the qualitative data may occur.²⁵ We tried to reduce this bias by using a software tool (MAXQDA) to analyze quantitative data and by participation of two independent reviewers. Additionally, consideration must be given to the important fact that the accessibility to anthroposophic remedies is sometimes limited, especially in third world countries.

5. Conclusion

Our guideline supplements the existing guidelines (e.g. WHO) for the treatment of infantile acute gastroenteritis and will contribute to facilitating the use of anthroposophic medicine in clinical situations. Moreover, the guideline makes anthroposophic medicine more accessible to parents and health insurance companies. All in all, our study shows that the Delphi process is a suitable method for developing guidelines in anthroposophic medicine and should serve as an example for further anthroposophic guidelines within the field of integrative medicine.

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Conflict of interest

None.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ctim.2019.04.001>.

References

1. Zuzak TJ, Bořková J, Careddu D, et al. Use of complementary and alternative medicine by children in Europe: Published data and expert perspectives. *Complement Ther Med*. 2013;21(Suppl. 1):S34–47. <https://doi.org/10.1016/j.ctim.2012.01.001>.

2. Längler A, Zuzak TJ. Complementary and alternative medicine in paediatrics in daily practice—a European perspective. *Complement Ther Med*. 2013;21(Suppl. 1):S26–33. <https://doi.org/10.1016/j.ctim.2012.01.005>.
3. Gesellschaft Anthroposophischer Ärzte in Deutschland e.V. <https://www.gaed.de/>.
4. Jeschke E, Ostermann T, Tabali M, et al. Anthroposophic medicine in pediatric primary care: a prospective, multicenter observational study on prescribing patterns. *Altern Ther Health Med*. 2011;17(2):18–28.
5. Kienle GS, Albonico H-U, Baars E, Hamre HJ, Zimmermann P, Kiene H. Anthroposophic Medicine: An Integrative Medical System Originating in Europe. *Glob Adv Health Med*. 2013;2(6):20–31. <https://doi.org/10.7453/gahmj.2012.087>.
6. Fleming SA, Gutknecht NC. Naturopathy and the primary care practice. *Prim Care*. 2010;37(1):119–136. <https://doi.org/10.1016/j.pop.2009.09.002>.
7. Fetz K, Schwermer M, Ostermann T, et al. *Comparative Analysis of clinical and demographic patient characteristics in integrative and conventional German paediatric inpatient departments*. 2019; 2019 (in prep.).
8. Lo Vecchio A, Dias JA, Berkley JA, et al. Comparison of recommendations in clinical practice guidelines for acute gastroenteritis in children. *J Pediatr Gastroenterol Nutr*. 2016;63(2):226–235. <https://doi.org/10.1097/MPG.0000000000001133>.
9. Schwermer M, Längler A, Fetz K, Ostermann T, Zuzak TJ. Management of acute gastroenteritis in children: a systematic review of anthroposophic therapies. *Complement Med Res*. 2018. <https://doi.org/10.1159/000488317>.
10. Schönau Eckhard, Naumann Emil G, Alfred Längler JB, eds. *Pädiatrie integrativ: Konventionelle und komplementäre Therapie*. Urban & Fischer Verlag/Elsevier GmbH; 2004.
11. Gesellschaft Anthroposophischer Ärzte in Deutschland und der Medizinischen Sektion der Freien Hochschule für Geisteswissenschaft. In: Dornach Schweiz, ed. *Vademecum Anthroposophische Arzneimittel*. 3rd ed 2013; 2013.
12. Soldner G, Stellmann HM. *Individuelle Pädiatrie: Leibliche, seelische und geistige Aspekte in Diagnostik und Beratung; anthroposophisch-homöopathische Therapie; mit 24 Tabellen. 4., völlig neu bearb. und erw. Aufl.* Stuttgart: Wissenschaftliche Verlagsges; 2011.
13. Meyer Ulrich. *Anwendungsbeobachtung WALA Gentiana comp., Globuli velati*. Der Merkurstab.; 2003 <https://doi.org/10.14271/DMS-18264-DE>.
14. Wellhausen Frauke, Mocka Stefanie, Meyer Ulrich. *Anwendungsbeobachtung WALA Bolus alba comp. Pulver*. Der Merkurstab. 2009. <https://doi.org/10.14271/DMS-19377-DE>.
15. Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. *J Adv Nurs*. 2000;32(4):1008–1015. <https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x>.
16. Jones J, Hunter D. Consensus methods for medical and health services research. *BMJ*. 1995;311(7001):376–380.
17. Powell C. The delphi technique: Myths and realities. *J Adv Nurs*. 2003;41(4):376–382.
18. Forbes A, Escher J, Hébuterne X, et al. ESPEN guideline: Clinical nutrition in inflammatory bowel disease. *Clin Nutr*. 2017;36(2):321–347. <https://doi.org/10.1016/j.clnu.2016.12.027>.
19. van der Maaden T, van der Steen JT, de Vet HCW, et al. Development of a practice guideline for optimal symptom relief for patients with pneumonia and dementia in nursing homes using a Delphi study. *Int J Geriatr Psychiatry*. 2015;30(5):487–496. <https://doi.org/10.1002/gps.4167>.
20. Hinkelbein J, Lamperti M, Akeson J, et al. European Society of Anaesthesiology and European Board of Anaesthesiology guidelines for procedural sedation and analgesia in adults. *Eur J Anaesthesiol*. 2017. <https://doi.org/10.1097/EJA.0000000000000683>.
21. Thangaratnam S, Redman CWE. The delphi technique. *Obstet Gynaecol*. 2005;7(2):120–125. <https://doi.org/10.1576/toag.7.2.120.27071>.
22. Guarino A, Ashkenazi S, Gendrel D, et al. European Society for Pediatric Gastroenterology, Hepatology, and Nutrition/European Society for Pediatric Infectious Diseases evidence-based guidelines for the management of acute gastroenteritis in children in Europe: Update 2014. *J Pediatr Gastroenterol Nutr*. 2014;59(1):132–152. <https://doi.org/10.1097/MPG.0000000000000375>.
23. World Health Organization. *The Treatment of diarrhoea : A manual for physicians and other senior health workers*. 2019; 2019 (Accessed January 13, 2019). <http://apps.who.int/iris/bitstream/handle/10665/43209/9241593180.pdf;jsessionid=1352EE0FFB446256DC5AB3A3107FE100?sequence=1>.
24. National Collaborating Centre for Women's and Children's Health. *Nutritional management*. RCOG Press; 2009.
25. Donohoe H, Stellefson M, Tennant B. Advantages and limitations of the e-Delphi technique. *Am J Health Educ*. 2013;43(1):38–46. <https://doi.org/10.1080/19325037.2012.10599216>.