

Acupuncture as a complementary therapy for cancer care: acceptability and preferences of patients and informal caregivers

Tessa Lefebvre

AZ Groeninge

Laura Tack

AZ Groeninge

Virginie Blicq

Karel de Grote-Hogeschool Antwerpen

Lieselot Cool

AZ Groeninge

Hans Pottel

Katholieke Universiteit Leuven - Campus Kulak Kortrijk

Koen Van Eygen

AZ Groeninge

Sofie Derijcke

AZ Groeninge

Philippe Vergauwe

AZ Groeninge

Patricia Schofield

Sheffield Hallam University

Rebecca Chandler

Anglia Ruskin University

Pauline Lane

Anglia Ruskin University

Tom Boterberg

Universiteit Gent

Philip Debruyne (✉ Philip.debruyne@azgroeninge.be)

AZ Groeninge <https://orcid.org/0000-0001-5438-9697>

Research

Keywords: Acupuncture, cancer, informal caregivers, complementary therapy, cancer-related side-effects

Posted Date: June 30th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-38589/v1>

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Abstract

Background: Acupuncture provides a possible complementary therapy which can be used alongside or following cancer treatment to relieve side-effects for cancer patients and survivors, such as pain and depression. Equally, it can provide relief from symptoms such as anxiety and sleep disturbance, which are recognised as significant issues among caregivers of those with cancer. The aim of this study was to explore the acceptability and preferences of cancer patients, disease survivors and their informal caregivers in relation to acupuncture.

Methods: A questionnaire was developed to explore acceptability and preferences of cancer patients, disease survivors and their caregivers in relation to acupuncture, including motivations to use acupuncture, preferred symptoms to be addressed, and practical issues (location; cost).

Results: A participation rate of 94.5% was obtained, with 116 participating patients and survivors, and 54 caregivers. Acceptability of acupuncture was around 1/3 for patients (34.5%; 40/116) and almost half for informal caregivers (48.0%; 26/54). In terms of preferences, the day care clinic was the favoured location for patients (52.5%; 21/40) to undergo acupuncture, while there was no specific preference on location observed for caregivers. A large number of patients indicated they would be willing to pay to receive the complementary therapy (60%; 24/40). Symptoms of fatigue, feeling listless, and pain were most often identified as complaints patients and survivors would use acupuncture for (60.0%, 57.5%, and 47.5% respectively). For informal caregivers, 48.0% (26/54) expressed an interest in using acupuncture for their pain, stress and sleeping difficulties.

Conclusions: This study indicates that many cancer patients, disease survivors and informal caregivers would accept acupuncture as a complementary therapy. They could further identify many symptoms they felt this therapy could relieve. This openness to acupuncture, and expressed preferences provide the foundations for this complementary therapy to be incorporated into holistic and supportive cancer care, both for patients and those supporting them.

1. Introduction

Cancer and cancer treatments can cause significant side-effects, including nausea, hot flashes, fatigue, drowsiness, and sleeping difficulties. These side-effects can be long-term and have substantial impact to quality of life, mental wellbeing and long-term health outcomes for those undergoing treatment for the disease and for survivors [1–3]. Arising from these side-effects can be reduced functionality, increasing dependence on informal caregivers for activities of daily living, lost productivity, etc. [4].

The effects of cancer can also extend to familial informal caregivers, who provide unpaid support to loved ones throughout their treatment and recovery. Informal caregivers may support loved ones in their daily functioning, treatment regime and recovery, which can have significant health and wellbeing implications [5]. Informal caregivers of those with cancer are at risk of distress, anxiety, depression and decreased quality of life [5]. Furthermore, they may cope with sleeping difficulties, fatigue, poor immune

functioning and pain [5]. There is therefore a clear need to provide appropriate support and interventions for informal caregivers, alongside the care which is provided to their loved ones.

Acupuncture provides a possible complementary therapy with the potential to relieve both the side-effects of treatment to the patient [6–9], and informal caregivers[10]. Acupuncture involves penetrating the skin with thin stainless steel needles on specific locations of the body [1,6]. For patients being treated for cancer and disease survivors, International Guidelines advocate the use of acupuncture in conjunction with pharmacologic interventions as a “mind and body complementary health approach” to assist in the management of pain and fatigue[11–13] (e.g. The National Comprehensive Cancer Network, NCCN; National Center for Complementary and Integrative Health (NCCIH); ADD e.g. UK Guidelines; ADD e.g. WHO Guidelines). As such, acupuncture is the most frequently used complementary therapy option used in Integrative Oncology settings within Western Countries [2].

While the mechanism of action for acupuncture is not yet fully understood, it is recognised as a relatively safe and effective intervention. Only a few non-serious adverse events such as hematoma/bleeding, needling pain and orthostatic symptoms have been reported [1]. Given that acupuncture does not interfere with primary treatments [2], it can be safely integrated within cancer treatment [3]. Evidence indicates that acupuncture can be an effective complementary therapy for those receiving cancer treatment, improving post-operative pain and chemotherapy-related nausea and vomiting [7]. It has further been found to improve pain, depression, anxiety, drowsiness, fatigue, numbness or tingling, sleep disturbance, and hot flushes [8,9].

The evidence base indicates that acupuncture could not only relieve patients’ cancer or cancer therapy-related symptoms, but could also offer relief to adults in general, and thus informal caregivers.

Acupuncture has been applied in several sorts of pain-related disorders, like (chronic) headache and migraine, but it has also been used for the management of gastroenterological problems and cardiovascular conditions such as angina pectoris and allergic diseases and symptoms [14].

However, acupuncture is often seen as an art more than a science and the Western world is, according to certain acupuncturists, not yet capable of dealing with Chinese Medicine [15]. Acupuncture is not appropriately integrated within conventional medicine, mainly due to the lack of information and due to the widespread misinformation concerning acupuncture [16] Patients with inflammatory bowel disease accepted complementary and alternative medicine as a treatment option, however some scepticism was shown towards it [17].

The findings presented in this article explore the preferences of patients and their caregivers, and their acceptability of acupuncture as a suggest method to relieve symptoms.

2. Materials And Methods

2.1. Study population and design

Participants were recruited at the day care clinic of the Organisation of European Cancer Institute (OECI)-designated clinical cancer centre of the General Hospital Groeninge in Kortrijk (Belgium). Patients were included if they had been diagnosed with a histologically confirmed solid tumour or haematological malignancy (any stage and any type of treatment), receiving primary treatment or receiving treatment after relapse, or if they had previously been diagnosed with cancer, but were now disease free. Caregivers of both groups were included. All participants were over 18 years of age and Dutch speaking.

Participants were recruited by a health care worker (T.L., L.T.) and invited to complete a questionnaire about their preferences in relation to acupuncture. The questionnaire was developed for the purposes of this study, and questions related to preferences and acceptability of acupuncture for the treatment of symptoms (symptoms as selected by the participant). The contents were drawn from the literature in the area, specifically questions surrounding symptom management. Cancer symptoms that might be treated with help of acupuncture found in literature were listed, but patients could add additional ones if required. The questionnaire consisted of six questions in total, to which participants could respond using multiple choice responses or fill out a free text field.

Demographic information and treatment status were also collected. Following completion of the questionnaire, those interested were provided with an information booklet on acupuncture and were offered an introductory acupuncture treatment by V.B..

Questionnaires did not collect any personal identifiers. No written informed consent form was requested, as it concerned an anonymous questionnaire which made tracing to the patient's record or to the identity of the participant impossible. At the beginning of the questionnaire, a clause was added to inform the participant that by completing the questionnaire, they gave permission to use these data for scientific research. Study findings were stored in a computer database in accordance to the Belgian data protection laws. This study was registered at General Hospital Groeninge (AZGS2018093) and was approved by the local ethics committee.

2.2. Statistical analysis

Descriptive statistics were performed to present patient and trial characteristics. The association between interest in acupuncture and both gender and age was explored statistically using a Contingency table and a Pearson Chi-Square test. All analyses were conducted using Microsoft Office Excel 2013 (Microsoft, Inc., Redmond, WA) and IBM SPSS v.25 (SPSS, Inc., Chicago, IL) software.

3. Results

3.1. Study population characteristics

A response rate of 94.5% was obtained in the questionnaire (172/182) and a total of 172 questionnaires were obtained including 128 patients and 54 caregivers. Two questionnaires were excluded from analysis as the participants did not meet the inclusion criteria. Of the remaining 170 questionnaires, 62 concerned

patients receiving primary treatment; 41 questionnaires were completed by patients receiving treatment after relapse; 13 were obtained from disease-free patients out of treatment; and 54 were informal caregivers. In total, 38.8% of the participants were interested in an acupuncture treatment (66/170) (Figure 1).

Full demographic and clinical characteristics of the patient group are presented in Table 1. The mean age of the patients was 62.8 years (range: 21-88 years). Of the 116 patients, there were more women than men taking part in the survey (72.4% and 27.6%, respectively). Most commonly, patients had been diagnosed with breast cancer (37.1%). Some patients were diagnosed with more than one malignancy. Almost all patients were treated with chemotherapy (98.3%). Other therapies included surgery, radiotherapy, immunotherapy and hormonal therapy (69.0 %, 46.6%, 23.3%, and 9.5%, respectively). Some patients received multiple treatments.

Table 1. Patient demographic and clinical characteristics (N=116)

	No.	%
Age , y	62.8	
Mean (range)	21.0 – 88.0	
Sex		
Men	32	27.6
Women	84	72.4
Patient type		
Receiving primary treatment	62	53.4
Receiving treatment after relapse	41	35.3
Disease-free, out of treatment	13	11.2
Malignancy		
Breast	43	37.1
Digestive	20	17.2
Hematologic	16	13.8
Urological	15	12.9
Gynaecological	11	9.5
Thoracic	6	5.2
Other*	10	8.6
Therapy		
Chemotherapy	114	98.3
Surgery	80	69.0
Radiotherapy	54	46.6
Immunotherapy	27	23.3
Hormonal therapy	11	9.5
Other: bone, brain, head and neck, unknown primary		

3.2. The acceptability and preferences of patients and survivors

Out of 116 patients and survivors, 40 were interested in an acupuncture treatment, while 76 were not (34.5% and 65.5%, resp.) (Figure 2A). No association between gender and interest in acupuncture was found ($p=0.651$) (Figure 2B). However, the interest in acupuncture differed between the age categories ($p=0.007$) (Figure 2C). In the older categories, starting from 46 years old, there were significantly more patients and caregivers without interest in acupuncture. While in the younger category (18 – 45 years), there were more patients interested in acupuncture than there were not. Of all patient respondents, 16.4% were interested and granted us their contact details in order to receive an introductory acupuncture treatment (19/116).

Of the 40 patients interested in an acupuncture treatment, over half were willing to self-fund (60.0%) (Figure 3A). 5 patients had no opinion on the payment for an acupuncture treatment. Despite their interest, only 16 out of these 40 patients and survivors were interested in attending an information session of acupuncture (40.0%) (Figure 3B).

In terms of the symptoms patients and survivors were interested in using acupuncture to manage, these included: fatigue (24/40; 60.0%); feeling listless (23/40; 57.5%); pain (19/40; 47.5%); poor appetite (11/40; 27.5%); and taste change (11/40; 27.5%) (Figure 4). There were a diverse number of other symptoms cited less frequently, including: oral and vocal problems; muscle weakness/stiffness/cramps; visual or sensory impairment; migraine; motor disturbance; nervousness; arthritis; bladder problems; heart issues; and smoking cessation.

To determine patient preferences regarding delivery of acupuncture treatment, the 40 interested patients and survivors were asked about preferred locality of treatment provision (Figure 5). Responses indicated a hospital would be most preferred (21/40; 52.5%), followed by at home (10/40; 25.0%), and the practice of an accredited acupuncturist (10/40; 25%).

3.3. The acceptability and preferences of caregivers

In total, 54 caregivers responded to the survey. The majority was represented by the partner of the patient (61.1%, 33/54), followed by relatives (31.5%, 17/54) of which 7 (41.2%, 7/17) were siblings, 3 (17.6%, 3/17) were parents, 1 (5.9%, 1/17) was a child and 6 (35.3%, 6/17) were other relatives. Another type of caregiver present at the day clinic were friends (7.4%, 4/54). The mean age of all caregivers was 60.9 years (range: 28-83 years).

Among all caregivers, the proportion of those interested in a treatment with acupuncture was more or less equal to those who were not interested (48% and 52% respectively). There were more female respondents to surveys, but the interest in acupuncture was not associated with gender ($p=0.535$) (Figure 6).

For the symptoms which caregivers cited they would use acupuncture for these were not dissimilar to many reported by patients and survivors. Pain was the most frequently mentioned symptom (14/26; 53.8%), followed by stress (6/26; 23.1%); sleeping difficulties (5/26; 19.2%); mental wellbeing (4/26; 15.4%); fatigue (3/26; 11.5%); and stomach problems (3/26; 11.5%). Pain symptoms which caregivers would manage using acupuncture were diverse and included headache, migraine, muscle pain, (low) back pain, nerve pain, shoulder pain, and arthritis. Other complaints caregivers mentioned throughout the survey were coughs, hot flushes, irritability, and quitting smoking. A large proportion of caregiver respondents did not have any symptoms which they had an interest in using acupuncture to manage (11/26, 42.3%).

4. Discussion

This study find that over third (34.5%) of patients and cancer survivors would be interested and accepting of acupuncture as an adjunct to either current cancer treatment or following cancer treatment. Acceptability of acupuncture was associated to age, with those under the age of 45 more likely to respond with interest comparative to those over the age of 65. This result is in line with what we expected, as we speculated that older people would be more sceptic towards this treatment compared to younger people. There was no association to gender in terms of acceptability. Interestingly, of interested patients and survivors over half did not wish to take part in a follow on information session about acupuncture (23/40; 57.5%). Feedback indicated this was because these patients and survivors already felt they have sufficient awareness of what acupuncture could offer for them in their symptom management.

The acceptability of acupuncture from patients and survivors in this study is less than observed in other studies. Lettner et al. found 63.7% of German cancer patients receiving radiotherapy would use regular acupuncture treatment if it was integrated into the individual therapy concept [18]. This higher percentage than the present study may reflect the differences in countries. Germany has more tendencies towards natural products and complementary therapies compared to other European countries [18].

In terms of patient and survivor preferences, most would be willing to self-fund (60%). Most patients and survivors (21/40; 52.5%) indicated would prefer to receive an acupuncture treatment in a hospital setting. They indicated this was related to safety, but also because acupuncture was seen an adjunct therapy that could be offered while waiting to receive other treatments. Patients experience the waiting times at the day care clinic as long. This location preference is followed by the preference to receive the treatment at home (10/40; 25.0%) and in the practice of an accredited acupuncturist (10/40; 25.0%). Three interested patients did not have an opinion on a preferred location.

76 patients were not interested in an acupuncture treatment, of which 15 indicated to be interested in an information session (19.7%), while 60 of them were not interested (78.9%).

The reasons for acupuncture were diverse, encompassing cancer-related symptoms but also extending into other alignments and wellbeing concerns. Fatigue, pain and oral complaints were the most frequently cited symptoms in this study. This was also reported by those with advanced cancer in a study by Kirkova et al. (13). In their observational study in 181 patients with advanced cancer, fatigue was reported by 72% patients, followed by pain (67.0%) and dry mouth (66.0%) [19]. Indeed, the prevalence and severity of the symptoms highly depend on the primary site of disease and the treatment modalities [20]. A subset of patients did not report any symptoms for which they would use acupuncture to manage (15%). Such could be explained by it having been their first visit to the day care clinic or by having not initiated therapy yet.

Among caregivers, although more expressed an interest and willingness to accept acupuncture, over half did not (52%). Also, no association between acceptability and gender was observed. Most caregivers (11/26; 42.3%) did not have any complaints they would use acupuncture for. For those that did pain, fatigue, stress, mental wellbeing and sleeping disturbance were highlighted.

Participation in this study (94.5%) was high, likely explained by the process of data collection used. A previous study (manuscript under review) implementing a survey found within this context participation rates could be low, therefore in this current study a healthcare worker completed surveys with respondents.

This study has a number of limitations. The survey was only distributed at one clinical cancer centre in Belgium, as such we need to be cognizant of wider applicability. There is also a possibility, as there are in all self-reported responses, of bias, either in relation to participant reporting or responder bias to the healthcare worker conducted the survey.

5. Conclusion

This study provides insights into the preferences of cancer patients, disease survivors, and their caregivers in relation to acupuncture treatment and their acceptability of this complementary therapy. They could further identify many symptoms they felt this therapy could relieve, certainly there is an evidence base to imply efficacy in the treatment of psychological and physical symptoms. It is clear there is space for acupuncture to be provided in part of integrated cancer-therapy to patients during therapy and following therapy for survivors to manage post-treatment and disease symptoms. It may also be extended to caregivers who are integral to the recovery and wellbeing of patients (and indeed cancer survivors), but also have their own needs which can be supported with acupuncture.

Declarations

Ethics approval and consent to participate

This study was registered at General Hospital Groeninge (AZGS2018093) and was approved by the local ethics committee of the General Hospital Groeninge. No written informed consent form was requested, as it concerned an anonymous questionnaire which made tracing to the patient's record or to the identity of the participant impossible. Before participation, a clause was added to inform the participant that by completing the questionnaire, they gave permission to use these data for scientific research.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

Our work was supported by the Belgian Foundation against Cancer (Stichting tegen Kanker, 2017-062).

Authors' contributions

TL: Protocol writing, Data Collection, Data Analysis, First author of the manuscript

LT: Protocol writing, Data Collection, Data Analysis, Major contributor in writing the manuscript

VB: Major contribution to the conception of the survey study, Data Collection

LC: Data Analysis and Revision of the manuscript

HP: Major contributor in Data analysis and Revision of the manuscript

KVE: Major contributor in Data Collection and Revision of the manuscript

SD: Major contributor in Data Collection and Revision of the manuscript

PV: Major contributor in Data Collection and Revision of the manuscript

PS: Major contributor to the conception of the survey study and Revision of the manuscript

RC: Major contributor in writing the manuscript and Revision of the manuscript

PL: Major contributor in writing the manuscript and Revision of the manuscript

TB: Major contributor in writing the manuscript and Revision of the manuscript

PRD: Protocol writing, Data Collection, Data Analysis, Major contributor in writing the manuscript,
Corresponding author of the manuscript

Acknowledgements

Not applicable.

References

[1] Lopez G, Garcia MK, Liu W, Spano M, Underwood S, Dibaj SS, et al. Outpatient acupuncture effects on patient self-reported symptoms in oncology care: a retrospective analysis. *J Cancer* 2018;9:3613–9. <https://doi.org/10.7150/jca.26527>.

[2] Dobos GJ, Kirschbaum B, Choi KE. The western model of integrative oncology - The contribution of Chinese medicine. *Chin J Integr Med* 2012;18:643–51. <https://doi.org/10.1007/s11655-012-1200-1>.

- [3] Lu W, Dean-Clower E, Doherty-Gilman A, Rosenthal DS. The Value of Acupuncture in Cancer Care. *Hematol Oncol Clin North Am* 2008;22:631–48. <https://doi.org/10.1016/j.hoc.2008.04.005>.
- [4] Yabroff KR, Lawrence WF, Clauser S, Davis WW, Brown ML. Burden of illness in cancer survivors: Findings from a population-based national sample. *J Natl Cancer Inst* 2004;96:1322–30. <https://doi.org/10.1093/jnci/djh255>.
- [5] Teixeira RJ, Applebaum AJ, Bhatia S, Brandão T. The impact of coping strategies of cancer caregivers on psychophysiological outcomes: an integrative review. *Psychol Res Behav Manag* 2018;11:207–15. <https://doi.org/10.2147/PRBM.S164946>.
- [6] Kay Garcia M, Mcquade J, Haddad R, Patel S, Lee R, Yang P, et al. Systematic review of acupuncture in cancer care:A synthesis of the evidence. *J Clin Oncol* 2013;31:952–60. <https://doi.org/10.1200/JCO.2012.43.5818>.
- [7] NIH Consensus Conference. Acupuncture. *JAMA* 1998;280:1518–24.
- [8] Garcia MK, Cohen L, Spano M, Spelman A, Hashmi Y, Chaoul A, et al. Inpatient Acupuncture at a Major Cancer Center. *Integr Cancer Ther* 2018;17:148–52. <https://doi.org/10.1177/1534735416685403>.
- [9] Miller KR, Patel JN, Symanowski JT, Edelen CA, Walsh D. Acupuncture for Cancer Pain and Symptom Management in a Palliative Medicine Clinic. *Am J Hosp Palliat Med* 2019;36:326–32. <https://doi.org/10.1177/1049909118804464>.
- [10] Errington-Evans N. Randomised controlled trial on the use of acupuncture in adults with chronic, non-responding anxiety symptoms. *Acupunct Med* 2015;33:98–102. <https://doi.org/10.1136/acupmed-2014-010524>.
- [11] National Comprehensive Cancer Network. Adult Cancer Pain 2019.
- [12] National Comprehensive Cancer Network. Cancer-Related Fatigue 2019.
- [13] Complementary, Alternative, or Integrative Health: What's In a Name? | NCCIH n.d. <https://nccih.nih.gov/health/integrative-health> (accessed June 3, 2019).
- [14] Zhuang Y, Xing J jing, Li J, Zeng BY, Liang F rong. History of acupuncture research. vol. 111. 1st ed. Elsevier Inc.; 2013. <https://doi.org/10.1016/B978-0-12-411545-3.00001-8>.
- [15] Jackson S, Scambler G. Perceptions of evidence-based medicine: Traditional acupuncturists in the UK and resistance to biomedical modes of evaluation. *Sociol Heal Illn* 2007;29:412–29. <https://doi.org/10.1111/j.1467-9566.2007.00494.x>.
- [16] Mallory MJ, Do A, Bublitz SE, Veleber SJ, Bauer BA, Bhagra A. Puncturing the myths of acupuncture. *J Integr Med* 2016;14:311–4. [https://doi.org/10.1016/S2095-4964\(16\)60269-8](https://doi.org/10.1016/S2095-4964(16)60269-8).

[17] Harris LR, Roberts L. Treatments for irritable bowel syndrome: Patients' attitudes and acceptability. BMC Complement Altern Med 2008;8:1–11. <https://doi.org/10.1186/1472-6882-8-65>.

[18] Lettner S, Kessel KA, Combs SE. Complementary and alternative medicine in radiation oncology: Survey of patients' attitudes. Strahlentherapie Und Onkol 2017;193:419–25. <https://doi.org/10.1007/s00066-017-1101-5>.

[19] Kirkova J, Walsh D, Rybicki L, Davis MP, Aktas A, Tao Jin, et al. Symptom severity and distress in advanced cancer. Palliat Med 2010;24:330–9. <https://doi.org/10.1177/0269216309356380>.

[20] Mazzotti E, Antonini Cappellini GC, Buconovo S, Morese R, Scoppola A, Sebastiani C, et al. Treatment-related side effects and quality of life in cancer patients. Support Care Cancer 2012;20:2553–7. <https://doi.org/10.1007/s00520-011-1354-y>.

Figures

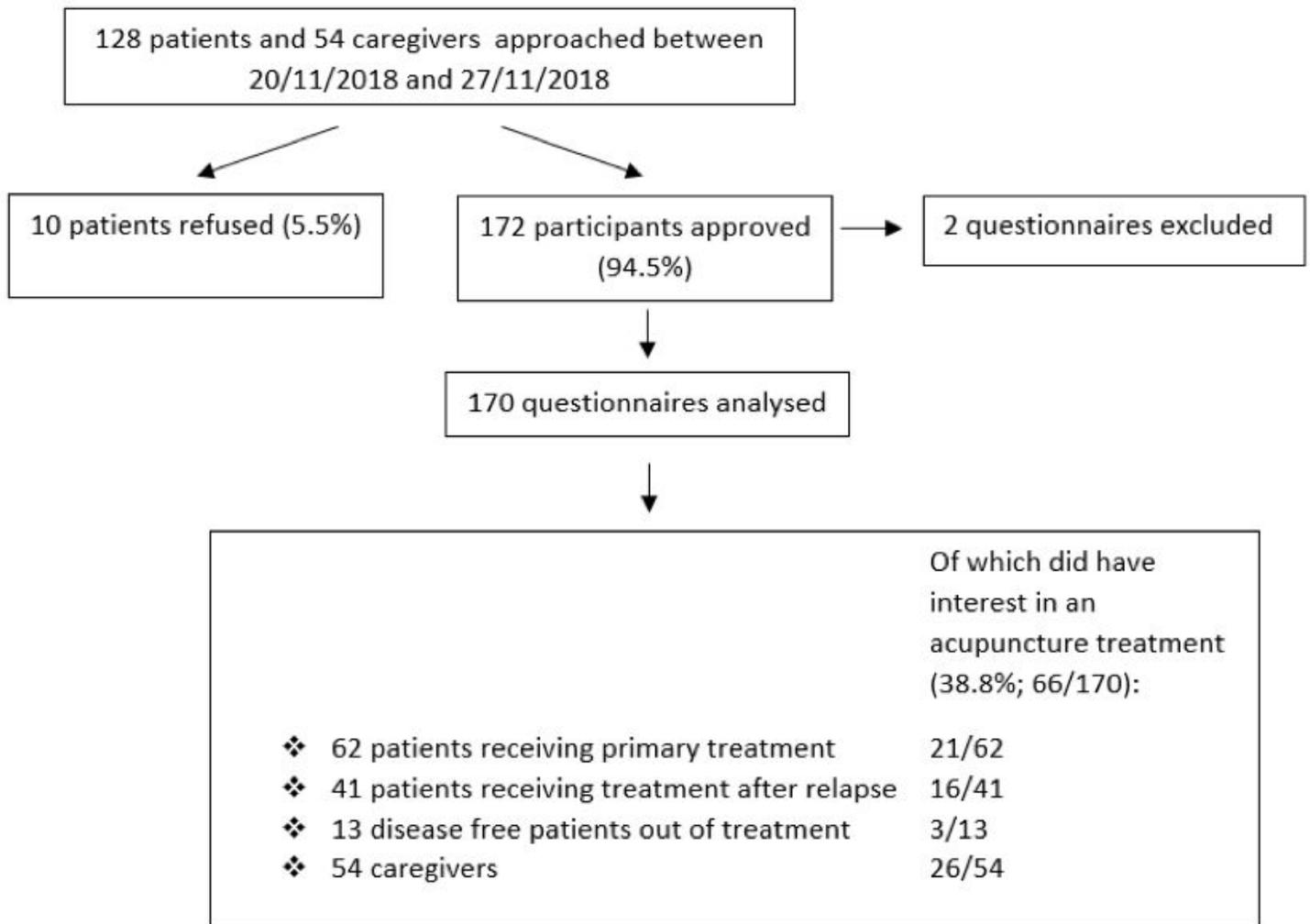
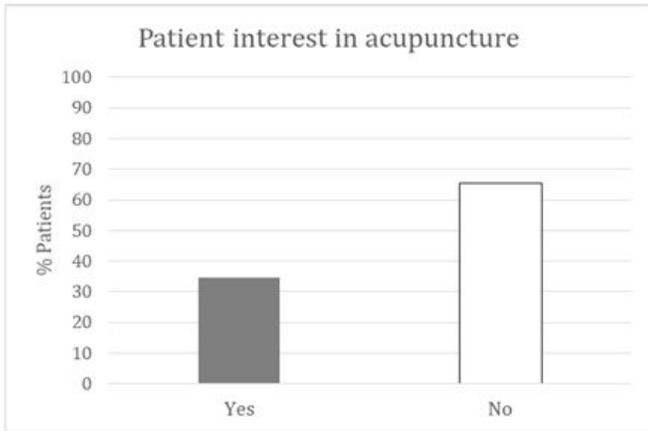


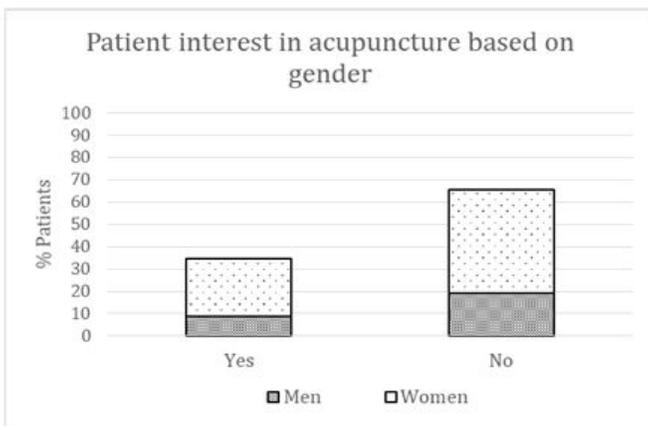
Figure 1

Patient flow diagram.

2A)



2B)



2C)

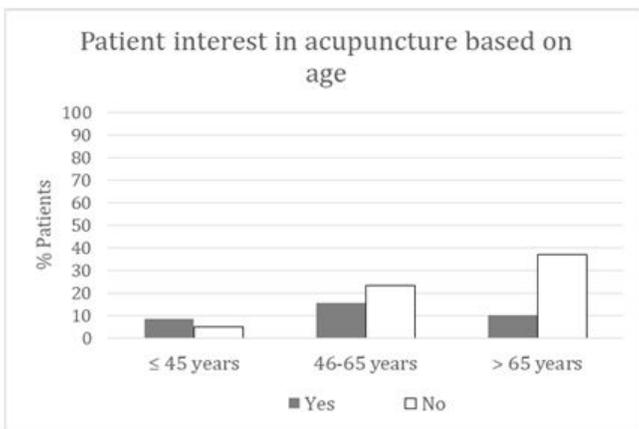


Figure 2

A) Patient interest in acupuncture; B) Patient interest in acupuncture based on gender ($p=0.651$); C) Patient interest in acupuncture per age category ($p=0.007$).

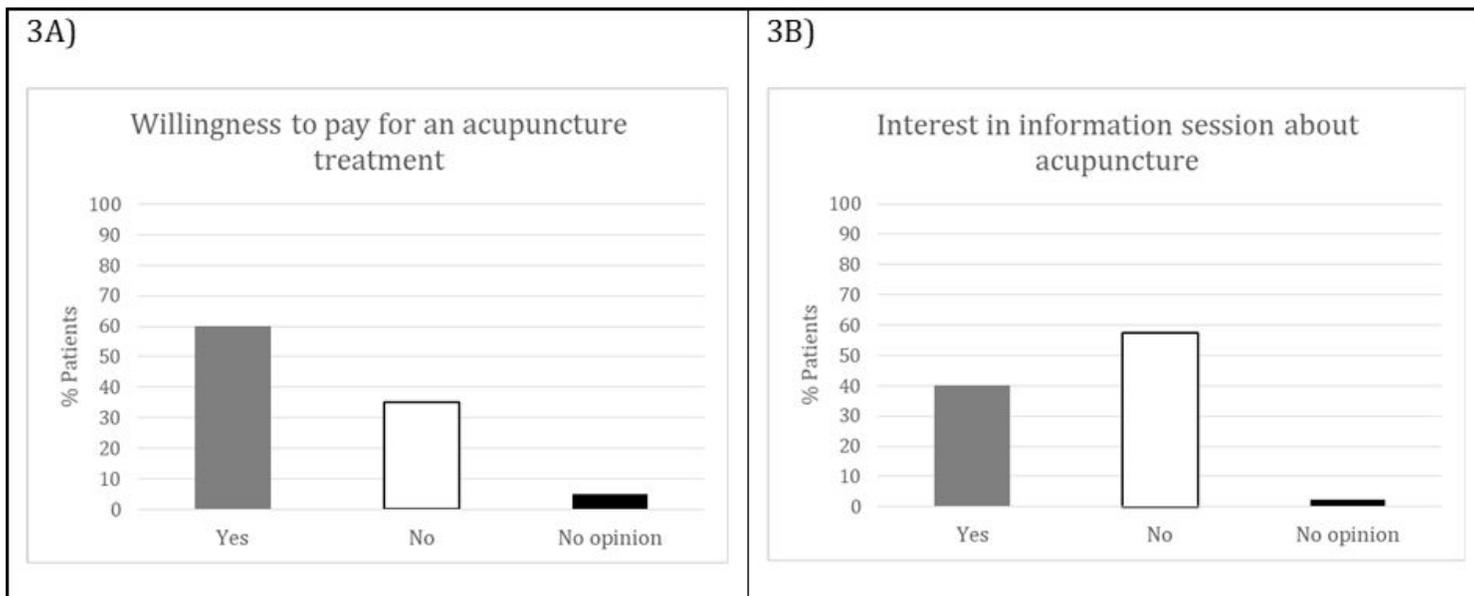


Figure 3

A) Willingness to pay for an acupuncture treatment; B) Interest in an information session about acupuncture.

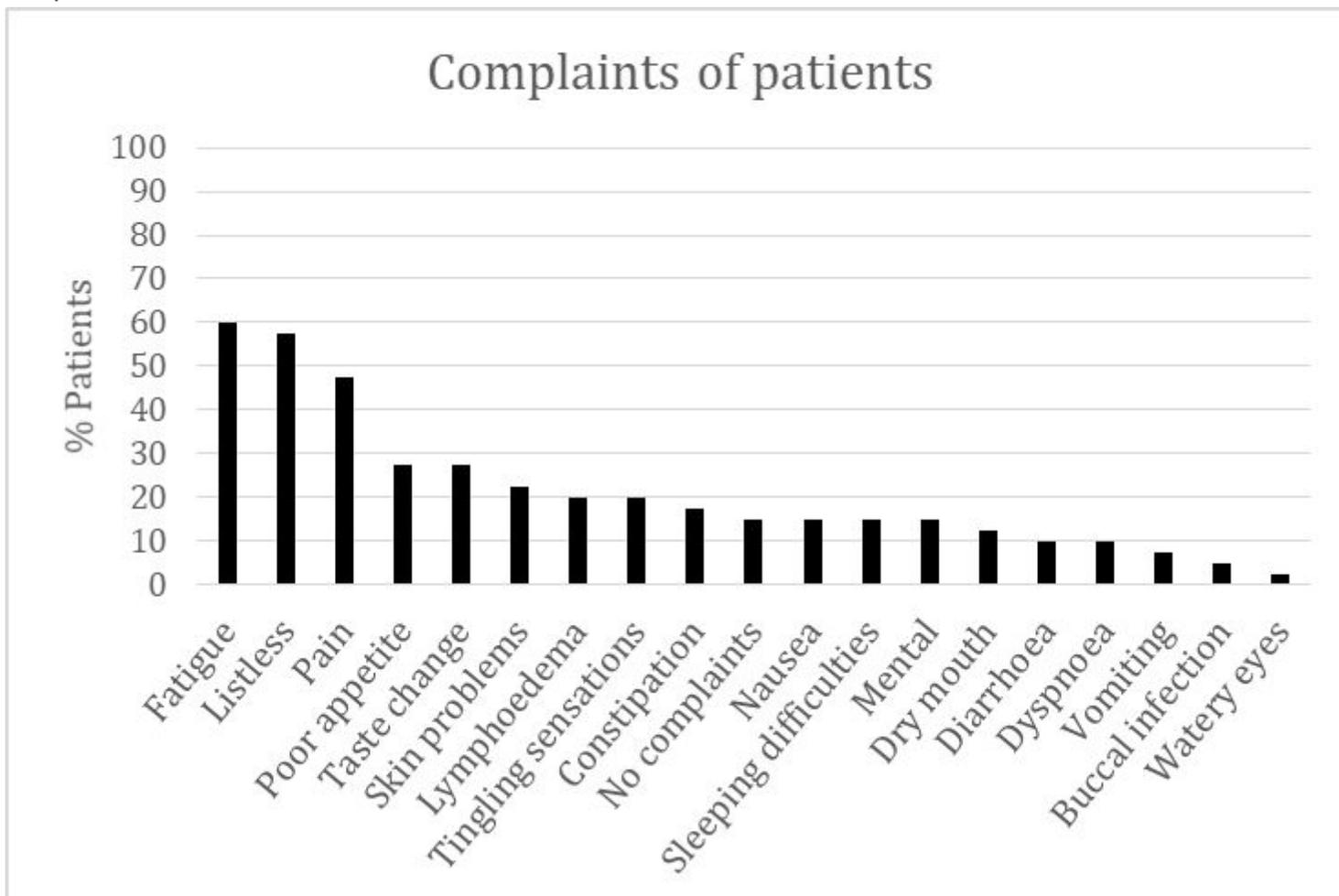


Figure 4

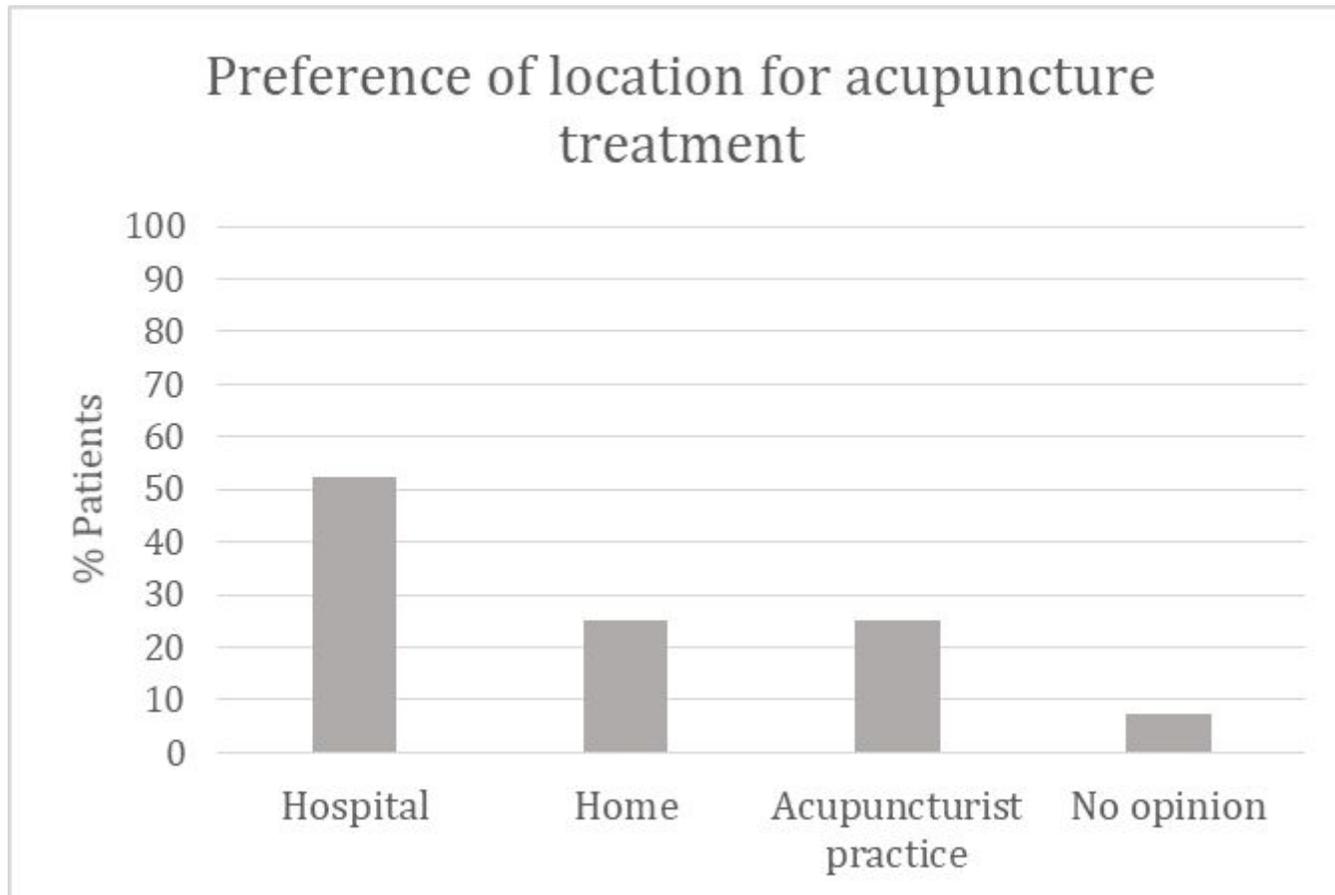


Figure 5

Patients' preferences on locality of acupuncture treatment.

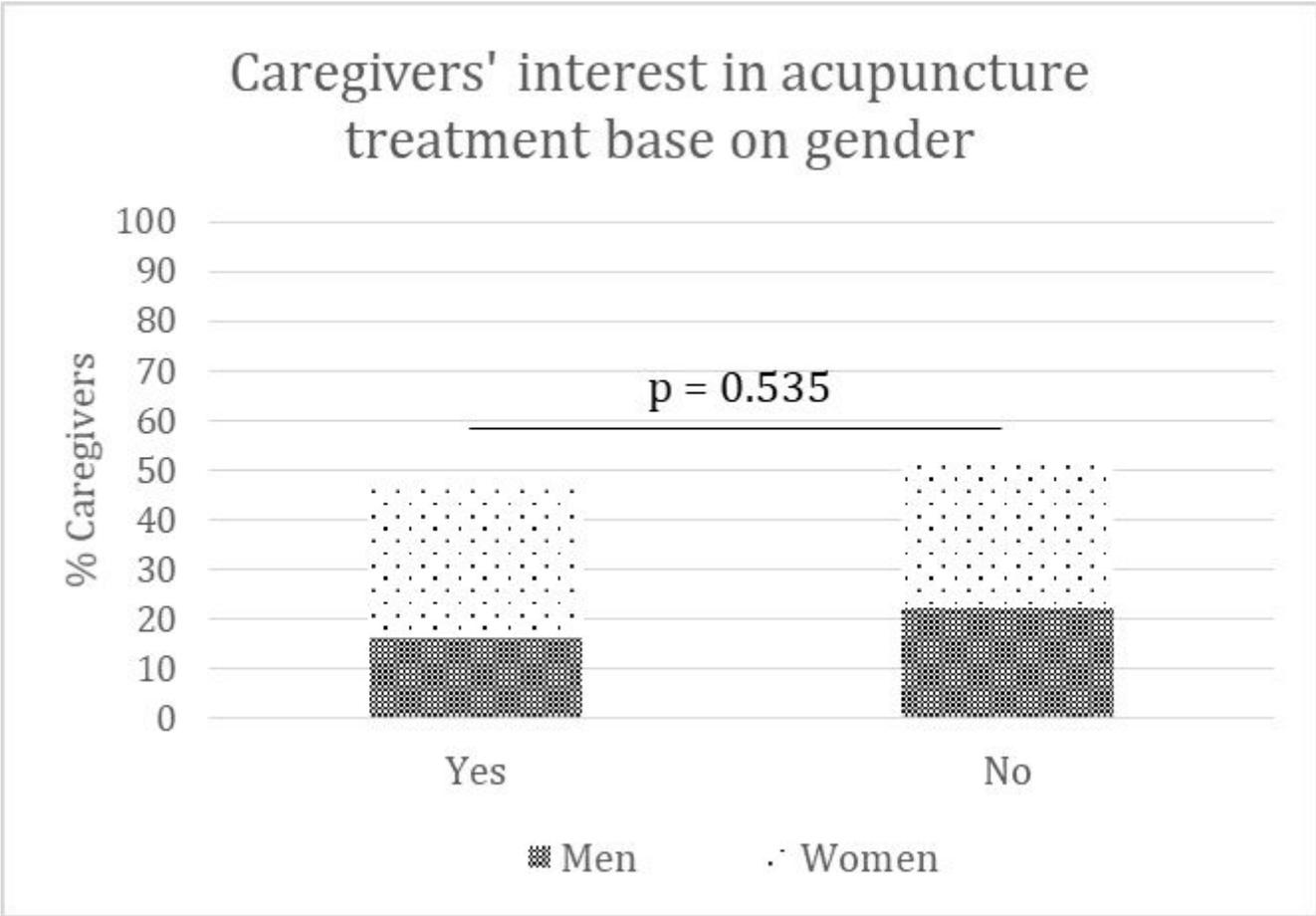


Figure 6

Caregivers' interest in acupuncture based on gender.