



## Perceptions and experiences of MediYoga among patients with paroxysmal atrial fibrillation—An interview study

Maria Wahlström<sup>a,b,\*</sup>, Monica Rydell Karlsson<sup>a,c</sup>, Jörgen Medin<sup>b,d</sup>

<sup>a</sup> Karolinska Institutet, Department of Clinical Sciences, Department of Cardiology, Danderyd Hospital, 182 88 Stockholm, Sweden

<sup>b</sup> Sophiahemmet University, Lindstedtsvägen 8, 114 28 Stockholm, Sweden

<sup>c</sup> Ersta Sköndal Brücke University College, Box 111 89, 100 61 Stockholm, Sweden

<sup>d</sup> The Red Cross University College, Box 1059, SE 141 21 Huddinge, Sweden

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### ABSTRACT

**Objectives:** We investigated the perceptions and experiences of a therapeutic yoga form, MediYoga, which is evolved from Kundaliniyoga among patients with symptomatic paroxysmal atrial fibrillation (PAF).

**Design and setting:** an inductive exploratory design was chosen with individual semi-structured interviews. The study was conducted with 12 participants (7 men and 5 women, average age 63.5) at a university hospital, Sweden. Informed consent was obtained from all participants. The data were analyzed using a qualitative content analysis with an inductive method and a manifest approach.

**Results:** Three categories were found in the analysis. In the category “A time for a sense of existence and presence”, the patients described an increased thoughtfulness and experiences of gaining access to an inner self. The category “A way of gaining well-being and increased consciousness” describes patients’ feelings of relaxation and feeling of comfort, with components of mental and physical well-being. Furthermore, “Access to a tool to gain willpower and relieve symptoms” describes the perceptions from patients to obtained access to a tool for handling the emotions, such as fear and anxiety, as well as symptoms that they could struggling with between, and during, their episodes of atrial fibrillation. No adverse events were reported by the yoga group, during the study.

**Conclusions:** Patients with PAF described MediYoga as an accessible tool to manage emotions and symptoms related to episodes of AF. MediYoga may also assist in enhancing body awareness, whereby physical, mental and spiritual components are integrated. MediYoga may strengthen self-management among patients with PAF.

### 1. Introduction

Atrial fibrillation (AF) is the most common heart rhythm disturbance associated with high mortality, morbidity and hospitalization.<sup>1</sup> Episodes of atrial fibrillation (i.e. paroxysmal atrial fibrillation, PAF) are correlated with palpitations, dyspnea and fatigue and can cause symptoms such as anxiety, stress and worry.<sup>2</sup> Reducing symptoms and preventing severe complications, for example stroke, are the primary treatment goals for patients with PAF.<sup>1</sup> The standard treatment is regulation with medication (rhythm-and/or frequency regulation), cardio version and/or ablation.<sup>1</sup> Patients with PAF reported that stress was one of the most perceived causes in episodes of AF,<sup>3</sup> and a recent study showed that AF had a substantial impact on patients’ lives.<sup>4</sup>

Compared to the general population and patients with other cardiovascular diseases, patients with PAF experience a deteriorated health-related quality of life (HRQoL), which can influence their social

situation and working habits.<sup>3,5,6</sup> A high arrhythmia burden and heart rate can also cause a decreased HRQoL.<sup>7</sup> The literature shows that it is important to teach self-management to patients with PAF<sup>8</sup> and there is also a need for practical tools to handle their emotions, such as anxiety and worry, that can occur with AF.<sup>9</sup> Physical exercise, such as a self-care program, increased QoL in patients with PAF after an ablation. However, the results showed that changes did not appear to concern mental well-being.<sup>10</sup>

Yoga, as a complementary and alternative method, has also been suggested as a technique to manage symptoms occurring in episodes of AF to strengthen self-management.<sup>11</sup> Yoga was introduced to the West at the beginning of the 19th century, and has now been explored as an effective form of exercise in the community.<sup>12</sup> However, yoga also includes aspects such as mental training (meditation) and various breathing techniques,<sup>13</sup> which can contribute to calming biological functions and relieving stress.<sup>12</sup> In relation to other diseases, yoga has

\* Corresponding author at: Sophiahemmet University, Lindstedtsvägen 8, 114 28 Stockholm, Sweden.

E-mail address: [maria.wahlstrom@shh.se](mailto:maria.wahlstrom@shh.se) (M. Wahlström).

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been shown to increase HRQoL in patients with hypertension and heart failure.<sup>14,15</sup> Moreover, yoga has also been seen to have positive effects as a self-care program in cancer-care and treatment for low-back pain.<sup>16,17</sup> Furthermore, HRQoL increased when patients with PAF performed yoga as well as feelings of depression and anxiety decreased.<sup>18</sup> In another study, patients with stress-related symptoms reported that, in MediYoga, a therapeutic yoga form, ([www.medi-yogainstitutet.se](http://www.medi-yogainstitutet.se))<sup>19</sup> they had received a tool with which to manage their stress.<sup>20</sup>

There is substantial evidence of impaired HRQoL in patients with PAF. HRQoL in this context is connected to subjective symptoms and emotions during episodes of AF. However, to our knowledge, few studies have evaluated self-management programs aiming to decrease symptoms, as well as improve well-being and HRQoL in patients with PAF. In caring science, the goal and overall objective are to support and strengthen peoples' health processes.<sup>21</sup> In relation to this and existential needs, treatments for patients with AF are at odds with individual human personal desires. Therefore, it is important to provide support and assistance to this population in their health process and strengthen their self-management.

There is a lack of knowledge about complementary methods, such as yoga, for patients with PAF. Therefore, it is important to describe the experiences and perceptions of performing MediYoga.

The aim was to describe perceptions and experiences of MediYoga among patients with symptomatic PAF.

## 2. Methods

### 2.1. Study design and setting

An inductive exploratory design<sup>22</sup> was chosen with individual semi-structured interviews.

The participants were enrolled from a previous randomized, controlled study, comparing MediYoga with relaxation or standard care (the MYPAF-study; MediYoga among patients with Paroxysmal Atrial Fibrillation). The MYPAF study was conducted at a university hospital in Sweden during 2014–2017 and 132 participants were randomized to one of the three groups, 44 in each group, Fig. 1. Demographic and clinical data were obtained from medical records.

### 2.2. Intervention

MediYoga, a therapeutic yoga form which is derived from Kundalini yoga, was performed in group sessions for one hour, once a week for 12 weeks (in addition to standard treatment) in the hospital. The MediYoga group received a CD-record with the yoga program and was encouraged to perform MediYoga at home. The program consisted of light movements, meditation and relaxation and could be performed sitting in a chair or on the floor, as described in Supplement I. The relaxation group listened to evidence-based calming music<sup>23</sup> ([www.musiccure.com](http://www.musiccure.com)) in group sessions, half an hour, once a week for 12 weeks (in addition to standard treatment). The control group received only standard treatment. Inclusion criteria were: patients with symptomatic paroxysmal atrial fibrillation and aged  $\geq 18$  years old. Exclusion criteria were: patients with difficulties in the Swedish language, multiple concurrent medical conditions and/or cognitive dysfunction (e.g. mental illness, dementia) and considered unable to carry out yoga.

### 2.3. Data collection

In the MYPAF study, the participants made two visits to the principal author; baseline (Visit I), and at the end of the study, 12 weeks (Visit II). At Visit I the participants, randomized to MediYoga group, were informed about, and asked if they would like to participate in, the upcoming interview study (after having completed the MediYoga sessions in the previous study). Meanwhile the MYPAF study were ongoing, the participants were consecutively selected at Visit II and asked again to participate in the interview study, by the principal author. The selection of participants to the interview study, from the MYPAF-study, were accomplished according to the principal authors' time frame, while including participants in the MYPAF-study. The subsequent interview was scheduled to suit the participants.

Both the MYPAF and the interview study were temporary interrupted during holiday and during summer time. Twelve patients were asked and all agree to participate in the interview study.

The interviews were conducted from February 2015 to May 2017 and were performed face to face. All three authors performed the interviews individually. They were all carried out in the same quiet room, which was chosen by the principal author, at the hospital. The principal author (RN, MA, PhD student, female) had no experience of performing research interviews, while the second (RN, PhD, female) and the last (RN, PhD, male) had such experience. To ensure consistency,<sup>22</sup> a written semi-structured interview guide, with open and follow-up questions, was constructed and used, Supplement II. Two participants were asked to participate in pilot-interviews. After the two pilot-interviews, conducted by the principal author, the data were evaluated by the authors and the questions were revised slightly to elicit responses more closely related to the aim of the study. The pilot-interviews were included in the study. The authors perceived a repeated pattern in the analysis after ten interviews. Two more patients were included to ensure information power.<sup>24</sup> The interviews were audio recorded and transcribed verbatim, directly after the interview, by the principal author. To verify that the transcribed text was correct, the recorded interviews were compared with the text. The duration of the interviews was 17–32 minutes and they were conducted not more than four weeks after the final intervention of the previous study.

### 2.4. Ethical considerations

All participants provided verbal and written informed consent at baseline, and information about the interview study was repeated verbally before the interview started, at baseline. It was made clear that participation was non-compulsory and that it was possible to discontinue the interview without consequences. The study was approved by the Ethics Committee of Stockholm, Sweden (DNR 2013/953-31/4). Clinical Trial Gov Id: NCT02223156. The investigation conforms to the principles outlined in the Declaration of Helsinki.<sup>25</sup>

### 2.5. Data analysis

The interviews were analyzed using qualitative content analysis, with an inductive method, in a manifest approach.<sup>26</sup> Content analysis is a method of systematically analyzing written or verbal communication.<sup>27</sup> To obtain a sense of the whole, the transcribed texts were

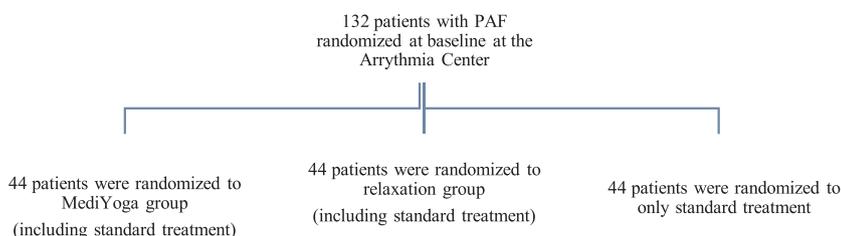


Fig. 1. Randomization flow.

carefully read through several times by the principal author and samples were read by the second and third author. A manual method was used to organize the data<sup>28</sup> and after several discussions between the authors, the meaning units with the same pattern and which corresponded with the aim of the study, were identified. These meaning units were then condensed and labeled into codes. The codes were compared with each other and those which appeared to belong together were sorted into sub-categories by the principal author. After processing the context of the sub-category (discussion between all authors), on an abstract level, three categories were identified which described patients' perceptions and experiences of MediYoga. The analysis process is described in Supplement III.

### 2.6. Trustworthiness

To contribute to trustworthiness in this study, we included 12 patients with stratification to provide in-depth material. The interviews were held no more than four weeks after completion of the study to facilitate remembering the intervention. The principal author had experience of MediYoga, but no practical experience in the field of research interviews. To contribute to credibility, the other, more experienced, authors also performed interviews (female; 3 and male; 3). The interviews were transcribed verbatim by the principal author and were then checked for accuracy by listening once again to the recording. The texts were then analyzed and discussed several times by all the authors to ensure confirmability. Quotations from the patients are given below to contribute to transferability; patient characteristics are also presented. The aim of this study was to analyze the data using a manifest approach. Therefore, the data were identified in terms of categories, thus contributing to the description of Graneheim, Lindgren and Lundman.<sup>29</sup>

### 3. Results

The participants comprised seven men and five women with an age range of 49 to 82 years (median; 63.5 years). The attendance rate at the yoga group was, during the intervention at the hospital, median nine (7 to 11) times whereas the home training was median 12 (0 to 60) times. Information given by participants at the baseline visit in the previous study, demographic data as well as characteristics are shown in Table 1. No adverse events were reported by the yoga group, during the study. Demographic from the 26 participants, from MYPAF-study, which was not included in the interview study, were 15 women, 11 men and with an age range 48 to 77 years (median age; 69.5).

Three categories were identified and describe the patients' perceptions and experiences of MediYoga: 'A time for a sense of existence and

**Table 1**  
Characteristics of participants.

Gender	Age	Hypertension	Stroke	AMI <sup>a</sup>	CH <sub>2</sub> DS <sub>2</sub> -VASc Score (0-10)	Number of yoga sessions at hospital	Number of yoga sessions at home
Male	50	-	-	-	0	7	35
Female	66	-	-	-	2	10	48
Male	49	-	-	-	0	10	24
Female	62	X	-	-	2	9	2
Male	68	-	-	-	1	10	0
Male	77	X	-	-	2	9	10
Female	71	X	-	-	3	7	60
Male	61	-	-	-	0	9	36
Female	82	X	-	-	3	11	0
Male	52	X	-	-	1	9	12
Male	65	X	-	-	0	9	0
Female	54	-	-	-	2	10	12

<sup>a</sup> AMI = Acute Myocardial Infarction.

**Table 2**  
Process of developing sub-categories into categories regarding the perceptions and experiences of MediYoga.

Sub-category	Category
-	A time for a sense of existence and presence
Experience of increased well-being Increased awareness of the connection between physical and mental functions	A way of gaining well-being and increased consciousness
An accessible tool Reduction of bodily symptoms	Access to a tool to gain willpower and relief of symptoms

presence', 'A way of gaining well-being and increased consciousness' and 'Access to a tool to gain willpower and relieve symptoms', Table 2.

#### 3.1. A time for a sense of existence and presence

A sense of existence was reported by the patients, which in this context was described as increased thoughtfulness and experiences of gaining access to an inner self. Moreover, patients expressed that they transferred themselves to a deeper level in their minds after having attended yoga sessions. The patients also reported feelings of inspiration and inner peace after the sessions. One patient said that he felt pleased to have been able to create time for himself which motivated him to continue with the yoga sessions.

"//I was relaxed a lot and felt as if I had some inner peace...//...connect with my inner self...who am I, what do I want....//" ..... (Randomization Number (RN), 127; line 21)

"//...it is actually about that inner peace ... to wind down as well ... to find balance ...//" (RN 120; line 105)

Patients described a sense of presence, and in this context a feeling of being more profound and being in the moment, after having performed yoga. During and after the yoga, they described having found a way to block out the surroundings and they became less disturbed by noise or other distractions from the environs. This contributed to releasing thoughts from focusing upon concerns which affected them in life, and elicited feelings of being untroubled, which in turn reduced a sense of stress. Also, some sensations were reported as being difficult to explain, but were referred to as a higher level of presence and a state in which they wished to remain. The patients expressed a positive sense of increased awakening in their minds, despite being totally relaxed physically. One patient said that he felt more focused, after performing yoga, and could gather his thoughts better, which in turn contributed to a lower level of stress.

"...then I was in my own world ... " then you don't worry about anything else really, you just are...//...you didn't want to let go of the feeling...//...more unaffected by the surroundings...and you were more present....//" (RN 019; line 118,125, 182)

#### 3.2. A way of gaining well-being and increased consciousness

##### 3.2.1. Experience of an increased well-being

Patients described feelings of relaxation and extended well-being after having performed MediYoga. They described it as a feeling of comfort, with components of mental and physical well-being.

They also reported that the feeling of relaxation could last several hours and could be evoked in the following days. The yoga sessions seemed to generate positive sensations such as, a good mood, calmness and happiness. The physical exercises were also experienced as affecting the psychological part of the body, which contributed to feelings of relaxation. Furthermore, patients also reported better sleep after having performed MediYoga during the day:

"//.....I felt a total relaxation in body and mind....//....You feel more

*alert when you come out of the session ... you feel peaceful and you feel it ... lighter in body.....//” (RN 035; line 77)*  
*“// I did it myself a lot at home so ... I thought it was very pleasant...//” (RN 076; line 22)*

### 3.2.2. Increased awareness of the connection between physical and mental functions

The patients perceived that they achieved extended connections with their anatomy and breathing, and were able to improve their bodily functions. In this context, they described an increased consciousness in how to affect their body, and, by learning good breathing techniques, experienced being able to walk easier and faster. Some patients experienced their body as, “stiff as a board” and felt a slight muscle soreness after the first yoga sessions, which refers to an extended awareness of their anatomy.

*“//.....with good training, contact with the body and the breathing gives a well-being for my part.//” (RN 070, line 217)*

There were descriptions of enhanced attention, perception and knowledge of their emotions shortly after a yoga session. They described a decreased feeling of stress, a heightening of their senses and they reported being better to manage their emotions. Moreover, the patients expressed a sense of satisfaction, an increased energy level as well as cheerfulness after having been to a yoga session. Deeper awareness about the connection between the physical and mental functions in their body were addressed, by the patients, which contributed to extended knowledge as to how to influence symptoms and emotions.

*“//...The physical part greatly affects the mental component..... Increased awareness of the importance of doing this and that I can influence it. ... //” (RN 075; line 174)*

### 3.3. Access to a tool to gain willpower and relieve symptoms

#### 3.3.1. An accessible tool

The patients felt that they had obtained access to a tool for handling the emotions, such as fear and anxiety, that they were struggling with between, and during, their episodes of atrial fibrillation. Patients also said that they could handle the sensation that occurred prior to an episode of atrial fibrillation. Patients reported that yoga was easy to adapt to different environments. One patient described how he used the deep breathing procedure from the yoga sessions at work. Moreover, patients described using deep-breathing when sitting in a traffic jam, at work in a quiet space as well as when experiencing heart symptoms. Patients said they were aware of the benefits of using yoga exercises to relieve their subjective heart symptoms. This knowledge led them to perceive yoga as a tool.

*“I still have my irregular heartbeats then, but I feel I handle it better, I'm not as afraid ...//...I do not have them as often and I think I can handle myself and them better.” (RN 028; line 172)*

#### 3.3.2. Reduction of bodily symptoms

The patients reported a reduction in the duration and frequency of their heart symptoms. They also experienced a substantial effect regarding symptoms of atrial fibrillation, and were able to revoke the symptoms of irregular heartbeat. One patient described having atrial fibrillation symptoms during a yoga session but that the episode disappeared during the session. Another patient reported being free from symptoms of atrial fibrillation for the first time since the onset of the condition. Furthermore, there were reports that other symptoms, such as pain in the low-back, decreased. Due to the perceived simplicity of using yoga at home, patients reported being well-disposed to adopting the yoga program to relieve symptoms.

*“I felt clearly that there's a connection, at least indirectly, that you can influence how stressed you are through yoga and that it can affect the atrial fibrillation and frequency ... I have actually been free of symptoms in principle the past three months.” (RN 080 line 153–154,160)*

## 4. Discussion

In this study, the patients expressed a sense of existence and connection with a deeper level in their minds after performing MediYoga. This is in accordance with the essence of performing yoga, as a spiritual assessment, in attaining a deeper understanding of the whole and the connections between body and spirit.<sup>12</sup> In the holistic approach, to which yoga belongs, spiritual connections may cultivate compassion for oneself and others, as well as reduce one's own suffering.<sup>30</sup> Another study of medical yoga describes patients' feelings of “an increased sense of wholeness” and “another way of being in the world”,<sup>20</sup> which supports and strengthens our findings.

Yoga is described in the literature as a part of a mindfulness-based intervention.<sup>31–33</sup> Mindfulness is defined as “cultivating present moment awareness” which in turn develops emotional well-being and self-balance.<sup>34</sup> In this study, the patients expressed a sense of being more profound and being in the moment, which correlates with the description of mindfulness. The essence of mindfulness and yoga is also described in another study with yoga as self-regulation<sup>33</sup> and its relationship to psychological symptoms,<sup>32</sup> whereas the authors conclude that the concept of yoga increases mindfulness as well as enhancing well-being with decreased symptoms as a result. The relationship with mindfulness, in this study, also concurs with the patients' expression of their reduced symptoms and extended well-being.

The patients perceived that MediYoga elicited feelings of inner-peace and a positive sense of awakening. They also reported an increased consciousness and therefore increased knowledge about the connection between physical and mental functions, and that they could affect these with MediYoga. This may contribute to the relief of symptoms, improvement in managing emotions and enhanced well-being, thus positively influencing HRQoL. Moreover, this demonstrates a holistic perspective in caring, and contributes to the description of such an approach by Dahlberg, Ranheim and Dahlberg<sup>35</sup>; including the paths of yoga<sup>30</sup> and the importance of patients finding a rhythm in their existence and health in order to provide balance in life. Accordingly, this may indicate the importance of providing holistic care for this group of patients whereby both the physical, mental as well as spiritual functions are addressed.

The literature describes how perceived stress contributes to the occurrence of AF.<sup>3</sup> In the present study, the patients described reduced feelings of stress after having performed yoga, which may contribute to a decrease in the number of episodes of atrial fibrillation. One of the symptoms in atrial fibrillation is dyspnea (shortness of breath) (2), which can contribute to less physical activity as well as decreased HRQoL. Patients in this study described improved bodily functions, such as breathing with deep breathing making it easier, for example, to walk. This may assist in reducing the symptoms of dyspnea during an episode of atrial fibrillation. Also, by improving breathing functions, it may be easier to increase the level of exercise after the episode of atrial fibrillation. Furthermore, knowledge about their own bodily functions may help patients maintain a holistic perspective in order to achieve an enhanced well-being and HRQoL.<sup>30</sup>

Self-management programs for chronic illness are described in the literature in terms of three tasks: medical management of the condition, behavior management and emotional management. Among others, these tasks include dealing with symptoms as well as with psychological and social demands.<sup>36</sup> PAF is a chronic illness and, as described, the literature states that the goal of treatment is to alleviate and reduce symptoms<sup>37</sup> in order to increase HRQoL.<sup>1</sup> There is a need for a tool and/or a self-management program to relieve negative emotions such

as anxiety and worry.<sup>9, 38</sup> One of the main findings in this study was the perception of a reduced symptom burden after performing MediYoga. Some patients reported being free of symptoms for three months, which had not been experienced since contracting PAF. This may encourage others to perform studies, using different methods, to explore what causes a reduction in symptoms. Additionally, the patients expressed that they had been given access to a tool to handle their emotions occurring during, or after, an episode of atrial fibrillation. Patients reported being better equipped to handle their emotions and to attain a balance in life between the episodes of atrial fibrillation. According to the literature, this may increase HRQoL as patients are able to become active in their own health process.<sup>35</sup> This is also in line with MediYoga contributing to the description of, and being defined as, a self-management program.<sup>36</sup> In addition, patients reported symptom relief during working hours, which may contribute to decreased absence from work and consequently an improved social situation.

Although some patients described how they experienced their body as being stiff as a board and a slight feeling of soreness, none reported negative experiences performing MediYoga. The perceptions were that MediYoga was easy to use and do, lacked side effects and did not result in any injuries. Also, the findings show that the patients used MediYoga in different environments when symptoms appeared. This may provide patients with PAF an easily accessible self-management program which can be performed elsewhere than in hospitals and other similar environments such as out-patient clinics.

It is especially important to evaluate complementary methods, such as self-management programs, for patients with PAF. Some medical treatments have side effects which restrict their use and which in turn may increase the burden of symptoms. To our knowledge, only one study of PAF, incorporates a complementary method, a CBT program, showing a decrease in the burden of symptoms.<sup>39</sup> This result is in accordance with the findings of the present study.

Living with paroxysmal atrial fibrillation may lead to a stressful life, which can contribute to a subjectively reduced social situation<sup>5</sup> and there are limitations in support available to such patients.<sup>9</sup> In this study, the patients described feelings of security by gaining access to a tool to handle emotions, such as fear, worry or anxiety, which are related to episodes of atrial fibrillation. The ability to manage these emotions may contribute to strengthening the patients' own self-care capacity<sup>40</sup> and therefore improve their social situation.

## 5. Limitations

The principal author had no experience of conducting research interviews. However, she has long experience of, and extensive knowledge about, patients with heart diseases. Also, dialogues with patients and teaching them about their condition in clinical practice has enhanced the capacity to perform interviews.

The interviews were held in the same environment and conducted by all three authors, which enhances the credibility of the study. The interviews were held within four weeks for all the patients, which also helps to enhance credibility.

Patients were encouraged to perform the yoga program at home, but the main sessions were conducted at the hospital. A few patients were not able to perform yoga at home due to lack of time, and there major differences between patients with regard to the amount of yoga practiced at home. This may influence the results, as participants performing many yoga sessions may have contributed more information about perspectives and experiences of MediYoga.

## 6. Conclusion

This study shows that the experiences and perceptions of MediYoga, in patients with PAF, describe decreased symptoms. It is perceived as an accessible tool to manage emotions related to episodes of AF. MediYoga may also assist in achieving a holistic approach, whereby physical,

mental and spiritual components are integrated. By using MediYoga as a self-management program may help patients manage their situation, which may lead to an improvement in HRQoL. This is the first study to evaluate perceptions and expressions of MediYoga, in patients with PAF, and there is a need for additional studies to test our results.

## Declarations 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.2018.09.002>.

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