Supplement

1 All categories and subcategories

1.1 Doctor-at-home system

- First impressions
- The look and the voice
- Perceived risk
- Preferences
- Motivation
- Advantages in comparison to doctors
- Disadvantages in comparison to doctors
- Trust
- Fewer doctor visits
- Contradiction to doctors
- Access care givers
- Needs and expectations (Desire for reassurance, Wish for support)

1.2 Experiences with doctors

- Adherence in regard to day-to-day situations (diet and sports)
- Adherence in regard medication
- Clarity of information
- Satisfaction

1.3 Living with the disease

- Obtaining disease-related information
- Probable cause of the HF
- Symptoms
- Role as a care giver
1.4 Acceptance of the new technology

- Assistance from others
- Usage in general
2 Interview guide: Patients with heart failure - PASSION-HF

Dear patient,

We would like to invite you to participate in our project. The aim is to design a new application to help patients living with heart failure. The new application will be called “Abby”. Abby will be a virtual doctor, who will help you with your medication, therapy and everyday life.

Our ultimate goal is to improve the health of people with heart failure and for this, we need your help. You can help to develop “Abby” by participating in this study. We will ask you a series of questions. The duration of the interview will be approximately 1 hour. There are no right or wrong answers. We are interested in your thoughts. I’ll take notes during the interview and might ask you some questions at the end to ensure I completely understood all you said.

If you have any further questions, we will be happy to discuss them with you after the interview.

Do you have any questions before we begin?

2.1 Questions

2.1.1 Opening questions

Can you provide a very brief description, only in a few sentences, of the most important stages of your medical history, for example about your first symptoms, the diagnosis and the current situation?

Please, describe briefly your typical week. What does it mean for you personally to live with heart failure?

How do you access the information about heart failure? What kind media do you use (books, internet)?

2.1.2 Requirements for “Abby”

Please try to imagine Abby. Abby is your personal, virtual doctor and you can use it at any time of day and night. Abby has information on all common medications and their side effects. She receives information from you; for example, your weight or blood pressure and may ask about symptoms such as tiredness or swellings. Abby suggests – similar to your doctor – what you should do about your disease in everyday life. These recommendations can be about everything, for example food, exercise, but also about medication.

In this short video you can see an already existing virtual nurse. It can help you, to better imagine Abby. It is not Abby. However, Abby will look similar, but has more features.

What is your first impression after watching this video? What do you think / feel about the idea to use this kind of application some day?
Would you trust the advice provided by Abby on medical topics, such as medication or the advice to visit your GP / HF-nurse? Would you follow the advice? Why or why not?

If the answer is that the patient would not trust Abby, add this: Imagine that the waiting times for a doctor's visit will become even longer in the future, would this change your mind in regard to using Abby?

What would you need to trust Abby? What would Abby have to do or offer? Could you please elaborate this point in more detail?

Would you trust the advice provided by Abby on health-related everyday topics, such as nutrition, exercise or travel? Would you follow the advice? Why or why not?

Could you please describe what exactly helps you to trust your doctor and follow his or her advice?

Imagine that Abby recommends something different than your doctor. Who would you trust more and why?

In which areas of your life with HF do you believe Abby could offer the most support?

Should your relatives also have access to your Abby, e.g. your partner or child, in order to know more about your current health status? Would you like that?

What is especially important to you, when it comes to trust? What could negatively affect your trust or even destroy your trust altogether? What could convince you to trust Abby more?

Do you think that Abby would be too complicated for you to handle? What would make Abby easy for you to navigate?

If Abby supports you reliably in your decision-making process and delivers all information you seek, can you foresee a time when you visit your GP / cardiologist / HF-nurse a lot less? Why or why not?

What advantages of an application like Abby in comparison to a doctor can you imagine?

What disadvantages of an application like Abby in comparison to a doctor can you imagine?

What would be the requirements for Abby to help you to treat yourself?

What must Abby be able to do and what should she look like to make it possible for you? Could you please elaborate this point in more detail?

What do you think your reaction would be to possible inaccuracies or even mistakes by Abby?

2.1.3 Experiences with doctors and nurses

Are there any specific issues related to your health condition, which you would like to discuss with your doctor / HF-nurse, but have not yet done so? What topics are that? Why didn’t it happen so far?
Do you always understand the explanation and information of your disease / treatment / medication provided by your doctor / HF-nurse? If not, what or why is it that you don’t understand? Feel free to provide examples.

Do you wish to be more involved in the management and take more responsibility for your heart failure condition?

Would you prefer a greater involvement in health-related decisions?

Have you adjusted your therapy and medication recommended by your doctor / HF-nurse? If so, what specifically and why? Do you discuss the changes you made later with your doctor / HF-nurse?

Have you adjusted your lifestyle according to the recommendations concerning your health given by your doctor / HF-nurse to your lifestyle? If so what specifically and why? Do you discuss the changes you made later with your doctor / HF-nurse?

Do you think that the number of doctor’s / HF-nurse’s visits you have had has been adequate so far? If not, please explain why?

2.1.4 Current healthcare situation / Healthcare gaps

Which aspects of the treatment of your doctor / HF-nurse do you like? Which aspects don’t you like? Could you please elaborate this point in more detail?

In which areas do you generally want more support from your doctors / HF-nurses?

Do you get support from an informal caregiver? From whom?

2.1.5 Technology acceptance in general

Do you use modern devices, such as a smartphone, tablet, fitness tracker or similar? What for do you use them for?

Whom (person, organization, media) do you trust when it comes to modern technology? For example, to set up your computer or mobile phone?

2.1.6 Final questions

We really value your input today and are most interested in what your opinion is relating to how we could better support your needs relating to HF – is there anything else of importance that you would like to add?

May we contact you again? Would you be interested in testing Abby in your daily life?
3 Interview guide: Family caregivers of patients with heart failure - PASSION-HF

Dear participant,

We would like to invite you to participate in our project. The aim is to design a new application to support patients living with heart failure. The new application will be called “Abby”. Abby will be a virtual doctor, who will help your relative with his or her medication, therapy and everyday life.

Our ultimate goal is to improve the health of people with heart failure and for this, we need your help. You can help to develop “Abby” by participating in this study. We will ask you a series of questions. The duration of the interview will be approximately 1 hour. There are no right or wrong answers. We are interested in your thoughts. I’ll take notes during the interview and might ask you some questions at the end to ensure I completely understand everything you said.

If you have any further questions, we will be happy to discuss them with you after the interview. Do you have any questions before we begin?

3.1 Questions

3.1.1 Opening questions

Please describe briefly your role in taking care of your relative with heart failure. Why did you take on this role?

How often do you seek information or talk about heart failure in general? If not much; why not?

Do you discuss this information with your relative with HF?

Do you discuss this information with the doctors or HF-nurses?

3.1.2 Requirements for “Abby”

Please try to imagine Abby. Abby is your personal, virtual doctor and you can use it at any time of day and night. Abby has information on all common medications and their side effects. She receives information from you; for example, your weight or blood pressure and may ask about symptoms such as tiredness or swellings. Abby suggests – similar to your doctor – what you should do about your disease in everyday life. These recommendations can be about everything, for example food, exercise, but also about medication.
In this short video you can see an already existing virtual nurse. It can help you, to better imagine Abby. It is not Abby. However, Abby will look similar, but has more features.

What is your first impression after watching this video? What do you think / feel about the idea to use this kind of application some day?

In which areas do you believe Abby could offer most support for your relative?

Would you trust the advice provided by Abby on health-related everyday topics, such as nutrition, exercise or travel? Would you advise your relative to follow the recommendations? Why?

Would you trust the advice provided by Abby on medical topics, such as medication or the advice to visit your GP? Would you advise your relative to follow the recommendations? Why?

Do you think, your relative would trust the recommendations of Abby? Why or why not?

If Abby supports you and your relative reliably in the decision-making process and delivers all information you both require, can you foresee a time when you visit your GP or HF team less often? Why?

What do you as a caregiver expect from Abby? For your relative? For yourself?

Do you think Abby will relieve the burden of taking care for your relative?

3.1.3 Experiences with doctors and nurses

Are you satisfied with the information on heart failure your relative receives from the doctor or the HF-nurse? If not, please elaborate.

Do you have the impression that your relative receives good advice from the doctor or HF-nurse for everyday life? If not, please elaborate.

Is your relative satisfied with her or his visits to the doctor or HF-nurse, who treats her or him for the HF? If not, please elaborate.

Do you think, that every doctor’s or HF-nurse visit has been necessary so far?

3.1.4 Current healthcare situation / Healthcare gaps

Which aspects of the treatment of your relative’s HF did you generally like best? Which aspects did you not like? Could you please elaborate this point in more detail?

In which situations could your relative receive better support than she or he does at the moment?

In which situations do you want more support with regard to the heart failure of your relative?

If your relative suffers from other diseases apart from the heart failure, do you feel that the doctor takes them all into consideration or do you feel each condition is treated independently?
3.1.5 Technology acceptance in general

Do you use modern devices, such as a smartphone, tablet, fitness tracker or similar? What do you normally use them for?

3.1.6 Motivation

How do you support your relative with healthcare decisions?

Do you wish to be more involved in the management and take more responsibility for his or her health?

Would you prefer a greater involvement in their health-related decisions?

Does your relative wish to be more involved in their HF management, taking more responsibility for his or her own health?

Would you like to play an active role in regard to Abby, for example enter the data, monitor them and check the implementation?

How could Abby motivate your relative to ensure that she or he follows the health-related recommendations? What should Abby provide?

3.1.7 Final question

We really value your input today and are most interested in what your opinion is relating to how we could better support your needs relating to HF – is there anything else of importance that you would like to add?

May we contact you again? Would you be interested in testing Abby together with your relative in hers or his daily life?