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DEVELOPMENT OF AN INTERVIEW SCRIPT ON ADVANCE DIRECTIVES IN HEART FAILURE BASED ON THE THEORY OF PLANNED BEHAVIOR*

DESENVOLVIMENTO DE UM ROTEIRO DE ENTREVISTA SOBRE DIRETIVAS ANTECIPADAS NA INSUFICIÊNCIA CARDÍACA BASEADO NA TEORIA DO COMPORTAMENTO PLANEJADO

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RESUMO

Objetivo: Desenvolver um roteiro de entrevista sobre o conhecimento em Insuficiência Cardíaca (IC), crenças sobre Diretivas Antecipadas (DAs) e a intenção de preencher as DAs, bem como avaliar sua validade de conteúdo e de face. **Métodos:** Estudo de métodos mistos desenvolvido em três etapas: Etapa 1) Estudo metodológico de desenvolvimento do roteiro baseado nas diretrizes brasileiras de IC, no modelo brasileiro de DAs e na Teoria do Comportamento Planejado. Etapa 2) Avaliação da validade de conteúdo por seis especialistas, que avaliaram os itens quanto à relevância prática, clareza, relevância teórica e dimensionalidade. Todos os itens com valores de Índice de Validade de Conteúdo (IVC) < 80% foram revisados e reavaliados. Etapa 3) Avaliação da validade de face por meio de teste cognitivo (estudo-piloto) realizado com 20 pacientes com IC em acompanhamento ambulatorial. **Resultados:** O roteiro incluiu 11 itens sobre conhecimento em IC e 21 itens sobre crenças e intenção de preencher as DAs. Treze itens foram revisados na Etapa 2, alcançando IVC > 80% e AC2 de Gwet > 0,80. Os pacientes relataram dificuldades com itens sobre crenças comportamentais, normativas e de controle, sugerindo a necessidade de educação prévia sobre as DAs. **Conclusões:** O roteiro apresentou validade de conteúdo e de face satisfatórias. Ele pode auxiliar enfermeiros e outros profissionais de saúde a identificar lacunas de conhecimento e crenças que influenciam o preenchimento das DAs, apoiando a autonomia do paciente e a tomada de decisão informada nos cuidados de fim de vida.

Descritores: Diretivas Antecipadas; Conhecimentos, Atitudes e Prática em Saúde; Insuficiência Cardíaca; Entrevistas como Assunto; Enfermagem; Autonomia Pessoal.

ABSTRACT

Objective: To develop an interview script on Heart Failure (HF) knowledge, beliefs about Advance Directives (ADs) and intention to complete ADs, as well as to assess its content and face validity. **Methods:** A multi-method study developed in three stages: Stage 1) Script development methodological study based on the Brazilian HF guidelines, the Brazilian AD model and the Theory of Planned Behavior. Stage 2) Content validity assessment by six experts, who evaluated the items for practical relevance, clarity, theoretical relevance and dimensionality. All items with Content Validity Index (CVI) values <80% were revised and re-evaluated. Stage 3) Face validity assessment through cognitive testing (piloting) conducted with 20 HF patients undergoing outpatient care. **Results:** The script included 11 items on HF knowledge and 21 items on beliefs and intention to complete ADs. Thirteen items were revised in Stage 2, achieving CVI >80% and Gwet's AC2 >0.80. The patients reported difficulties with items on behavioral, normative and control beliefs, suggesting the need for prior education about ADs. **Conclusions:** The script presented satisfactory content and face validity. It may help nurses and other healthcare professionals identify knowledge gaps and beliefs influencing AD completion, supporting patient autonomy and informed decision-making in end-of-life care.

Descriptors: Advance Directives; Health Knowledge, Attitudes, Practice; Heart Failure; Interviews; Nursing; Patient Autonomy.

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INTRODUCTION

Heart Failure (HF) is a common final stage of many heart conditions, contributing to high morbidity and mortality rates[1]. From May 2024 to May 2025, there were over 223,000 hospitalizations due to HF in the Brazilian public health system and more than 26,200 deaths related to this disease[2]. In advanced HF stages, the patients present symptoms upon minimum efforts or even at rest; these symptoms are associated with limitations in physical activity and reduced Quality of Life (QoL)[3-5].

Unlike many other diseases with a typical pattern characterized by functional decline, frequent readmissions and predictable evolution to death, HF lacks a consistent developmental scheme that may allow for accurate prognoses[5]. Because of this unpredictability and the challenges in establishing an accurate prognosis, Advance Care Planning (ACP) and Palliative Care (PC) should be initiated as early as an HF diagnosis is confirmed[6].

Advance Care Planning has been shown to improve QoL, patient satisfaction with end-of-life care and the quality of end-of-life communication for patients with HF[7], while specialized home-based PC services improve the patients' physical and emotional well-being and reduce the use of medical resources[6]. End-of-life care preferences are widely variable and may include a comfortable death, avoiding family burden, receiving sufficient treatment and knowing what to expect about the future condition, but also aggressive treatments such as ventilation support, hemodialysis and cardiopulmonary resuscitation[8-10].

Nevertheless, PC remains underused for patients with advanced cardiovascular diseases[6,11-12] and actions aimed at conducting ACP and end-of-life discussions with HF patients are still limited[13]. Active participation in ACP can be eased by completing Advance Directives (ADs), which are legal documents that outline a person's preferences regarding major medical decisions. Advance Directives specify the healthcare options that they desire or reject (both currently and in the future) and designate one or more individuals who will act as spokespersons on behalf of the patient if they become unable to communicate their preferences[14-16].

The prevalence of AD completion by patients with HF is low, ranging from 15.3% to 21.0%[17]. One of the challenges for AD completion is insufficient knowledge about the possibilities and potential benefits, as only 20.6% and 30.2% of the patients with HF engage in ACP conversations with their providers[9]. Healthcare professionals oftentimes report difficulties addressing end-of-life topics with patients and families due to discomfort in approaching the subject matter with patients, time constraints, uncertainty about patient preferences, fear of extinguishing hope and unpreparedness to discuss sensitive issues[10,18-19]. In contrast, the patients and their families wish to discuss end-of-life matters with healthcare professionals and be given truthful and timely information about their condition and prognosis, as well as to be more actively involved in decision-making regarding their healthcare[10,18].

Research focused on this end-of-life care for patients with cardiac diseases is essential to better understand their needs and improve quality and appropriateness of the care provided. The Theory of Planned Behavior (TPB) can help explain how autonomy is exercised and the identification of determinants related to end-of-life care decisions. From the TPB perspective, a behavior of interest for this study is completing ADs (action) during clinical stability periods (context) within the subsequent 30 days (timeframe). According to the TPB, a stronger intention indicates higher likelihood of following through with a behavior[19-23].

A systematic review on behavioral theories used in an end-of-life care research context found that most studies explored the TPB. However, only four evaluated the "intention", although all studies investigated attitude, subjective norm and perceived behavioral control[19], thereby posing a knowledge gap. Given the scarcity of research evaluating the intention to complete ADs by patients with HF informed by the TPB, we aimed at developing an interview script on HF knowledge, beliefs about ADs and intention to complete ADs and to assess its content and face validity.

METHOD

Ethical aspects

The project was approved by the Research Ethics committees of *Universidade Federal de São Paulo* and *Instituto Dante Pazzanese de Cardiologia* (protocols 3,317,777 and 3,461,819, respectively). The participants were guaranteed anonymity and confidentiality and provided written consent forms.

Type of study

A multi-method study developed in three stages: Stage 1) A methodological study to develop an interview script; Stage 2) Content validity assessment for the script; and Stage 3) Face validity assessment for the script.

Interview script development

The interview script to assess the patients' knowledge about HF was specifically focused on understanding the chronic and progressive nature of the disease. The items were developed in accordance with the Brazilian Guideline for Chronic and Acute Heart Failure from the Brazilian Society of Cardiology[24].

The section to assess the intention to complete ADs and the beliefs about ADs included items based on the assumptions set forth in the TPB[19-23] and on the Brazilian AD Model[25]. The items were created considering the theory's domains: Behavioral beliefs, Normative beliefs and Control beliefs.

According to the TPB, the intention to complete ADs will be motivated by predominantly favorable attitudes toward them, predominantly supportive subjective norms regarding them and perceived behavioral control. The effect of intention on behavior is also moderated by the actual behavioral control degree. The attitudes are classified as affective (emotional impulses generated by the prospect of performing a behavior) and as instrumental (cognitive considerations about the benefits of performing a behavior). The attitudes are determined by accessible behavioral beliefs about the likely expected outcomes of the behavior[19-23].

The subjective norm refers to the perceived social pressure to perform a behavior and is determined by a person's motivation to comply with different reference groups, the likelihood of behavior approval by a reference individual/group (e.g., family, friends) and the belief that other significant people engage in the same behavior: the accessible

normative beliefs. Perceived behavioral control is determined by the set of accessible control beliefs, in combination with the perceived power of each control factor. The control beliefs refer to the subjective likelihood that a factor may ease behaviors or not, e.g., the belief that prior conversations with a healthcare team can render completing ADs easier[19-23].

The TPB generally explains 19.3% of the behavioral variance (from 13.8% to 23.9%) and 44.3% of the intention to adopt a given behavior (from 42% to 45%)[21,26].

Content validity

In order to assess the script for content validity, an experts' panel was assembled to evaluate the items using the Delphi technique. As a minimum of five experts would provide sufficient control level for chance agreement[27] using the CVI, six individuals that were healthcare professionals (two nurses, two psychologists and a physician) or lawyers (n=1) with prior academic knowledge were invited to participate. The inclusion criteria were as follows: having completed Higher Education at least five years before the research, specialist degree as a minimum and/or at least one year of practical experience in Bioethics, Cardiology, PC or the TPB. The invitations were emailed with an explanation about the objectives of this stage.

A 10-day response period was granted, with an additional 10-day extension if needed. The experts were asked to evaluate each item in terms of practical relevance, clarity, theoretical relevance and dimensionality. Practical relevance referred to whether the items aligned with the study; clarity assessed whether they were understandable to the target population; theoretical relevance examined their importance from a theoretical standpoint, considering the study objectives and population; and dimensionality evaluated whether they were consistent with the intended construct.

The experts used a three-point agreement scale ("-1 = I disagree", "0 = I partially agree" or "+1 = I agree") for each item. In the case of those classified as "0" or "-1", suggestions for improvements were requested. The experts' agreement was calculated using the Content Validity Index (CVI) and Gwet's AC2 coefficient, with a 95% Confidence Interval (95% CI). The CVI was calculated as the sum of the "+1" scores on each question, divided by the number of experts and multiplied by 100[28].

The agreement coefficient was interpreted using Altman's classification: poor (<0.20), fair (0.20–0.39), moderate (0.40–0.59), good (0.60–0.79) and excellent (≥0.80)[29]. Items with CVI values above 80% and agreement coefficients ≥0.80 with statistical significance were retained in the interview script. Items with CVIs and/or an agreement coefficients below 0.80 were revised according to the experts' suggestions and subjected to a second evaluation round, totaling two Delphi rounds[28].

A descriptive analysis was performed for the categorical variables using absolute and relative frequencies (n, %). As for the quantitative variables, summary measures (mean, Standard Deviation [SD], median and Interquartile Range [IQR]) were calculated for the overall sample and for the subgroups of patients with and without the intention to complete ADs. All analyses were conducted using the R software, version 4.0.2 (open source).

Face validity

In order to assess face validity of the script, cognitive testing (piloting) was conducted with 20 patients from the outpatient Cardiology department at *Instituto Dante Pazzanese de Cardiologia* between January and February 2020. The lead researcher explained the purpose of this stage to the patients and invited them to participate while they were waiting for their medical appointments.

The inclusion criteria were age ≥18 years old, Glasgow Comma Scale score of 15, ability to read and speak Portuguese and HF medical diagnosis. The exclusion criteria were as follows: clinical instability such as dyspnea, tachycardia, acute symptomatic hypotension episodes, non-specific discomfort and/or precordial pain that might compromise the patients' clinical conditions.

Sociodemographic and clinical data were collected and the interview script was applied. The patients were asked how understandable the items were and offered the opportunity to suggest improvements. The suggestions were recorded and subsequently analyzed by the researchers and the necessary modifications were made accordingly.

RESULTS

Interview script development

Eleven statements addressing the chronic and progressive nature of HF were developed (Table 1), covering prognosis, information sources about the condition, the importance of pharmacological and non-pharmacological treatments and signs and symptoms indicating clinical deterioration. In addition, 21 statements on beliefs and intention to complete ADs were developed, informed by the TPB.

Content validity

All 32 items underwent a content validity assessment by six experts, whose demographic and professional characteristics are detailed in Table 1.

Table 1 - Demographic and professional characteristics of the experts' panel

Expert	Profession	Gender	Age (years old)	Highest schooling level	Area of expertise
1	Lawyer	Male	36	PhD	Bioethics
2	Nurse	Male	45	PhD	Bioethics
3	Psychologist	Female	37	MSc	Palliative Care
4	Psychologist	Female	43	MSc	Palliative Care
5	Nurse	Male	41	MSc	Cardiology
6	Physician	Male	39	Specialist	Bioethics

Source: the authors, 2020.

After two Delphi rounds, the interview script obtained unanimous experts' agreement (CVI = 100%). In the first Delphi round, 23 items achieved CVI values ≥80%. Nine items that did not meet this threshold were revised and, although satisfactory, another four were refined based on the experts' feedback. Consequently, 13 items were subjected to a second Delphi round.

Some examples of the experts' suggestions were as follows:

- In the "If you were to formulate your Advance Directives, what would be your priorities? Option A, live as long as possible" item, changing Option A to "Live as long as possible, regardless of my condition".
- In the "If I complete my Advance Directives, I believe that my family will approve my wishes and follow my requests" and "If I complete my Advance Directives, I believe that my doctor/healthcare team will approve my wishes and follow my requests" items; changing "approve" to "respect".

The results indicated excellent inter-rater agreement across all sections (Table 2).

Table 2 - Inter-rater Gwet's AC2 coefficient for the script items

Section	Item numbers	Gwet's AC2 (95% Confidence Interval)
Knowledge about Heart Failure	1 to 11	0.952 (0.910; 0.994)
Intention to complete Advance Directives	12 to 21	0.879 (0.829; 0.929)
Beliefs about Advance Directives	22 to 32	0.975 (0.942; 1.000)

Source: the authors, 2020.

Face validity

Cognitive testing with each patient lasted a mean of 30 minutes. The participants' sociodemographic and clinical characteristics are presented in Table 3.

Table 3 - Demographic and clinical profile of the patients participating in the face validity assessment stage for the interview script (n=20)

Variable	Measurement
Gender, n (%)	
Female	12 (60)
Male	8 (40)
Age (years old), mean (SD)	60.8 (10.2)
Marital status, n (%)	
Married	14 (70)
Single	4 (20)
Other	2 (10)
Ethnicity, n (%)	
White	11 (55)
Brown	6 (30)
Black	3 (15)
Religion, n (%)	
Catholic	10 (50)
Evangelical	8 (40)
Others	2 (10)
Employment status, n (%)	
Retired	12 (60)
Active	8 (40)
Schooling (years), mean (SD)	4.1 (4.6)
Per capita family income (minimum wages), mean (SD)	1.2 (0.9)
Heart Failure etiology, n (%)	
Chagas' Disease	6 (30)
Cardiomyopathy	6 (30)
Others	8 (40)
Left ventricular ejection fraction classification, n (%)	
Preserved	10 (50)
Decreased	8 (40)
Intermediate	2 (10)
Number of comorbidities, mean (SD)	5.2 (2.8)
Number of cardiological medications in use, mean (SD)	4.5 (3.2)

SD = Standard Deviation
Source: the authors, 2020.

The participants' feedback and the research team decisions are presented in Chart 1.

The final version of the script is presented in Chart 2.

Chart 1 - Feedback from the patients with Heart Failure upon completing the interview script and modifications in the face validity stage

Original items	**Decisions based on patients' completion**
"True" or "False" items	*Items reformulated as questions to ease participants understanding*
Do you understand the problem affecting your heart? ( ) Yes ( ) No	Do you understand the problem affecting your heart? ( ) Yes ( ) No *( ) Partly* *( ) I don't know*
Do you actively seek information about your illness? (in addition to medical appointments) ( ) Yes ( ) No	Do you actively seek information about your illness? (in addition to medical appointments) ( ) Yes ( ) No *( ) I don't know*
I take medications to control my symptoms and prevent heart failure from worsening ( ) True ( ) False ( ) I don't know	*Items merged into* *What are the medications you take for?* *( ) Correct answer* *( ) Incorrect answer* *( ) Partially correct answer* *( ) Does not know*
I take medications that heal heart failure ( ) True ( ) False ( ) I don't know	
If heart failure worsens, I might have symptoms such as breathlessness, tiredness, swelling and chest pain. ( ) True ( ) False ( ) I don't know	*Items merged into* *Which signs and symptoms appear when heart failure worsens?* *( ) Correct answer* *( ) Incorrect answer* *( ) Partially correct answer* *( ) Does not know*
If treatment is not done correctly, heart failure will certainly worsen. ( ) True ( ) False ( ) I don't know	
Does this person (or these people) know that they should make these decisions for you? ( ) Yes ( ) No ( ) I don't know	*In cases of friends or family:* Does this person (or these people) know that they should make these decisions for you? ( ) Yes ( ) No ( ) I don't know
Does this person (or these people) know what your wishes are? ( ) Yes ( ) No ( ) I don't know	*In cases of friends or family:* Does this person (or these people) know what your wishes are? ( ) Yes ( ) No ( ) I don't know
Items related to behavioral, normative and control beliefs o I believe that formulating my advance directives will ensure that my end-of-life care wishes are respected o If I complete my advance directives, I believe that my family will respect my wishes and follow my requests. o I believe that completing advance directives will be easier if I talk in advance with my doctor/healthcare team about my illness and death.	*The participants had difficulties answering these items. The research team discussed the potential reasons for such difficulties. Notably, only one patient reported prior knowledge about ADs, while 19 required an explanation of the concept. This means that almost all participants had to consider a new concept, in addition to a hypothetical future decision to answer these questions.* *These items were kept in the script as approved in the content validity stage to be tested with a larger sample, after due explanation of the advance directives.*
Would you complete your advance directives? When?	The "When" question was removed because of the difficulty considering a new concept, in addition to a hypothetical future decision to answer these questions. *Would you complete your advance directives?*

Note: the changes are shown in *italics*
Source: the authors, 2020.

Chart 2 - Script to assess knowledge about heart failure, intention to complete Advance Directives and beliefs about them, following content and face validation

About knowledge regarding the chronic and progressive nature of heart failure:
1) Do you understand the problem affecting your heart? ( ) Yes ( ) No ( ) Partly ( ) I don't know
2) Do you actively seek information about your illness? (in addition to medical appointments) ( ) Yes ( ) No ( ) I don't know
3) If yes, how do you find out about your illness? a. ( ) Books and magazines b. ( ) Internet c. ( ) Friends d. ( ) Doctors e. ( ) Other health professional f. ( ) Others
4) Can heart failure be cured? ( ) Correct answer ( ) Incorrect answer ( ) Partially correct answer ( ) Does not know
5) Is it possible for the sick heart of a person with heart failure to return to normal? ( ) Correct answer ( ) Incorrect answer ( ) Partially correct answer ( ) Does not know
6) What are the medications you take for? ( ) Correct answer ( ) Incorrect answer ( ) Partially correct answer ( ) Does not know
7) Why should you drink few liquids and eat little salt? ( ) Correct answer ( ) Incorrect answer ( ) Partially correct answer ( ) Does not know
8) Can heart failure worsen even if you follow the treatment correctly? ( ) Correct answer ( ) Incorrect answer ( ) Partially correct answer ( ) Does not know
9) Which signs and symptoms appear when heart failure worsens? ( ) Correct answer ( ) Incorrect answer ( ) Partially correct answer ( ) Does not know
Intention to complete Advance Directives
10) Have you ever talked to anyone about the care you would like to receive if your illness progresses? ( ) Yes ( ) No ( ) I don't know
11) If your illness worsens, would you like to know the whole truth, even if the news is not good? ( ) Yes ( ) No ( ) I don't know
12) If you are seriously ill (and cannot express yourself), do you want decisions about your treatment to be made by: a. ( ) Healthcare team b. ( ) Yourself c. ( ) Family d. ( ) Friend e. ( ) Other f. ( ) I don't know how to answer
13) In cases of friends or family: Does this person (or these people) know that they should make these decisions for you? ( ) Yes ( ) No ( ) I don't know
14) In cases of friends or family: Does this person (or these people) know what your wishes are? ( ) Yes ( ) No ( ) I don't know
15) Have you heard about advance directives? If yes, where? ( ) Yes ( ) No ( ) I don't know
16) Do you think advance directives are useful? ( ) Yes ( ) No ( ) I don't know
17) Would you complete your Advance Directives? ( ) Yes ( ) No ( ) I don't know
18) If you were to formulate your Advance Directives, what would be your priorities? a. ( ) Live as long as possible, regardless of my health condition b. ( ) Alleviate pain c. ( ) Reduce symptoms such as shortness of breath and fatigue d. ( ) Stay close to family/friends for as long as possible e. ( ) Preserve my independence/respect my wishes and choices f. ( ) Communicate with people g. ( ) Maintain consciousness and not be sedated, even if it were to relieve my suffering h. ( ) Use all medical resources even if I am deteriorating i. ( ) Avoid procedures that would prolong my life if I am suffering greatly j. ( ) Not be connected to machines and devices k. ( ) Not feel thirsty or hungry l. ( ) Pray/tend to spiritual matters m. ( ) Stay at home n. ( ) Ask for forgiveness/forgive someone o. ( ) Others p. ( ) I don't know

(continued)

Beliefs about Advance Directives
Behavioral beliefs
I believe that completing my advance directives...
19) will ensure that my end-of-life care wishes are respected. ( ) Yes ( ) No ( ) I don't know
20) will prevent future complications in deciding my treatment. ( ) Yes ( ) No ( ) I don't know
21) will prevent unnecessary hospitalizations and procedures. ( ) Yes ( ) No ( ) I don't know
22) will help my family make decisions about my treatment. ( ) Yes ( ) No ( ) I don't know
23) will help the doctor and healthcare team make decisions about my treatment. ( ) Yes ( ) No ( ) I don't know
Normative beliefs
If I complete my advance directives, I believe that...
24) my family will respect my wishes and follow my requests. ( ) Yes ( ) No ( ) I don't know
25) My doctor/healthcare team will respect my wishes and follow my requests. ( ) Yes ( ) No ( ) I don't know
Control beliefs
I believe that completing advance directives will be easier if...
26) I talk in advance with my doctor/healthcare team about my illness and death. ( ) Yes ( ) No ( ) I don't know
27) it is not a bureaucratic process (e.g., not needing to register advance directives in a notary) ( ) Yes ( ) No ( ) I don't know
28) I am sure that I can change my mind any time. ( ) Yes ( ) No ( ) I don't know

Source: the authors, 2020.

DISCUSSION

In this study, an interview script on HF knowledge, beliefs about ADs and intention to complete ADs was developed, informed by the TPB. The interview script demonstrated excellent content validity after two Delphi rounds, confirming experts' consensus on the items' relevance, clarity and dimensionality. This finding is in line with methodological recommendations emphasizing iterative refinement and experts' judgment as strategies to ensure content representativeness in instruments[3]. Adjustments based on the experts' feedback, including semantic refinements and merging of overlapping items, strengthened the instrument's conceptual coherence and linguistic precision.

Rephrasing True/False statements into direct questions and merging overlapping items are reasonable changes after face-validity testing, especially in older adults with HF, who oftentimes have heterogeneous health literacy and difficulties with abstract and hypothetical wording. Recent adaptation studies in palliative contexts emphasize clarity, plain language and cultural/linguistic fit to improve patient comprehension and response quality[30-31]. Replacing “approve” with “respect” and omitting the “when” question contributed to making the language more autonomy-oriented, ensuring greater consistency with patient-centered decision-making and the ethical foundations of ADs.

As HF advances and patients come to realize that they cannot control its course, a strong desire to preserve autonomy often surfaces and their control beliefs become more pronounced, increasing their awareness of internal and external factors they can exert an influence on[20,22-23]. Thus, completing ADs emerges as a crucial component in preserving their autonomy when facing an advancing disease.

However, healthcare providers rarely engage in conversations about ACP with their cardiovascular patients[8-9] and AD completion prevalence is low[14-15]. While numerous studies have explored aspects about HF, ADs and patient beliefs and behaviors individually[20,22-23], the strength of this survey lies in its theory-based approach to operationalize an assessment of the patients' intention to complete ADs in the Cardiology context, an aspect that represents a knowledge gap[19]. By addressing the HF patients' understanding about their disease, knowledge gaps and intentions and beliefs about ADs, the script can promote informed decision-making and enhance patient-centered care[32].

The TPB has been used to identify predictors of adherence to home-based cardiac rehabilitation exercises in the Cardiology context[33], to drive educational interventions to promote healthy lifestyles in women susceptible to cardiovascular diseases[34] and to improve women's nutritional behaviors associated with cardiovascular diseases[26]. However, in the end-of-life care research context, exploring intention poses a knowledge gap. In this study, this gap is addressed by a focus on intention to complete ADs. In addition, piloting the interview script with HF patients enabled modifications to allow for understandability by a different target population.

Despite the integral role played by nurses in easing ACP, a significant gap remains in evidence-based, structured training models to support them. A recent scoping review found that, although 19 out of 33 studies incorporated existing models, none of them identified a fully validated nurse-led ACP training program[35]. Nurse practitioners typically initiate ACP conversations using structured prompts and patient cues; however, they identified considerable variability in communication styles and timing, thereby highlighting a need for standardized ACP frameworks to support nurse practitioner-led dialogue[36]. This dialogue might be informed by our script, which may serve as a communication aid, ensuring that healthcare providers ask critical questions about HF and ADs in a way that patients can understand[32], in addition to directing proper addressing of beliefs.

It is important to consider our findings within the context of certain limitations. The absence of an available measuring instrument with adequate psychometric properties to assess what HF patients specifically know about the chronic and progressive nature of the condition required developing study-specific questions. However, these questions were only evaluated for face validity with a small sample of patients, without assessing their internal structure. Therefore, it is crucial to emphasize that this set of questions is not intended for indiscriminate use as a standardized knowledge measuring tool.

Future research should further investigate its validity and reliability across different contexts and populations and employ it to explore HF patients' intentions to complete ADs. In primary care, patient education booklets with or without traditional counseling by primary care physicians have proven ineffective in increasing AD completion rates[37]. Therefore, investigating both knowledge and beliefs may inform tailored and effective interventions. Both in specialized Nursing care and in Palliative Care, the script may ease timely and sensitive conversations about end-of-life decisions, ensuring that care aligns with the patients' wishes and promoting shared decision-making within interdisciplinary teams[38].

During face validity testing, 19 participants required an explanation of the AD concept, suggesting limited familiarity with it, and some individuals experienced difficulties understanding items related to behavioral, normative and control beliefs. In fact, related research highlights gaps in knowledge and awareness of ADs among individuals with cardiovascular diseases[39] and heart failure[40]. Moreover, people with HF have lower levels of awareness and engagement with ADs than those typically observed among patients with cancer[40], which highlights the need for studies specifically focused on HF.

This difficulty understanding some items may have introduced a response bias. This can also be explained by the fact that the patients required that the concept of AD be clarified. According to the TPB, intervals up to five weeks between assessing the intention and observing the behaviors are associated with stronger correlations with initiating actions when compared to longer intervals[20,22-23]. Therefore, future studies should include some preparatory educational framing before probing deeper beliefs or intentions about ADs, in addition to enabling sufficient time to process the newly introduced ones. Longitudinal studies might be designed to examine changes over time, both in the intention to complete ADs and in their actual completion.

CONCLUSION

An interview script was developed to assess knowledge about Heart Failure, intention to complete Advance Directives and beliefs about these directives. The script achieved satisfactory evidence in terms of content and face validity. Additional studies with representative samples should be conducted to test the psychometric properties of the script in individuals with Heart Failure in different settings, including public and private institutions, outpatient Cardiology clinics, hospices and hospitals. Caution should be employed during hospitalization, as individuals might be in a more vulnerable emotional state. Specifically, the psychometric properties of each dimension should be tested individually, as they measure different phenomena.

*Paper extracted from the Doctoral Thesis entitled “Intenção de elaboração de Diretivas Antecipadas de Vontade de pacientes com insuficiência cardíaca em tratamento ambulatorial”, presented to the Postgraduate Program Programa de Pós-Graduação em Enfermagem of the Universidade Federal de São Paulo, São Paulo, SP, Brazil, in the year 2022.

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CONFLICT OF INTERESTS

The authors have declared that there is no conflict of interests.

REFERENCES

1. Bozkurt B, Coats AJS, Tsutsui H, Abdelhamid CM, Adamopoulos S, Albert N, et al. Universal definition and classification of heart failure: a report of the Heart Failure Society of America, Heart Failure Association of the European Society of Cardiology, Japanese Heart Failure Society and Writing Committee of the Universal Definition of Heart Failure: Endorsed by the Canadian Heart Failure Society, Heart Failure Association of India, Cardiac Society of Australia and New Zealand, and Chinese Heart Failure Association. Eur J Heart Fail. 2021;23(3):352-380. https://doi.org/10.1002/ejhf.2115
2. Brasil. Ministério da Saúde. Sistema de Informações Hospitalares do SUS - DATASUS. Morbidade hospitalar do SUS por local de internação - Brasil: insuficiência cardíaca, maio 2024-maio 2025 [Internet]. Brasília: Ministério da Saúde; c2025 [cited 2025 Aug 12]. Available from: http://tabnet.datasus.gov.br/cgi/deftohtm.exe?sih/cnv/nibr.def
3. Truby LK, Rogers JG. Advanced Heart Failure: Epidemiology, Diagnosis, and Therapeutic Approaches. JACC Heart Fail. 2020;8(7):523-536. https://doi.org/10.1016/j.jchf.2020.01.014
4. Koshy AO, Gallivan ER, McGinlay M, Straw S, Drozd M, Toms AG, et al. Prioritizing symptom management in the treatment of chronic heart failure. ESC Heart Fail. 2020;7(5):2193-2207. https://doi.org/10.1002/ehf2.12875
5. Lee JH, Hwang KK. End-of-Life Care for End-stage Heart Failure Patients. Korean Circ J. 2022;52(9):659-679. https://doi.org/10.4070/kcj.2022.0211
6. Mosoiu D, Rogozea L, Landon A, Bisoc A, Tint D. Palliative Care in Heart Failure: A Public Health Emergency. Am J Ther. 2020;27(2):e204-e223. https://doi.org/10.1097/mjt.0000000000001067
7. Schichtel M, Wee B, Perera R, Onakpoya I. The Effect of Advance Care Planning on Heart Failure: a Systematic Review and Meta-analysis. J Gen Intern

Med. 2020;35(3):874-884. https://doi.org/10.1007/s11606-019-05482-w
8. Kitakata H, Kohno T, Kohsaka S, Fujisawa D, Nakano N, Shiraishi Y, et al. Preferences on advance care planning and end-of-life care in patients hospitalized for heart failure. ESC Heart Fail. 2021;8(6):5102-5111. https://doi.org/10.1002/ehf2.13578
9. Kitakata H, Kohno T, Kohsaka S, Fujisawa D, Nakano N, Sekine O, et al. Social Isolation and Implementation of Advanced Care Planning Among Hospitalized Patients With Heart Failure. J Am Heart Assoc. 2022; 11(21):e026645. https://doi.org/10.1161/jaha.122.026645
10. Kim J, An M, Heo S, Shin MS. Attitudes toward advance directives and prognosis in patients with heart failure: a pilot study. Korean J Intern Med. 2020;35(1):109-118. https://doi.org/10.3904/kjim.2018.158
11. Marcondes-Braga FG, Moura LAZ, Issa VS, Vieira JL, Rohde LE, Simões MV, et al. Emerging Topics Update of the Brazilian Heart Failure Guideline – 2021. Arq Bras Cardiol. 2021;116:1174-1212. https://doi.org/10.36660/abc.20210367
12. Graven LJ, Kitko L, Abshire Saylor M, Allen L, Durante A, Evangelista LS, et al. Palliative Care and Advanced Cardiovascular Disease in Adults: Not Just End-of-Life Care: A Scientific Statement From the American Heart Association. Circulation. 2025;151(21):e1030-e1042. https://doi.org/10.1161/cir.0000000000001323
13. Cavanagh CE, Rosman L, Chui P, Minges K, Desai NR, Goodlin S, et al. Advance Care Planning and End-of-Life Education in Heart Failure: Insights From the NCDR PINNACLE Registry. Circ Cardiovasc Qual Outcomes. 2023;16(1):e008989. https://doi.org/10.1161/circoutcomes.122.008989
14. Butler J, Binney Z, Kalogeropoulos A, Owen M, Clevenger C, Gunter D, et al. Advance directives among hospitalized patients with heart failure. JACC Heart Fail. 2015;3(2):112-121. https://doi.org/10.1016/j.jchf.2014.07.016
15. Kim J, Heo S, Kim BR, Suh SY, Shim JL, An M, et al. The Impact of Advance Directive Perspectives on the Completion of Life-Sustaining Treatment Decisions in Patients with Heart Failure: A Prospective Study. J Clin Med. 2021;10(24):5962. https://doi.org/10.3390/jcm10245962
16. Prentice TC, Lawson R. The impact of an advance care planning intervention for patients hospitalized with acute decompensated heart failure. Heart Lung. 2021; 50(1):101-105. https://doi.org/10.1016/j.hrtlng.2020.08.003
17. Mathew T, Patel A, DiGrande K, Michelis ND, Mody B, Lombardo D. Improving Advance Care Planning for Hospitalized Patients With Heart Failure. Palliat Med Rep. 2023;4(1):339-343. https://doi.org/10.1089/pmr.2023.0035
18. Sampaio C, Renaud I, Leão PP. "The roller coaster ride of heart failure": nursing staff's perceptions of dignity. Acta Paul. Enferm. (Online). 2020;33:1-8. https://doi.org/10.37689/acta-ape/2020AO0165
19. Scherrens AL, Beernaert K, Robijn L, Deliens L, Pauwels NS, Cohen J, et al. The use of behavioural theories in end-of-life care research: A systematic review. Palliat Med. 2018;32(6):1055-1077. https://doi.org/10.1177/0269216318758212
20. Ajzen I. The theory of planned behaviour: reactions and reflections. Psychol Health. 2011;26(9):1113-1127. https://doi.org/10.1080/08870446.2011.613995
21. McEachan RRC, Conner M, Taylor NJ, Lawton RJ. Prospective prediction of health-related behaviours with the Theory of Planned Behaviour: a meta-analysis. Health Psychol Rev. 2011;5(2):97-144. https://doi.org/10.1080/17437199.2010.521684
22. Ajzen I. Theory of planned behavior diagram [Internet]. Amherst (MA): University of Massachusetts; 2019 [cited 2025 Aug 12]. Available from: https://people.umass.edu/aizen/tpb.diag.html
23. Ajzen I. The theory of planned behavior: Frequently asked questions. Hum Behav Emerg Technol. 2020;2(4):314-324. https://psycnet.apa.org/doi/10.1002/hbe2.195
24. Comitê Coordenador da Diretriz de Insuficiência Cardíaca, Rohde LEP, Montera MW, Bocchi EA, Clausell NO, Albuquerque DC de, et al. Diretriz Brasileira de Insuficiência Cardíaca Crônica e Aguda. Arq Bras Cardiol. 2018;111(3):436-539. https://doi.org/10.5935/abc.20180190
25. Dadalto L, Tupinambás U, Greco DB. Diretivas antecipadas de vontade: um modelo brasileiro. Rev. Bioét. (online) [Internet]. 2013 [cited 2025 Aug 12];21(3):463-476. Available from: https://www.scielo.br/j/bioet/a/SzZm7jf3WDTczJXfVFpF7GL/?lang=pt
26. Khani Jeihooni A, Jormand H, Saadat N, Hatami M, Abdul Manaf R, Afzali Harsini P. The application of the theory of planned behavior to nutritional behaviors related to cardiovascular disease among the women. BMC Cardiovasc Disord. 2021;21(1):589. https://doi.org/10.1186/s12872-021-02399-3
27. Lynn MR. Determination and quantification of content validity. Nurs Res. 1986;35(6):382-385. https://doi.org/10.1097/00006199-198611000-00017
28. Alexandre NMC, Coluci MZO. Validade de conteúdo nos processos de construção e adaptação de instrumentos de medidas. Cien Saude Colet. 2011;16(7):3061-3068. https://doi.org/10.1590/S1413-81232011000800006
29. Altman DG. Practical statistics for medical research. New York: Chapman and Hall/CRC; 1990. https://doi.org/10.1201/9780429258589
30. Bhardwaj T, Chambers RL, Watson H, Srividya, Higginson IJ, Hocaoglu MB. Translation and cross-cultural adaptation of the Integrated Palliative Care Outcome Scale in Hindi: Toward capturing palliative needs and concerns in Hindi speaking patients. Palliat Med. 2023;37(3):391-401. https://doi.org/10.1177/02692163221147076
31. Křemenová Z, Vlčková K. Translation, cultural adaptation, and validation of the Integrated Palliative Outcome Scale-renal (IPOS-r) to Czech. BMC Palliat Care. 2022;21(1):152. https://doi.org/10.1186/s12904-022-01044-w
32. Sharkiya SH. Quality communication can improve patient-centred health outcomes among older patients: a rapid review. BMC Health Serv Res. 2023;23(1):886. https://doi.org/10.1186/s12913-023-09869-8
33. Yang Z, Jia H, Wang A. Predictors of home-based cardiac rehabilitation exercise adherence among patients with chronic heart failure: a theory-driven

cross-sectional study. BMC Nurs. 2023;22(1):415. https://doi.org/10.1186/s12912-023-01566-5

34. Izadpanah P, Saadat N, Kabiri B, Mohammadkhah F, Afzali Harsini P, Khani Jeihooni A. The Effect of Base Theory Educational Intervention on Health-Promoting Lifestyle in Women Susceptible to Cardiovascular Diseases: Application of the Theory of Planned Behavior. Cardiol Res Pract. 2023;2023:8528123. https://doi.org/10.1155/2023/8528123
35. Whitehead P, Frechman E, Johnstone-Petty M, Kates J, Tay DL, DeSanto K, et al. A scoping review of nurse-led advance care planning. Nurs Outlook. 2022; 70(1):96-118. https://doi.org/10.1016/j.outlook.2021.08.002
36. El Hussein MT, Favel D. Advanced Care Planning Conversations: A Scoping Review of Nurse Practitioners' Approach. J Nurse Pract. 2025;21(7):105421. https://doi.org/10.1016/j.nurpra.2025.105421
37. Xu C, Yan S, Chee J, Lee EPY, Lim HW, Lim SWC, et al. Increasing the completion rate of the advance directives in primary care setting - a randomized controlled trial. BMC Fam Pract. 2021;22(1):115. https://doi.org/10.1186/s12875-021-01473-1
38. Svendsen SJ, Grov EK, Staats K. Patients' experiences with shared decision-making in home-based palliative care - navigation through major life decisions. BMC Palliat Care. 2024;23(1):101. https://doi.org/10.1186/s12904-024-01434-2
39. Macedo JC, Rego F, Nunes R. Perceptions, Attitudes, and Knowledge toward Advance Directives: A Scoping Review. Healthcare (Basel). 2023;11(20):2755. https://doi.org/10.3390/healthcare11202755
40. Kim J, Choi J, Shin MS, Kim M, Seo E, An M, et al. Do advance directive attitudes and perceived susceptibility and end-of-life life-sustaining treatment preferences between patients with heart failure and cancer differ? PLoS One. 2020;15(9):e0238567. https://doi.org/10.1371/journal.pone.0238567

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All authors are responsible for the textual writing and critical review of the intellectual content, for the final published version, and for all ethical, legal, and scientific aspects related to the accuracy and integrity of the study.