

## Original Article

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# Development of the conversation tool “I-HARP for COPD” for early identification of palliative care needs in patients with chronic obstructive pulmonary disease

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**Abstract**

**Objectives.** This study aimed to develop the conversation tool “I-HARP for COPD” for timely identification of palliative care needs in Dutch patients with chronic obstructive pulmonary disease (COPD).

**Methods.** An iterative and participatory research design was used to develop “I-HARP for COPD”. There were 2 phases to the development of “I-HARP for COPD”: content development and testing. A review of current literature, parallel focus groups, and a questionnaire among experts were used to develop the content of “I-HARP for COPD”. “I-HARP for COPD” was then assessed by health-care professionals (HCPs) in clinical practice for understanding, difficulty, and relevance.

**Results.** A total of 46 HCPs, 6 patients, 1 informal caregiver, and 1 bereaved informal caregiver participated in this study. “I-HARP for COPD” included 14 screening questions, additional in-depth questions, and recommendations to address identified needs. The content of “I-HARP for COPD” was accepted by 86.2% of the HCPs.

**Significance of results.** “I-HARP for COPD” was successfully developed for providing guidance in the palliative care of Dutch patients with COPD and their informal caregivers. By supporting HCPs with “I-HARP for COPD”, they are better able to timely identify and direct palliative care needs.

**Introduction**

Chronic obstructive pulmonary disease (COPD) is a complex disease that comes with significant physical, social, psychological, existential, and socioeconomic burdens (Disler et al. 2022; Vanfleteren et al. 2020). The presence and the intensity of these burdens are highly personal and have a negative impact on quality-of-life (Bolton et al. 2022). COPD has a high prevalence among patients in Western Europe and is an important cause of death. Despite this high disease burden, reduced quality-of-life, and high prevalence, health-care professionals (HCPs) do not always recognize these burdens and the underlying unmet needs of patients with COPD in time (Broese et al. 2021a, 2021b).

Timely introduction of palliative care could reduce the number of unmet needs, improve self-management and self-confidence, and perceive symptom control (Broese et al. 2021b; Siouta et al. 2019). Discussions about palliative care between patients with COPD, informal caregivers, and HCPs support both patients and informal caregivers in knowing and understanding palliative care needs and end-of-life wishes (Smith et al. 2017). At the same time, palliative care is less likely to be initiated in patients with COPD compared to patients with lung cancer (Butler et al. 2020; Tavares et al. 2017). Discussions between HCPs and

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patients with COPD about palliative care do not occur at all or occur very late in the disease trajectory, and there is even evidence that some HCPs actively avoid discussions about palliative care (Disler *et al.* 2022; Tavares *et al.* 2017). HCPs reported that they found it difficult to discuss palliative care with patients, because they were not accustomed to discussing themes such as holistic needs and end-of-life issues (Tavares *et al.* 2017). The American Thoracic Society, the American Academy of Hospice and Palliative Medicine, the Hospice and Palliative Nurses Association, and the Social Network Hospice and Palliative Care Network have jointly stated that the individualized assessment of palliative care needs should be initiated by HCPs early in the disease trajectory along with COPD-directed treatment (Sullivan *et al.* 2022). The European Respiratory Society (ERS) stated that HCPs should regularly assess palliative care needs in people with COPD (Janssen *et al.* 2023). Therefore, HCPs need support in identifying, discussing, and managing palliative care needs in patients with serious COPD. Serious COPD is defined as COPD that carries a high risk of mortality, negatively impacts quality-of-life and daily function, and/or is burdensome in symptoms, treatments, or caregiver stress (Kelley 2014).

While there are Dutch tools like the ProPal-COPD (Broese *et al.* 2022) and the Palliative Outcome Scale (Simon *et al.* 2012) to identify the palliative phase in patients with COPD, there is currently no Dutch conversation tool that combines screening for palliative care needs, facilitating discussions, and providing guidance in addressing palliative care needs in COPD in 1 tool. A study about palliative care for people with dementia has shown that easily disseminated conversation tool tailored to disease-specific elements increased the confidence of HCPs in initiating and discussing palliative care (Berry *et al.* 2023). Previously, the research team developed such a conversation tool for patients with chronic heart failure (CHF), called “I-HARP” (Identification of patients with HeART failure with palliative care needs) (Ament *et al.* 2020). This original “I-HARP” supports HCPs to timely recognize, discuss, and direct palliative care needs of Dutch patients with CHF.

Although patients with serious COPD and CHF share palliative care needs (Finamore *et al.* 2021), disease-specific palliative care needs in COPD require adaptation of “I-HARP” (Kowalczyk *et al.* 2022; Siouta *et al.* 2019). Indeed, some palliative care needs are more common in patients with COPD than in patients with CHF, such as needs related to anxiety (Kowalczyk *et al.* 2022)

and dyspnea (Janssen *et al.* 2011). Therefore, this study aimed to develop “I-HARP for COPD” to early identify, discuss, and address palliative care needs in patients with serious COPD.

### Ethical considerations

The Research Ethical Committee of the Faculty of Health Medicine and Life Sciences of Maastricht University approved the protocol (approval numbers: FHML-REC/2022/102 and FHML-REC/2022/125). Respondents gave their informed consent for their data to be used for scientific research. The study procedure was in accordance with the General Data Protection Regulation (European Parliament 2016). This study was funded by the Dutch Foundation for Asthma Prevention (grant number: 2021/027).

### Design

An iterative and participatory research design was used to develop “I-HARP for COPD” (June 2022–June 2023) (Campbell *et al.* 2007; Farquhar *et al.* 2011; Skivington *et al.* 2018). The development of “I-HARP for COPD” consisted of 2 phases: the content development of “I-HARP for COPD” and testing of “I-HARP for COPD” in clinical practice (Figure 1). “I-HARP for COPD” has been designed to comply with the recently published ERS guideline (Janssen *et al.* 2023).

### The original “I-HARP”

The development of the original “I-HARP” has been described previously (Ament *et al.* 2020). In short, the original “I-HARP” consisted of opening questions to start exploring palliative care needs followed by identification questions to identify palliative care needs. The following palliative care themes were included: physical needs, limitations in daily activities, patient information needs, care needs related to grief and loss, psychological needs, social needs, existential needs, cultural background, financial worries, advance care planning, informal caregiver burden, and informal caregiver information needs. If the patient or an informal caregiver answered “yes” to any of the identification questions, the HCP could use the second part to explore the potential need for palliative care. An identified palliative care need could then be addressed

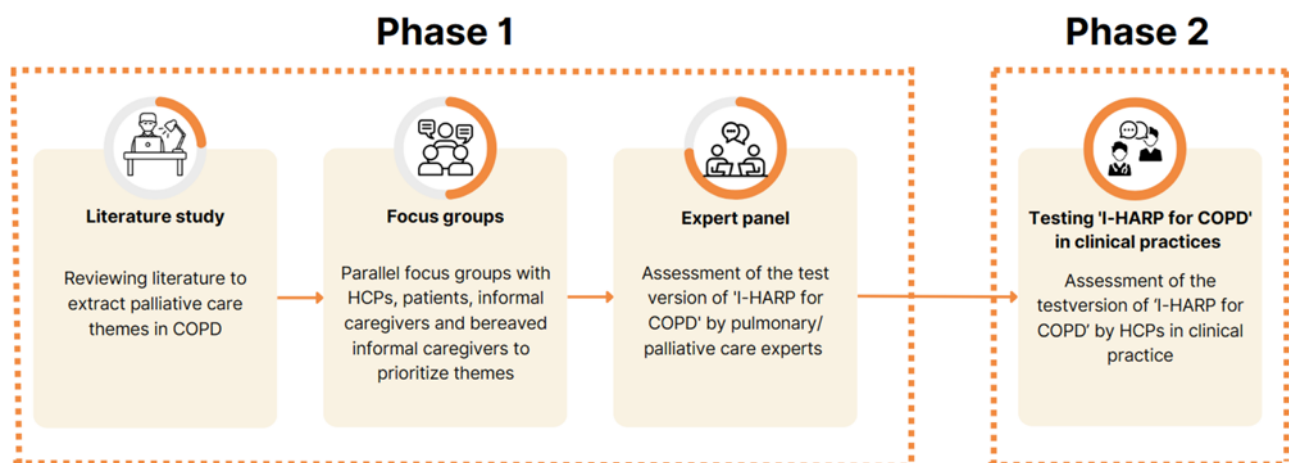


Figure 1. Research and development activities.

using the third part. The third part contains practical information to support a patient or an informal caregiver with their palliative care needs (Ament et al. 2020). This practical information included additional tools to use, more information, care recommendations and options for referrals to other HCPs.

## Materials and methods

Phase 1: Content development of “I-HARP for COPD”.

### Phase 1, step 1: Literature study

The first step of the development phase was to identify, prioritize, and select palliative care needs in COPD. An overview of palliative care needs in COPD was developed by reviewing the literature published between January 1, 2012 and August 1, 2022. Literature was identified by using PubMed, Embase, and Cinahl. The search strategy included a combination of synonyms for “COPD”, “care needs,” and “palliative care.” Relevant articles were selected for inclusion if participants were diagnosed with COPD and the article described palliative care needs. Articles were excluded if multiple chronic conditions were combined and individual needs could not be attributed to COPD. All palliative care needs were then grouped into specific themes by DH (e.g., advance care planning, lifestyle, and social burden) and discussed with DJ and MvdB. These themes were then compared to the themes in the original “I-HARP” (Ament et al. 2020), and newly identified themes were added to be discussed in focus groups together with the original “I-HARP” themes. Before the focus groups, the researchers decided that the palliative care themes included in “I-HARP for COPD” should cover all 4 domains of palliative care (World Health Organization 2002) and should include needs of informal caregivers (Majellano et al. 2022).

### Phase 1, step 2: Focus groups

In the second step, parallel focus groups were used to select the most relevant themes for patients with COPD and to refine the content of the conversation tool in terms of comprehensiveness and comprehensibility. These focus groups consisted of patients with COPD, informal caregivers, bereaved informal caregivers, and HCPs. The focus groups were held in different locations to accommodate participants’ preferences and to comply with COVID-19 pandemic regulations. Patients and informal caregivers were recruited by HCPs from 2 hospitals, a general practice, and a center for pulmonary rehabilitation. Patients and informal caregivers were eligible if the patient met 2 or more criteria listed in the guideline: “Palliative care in COPD”, written by the organization “Palliative Care in the Netherlands” (supplementary information, Table A) (LAN 2021). Patients and informal caregivers were informed about the study by their own HCP and, if they gave consent, were contacted by one of the researchers (DH) and received written information. Only HCPs who will be end users of “I-HARP for COPD” were selected to participate in the parallel focus groups. HCPs were recruited by members of the research team, using purposive sampling to achieve diversity in terms of discipline, setting, and cultural background. HCPs were recruited from 3 hospitals, 2 general practices, 2 long-term care facilities, a center for pulmonary rehabilitation, and the family medicine department of a university. HCPs were eligible if they had any experience in providing palliative care to patients with serious COPD. Because the majority of palliative care for patients with COPD in the Netherlands is

provided by generalists rather than palliative care specialists, participants did not have to indicate how much experience they had in providing palliative care. The focus groups began with an introduction providing background information, the current project, and the aim of the focus group (to discuss and prioritize the most relevant palliative care themes). During the focus groups, 20 palliative care themes (identified in step 1) written on cards were placed on a table. The cards were discussed and then classified as definitely needs to be included in “I-HARP for COPD”, doubtfully to be included in “I-HARP for COPD”, and not included in “I-HARP for COPD”. The doubtful themes were then discussed again until a decision was made. Participants then discussed suggestions for additional relevant palliative care themes (comprehensiveness) and discussed identification questions for each selected palliative care theme (comprehensibility). The moderator of each focus group was a member of the research team, assisted by an observer who collected the data with the use of field notes. Both the moderator and the observer had no prior relationship with the participants. The collected data consisted of the prioritization of the current themes in the original “I-HARP” (Ament et al. 2020) and newly identified themes per focus group, identified difficult topics to discuss in palliative care, and general tips. A member check after each focus group within 2 weeks was used to give each participant the opportunity to correct any errors or misinterpretations.

### Phase 1, step 3: Expert panel

In the third step, a panel of experts in pulmonary care and/or palliative care for patients with COPD reviewed the test version of “I-HARP for COPD”. This was done to achieve content validity prior to testing “I-HARP for COPD” in clinical practice. To be considered an expert, a HCP must provide palliative care to people with COPD on a daily basis and have completed additional training in palliative care. The researchers used purposive sampling to achieve diversity in terms of discipline, setting, and cultural background. The panel experts were not previously involved in the development of “I-HARP for COPD”. All experts received a web-based questionnaire including an informed consent form (Qualtrics 2019). To assess the content validity, the questionnaire included the following items: relevance, understanding, and difficulty of “I-HARP for COPD”. A 5-point Likert scale was used for each item (strongly disagree, disagree, neutral, agree, and strongly agree). Experts were given the opportunity in the questionnaire to suggest alternative vocabulary and provide feedback. A dichotomous (yes or no) question was added at the end of the questionnaire to determine if any themes were missing from “I-HARP for COPD”. The web-based questionnaire was previously used in the development of the original “I-HARP” (Ament et al. 2020).

## Phase 2: testing “I-HARP for COPD” in clinical practice

### Participants and recruitment

“I-HARP for COPD” was tested by HCPs in different settings (home care, general practices, pulmonary rehabilitations, long-term care facilities, and hospitals). HCPs were recruited by members of the research team through outreach to professional networks, social media, and various care organizations where patients with COPD receive care. Only HCPs who will be end users of “I-HARP for COPD” were asked to test “I-HARP for COPD”. HCPs were eligible to participate if they were caring for patients with COPD at the time of the study. After agreeing to test “I-HARP for COPD”, each HCP received: an information letter

and poster, the test version of “I-HARP for COPD”, the web-based questionnaire, and an instructional video on how to use “I-HARP for COPD”. HCPs were asked to apply all aspects of “I-HARP for COPD” at least once (opening questions, identification questions, questions to explore specific palliative care needs, and the care recommendations) and record the time they need to apply “I-HARP for COPD”.

Afterwards, they were asked to complete a web-based questionnaire (Qualtrics 2019). This questionnaire used a 5-point Likert scale (strongly disagree, disagree, neutral, agree, and strongly agree) to assess the relevance, understanding, difficulty, completeness, acceptability, and willingness to use “I-HARP for COPD” in the future. This questionnaire included the usefulness of the opening questions.

### Analysis

Results of the focus groups were analyzed by the first 2 authors and discussed with the other authors. Suggestions for the identification questions were discussed within the research team and were made understandable to people with low health literacy, by using a tool approved by the Dutch Centre of Expertise on Health Disparities (Bureau taal 2002).

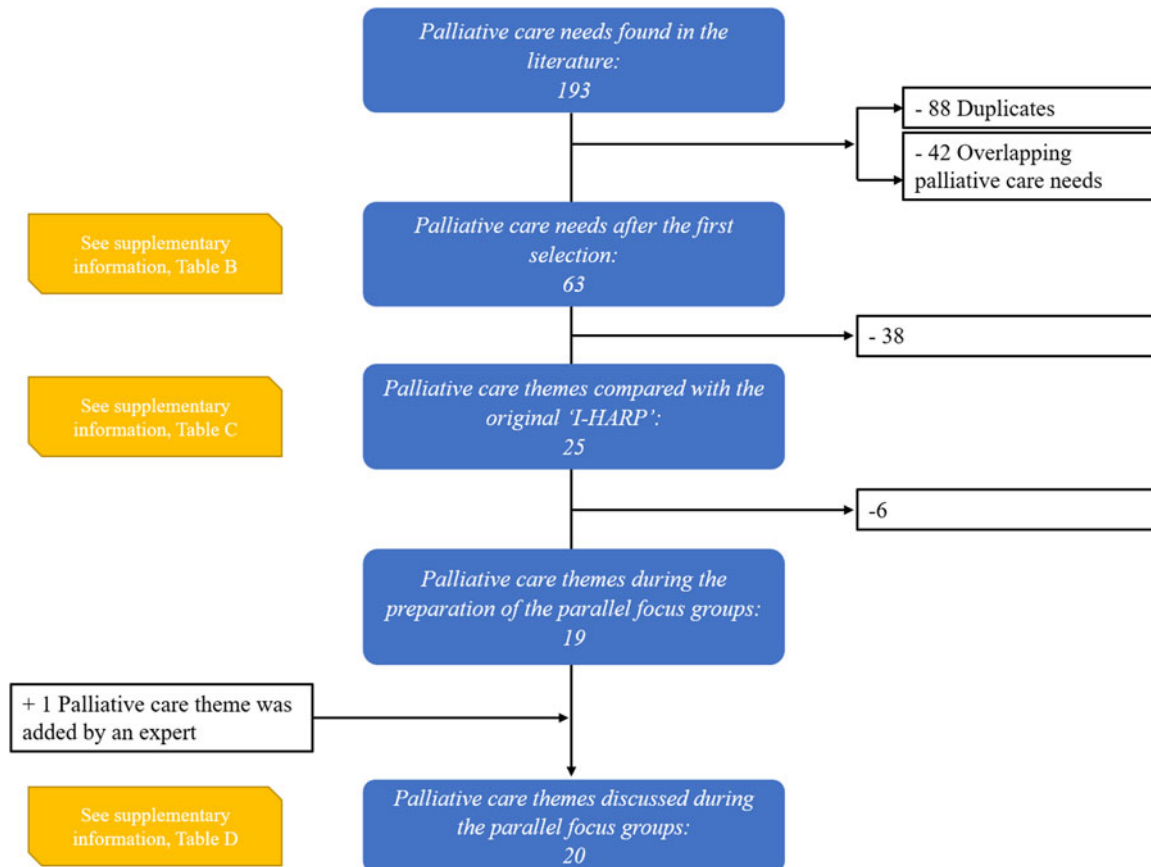
Quantitative data from the questionnaires were analyzed using SPSS version 27.0 (IBM Corp., Armonk, NY, USA). Available case analysis was used, and more than 75% of the questionnaire had to be completed to be included in the analysis. Demographic and work-related characteristics were summarized using descriptive statistics. Categorical variables (relevance,

acceptability, understanding, difficulty, completeness, and willingness to use “I-HARP for COPD”) were analyzed using frequency analysis. The scale-level content validity index based on the universal agreement method (S-CVI/UA) was calculated to determine the content validity of “I-HARP for COPD” in phase 1, step 3. To calculate S-CVI/UA, the relevance ratings of the expert panel were used, with agree and strongly agree as positive responses and neutral, disagree, or strongly disagree as negative responses (Yusoff 2019). The reliability of the identification questions was calculated in phase 2 using the responses on understanding, difficulty, and relevance for each palliative care theme by using Cronbach’s alpha. Feedback from the questionnaires was summarized and grouped into overall suggestions and specific feedback per theme.

## Results

### Phase 1

Five articles were found to identify the palliative care needs of patients with COPD (Bolton *et al.* 2022; Clari *et al.* 2018; Crawford *et al.* 2013; Ferreira *et al.* 2020; Gardener *et al.* 2018). All articles combined described 193 individual palliative care needs in patients with COPD. After merging overlapping palliative care needs and removing duplicates, 63 individual palliative care needs (supplementary information, Table B) were identified. These were merged into 25 palliative care themes. These 25 palliative care themes (supplementary information, Table C) were compared with the palliative care needs in the original “I-HARP” (Ament *et al.* 2020). Fourteen palliative care themes found in the literature had already



**Figure 2.** Flowchart of selected palliative care needs for the focus groups.

been included in the original “I-HARP” (e.g., physical complains, social needs, and informational caregiver needs). Three palliative care themes had indirectly been described in the original “I-HARP” as disease specific themes (identity changes, emotional complains due to the course of COPD, and disease-related treatment), and 6 new palliative care themes were added to the palliative care themes of the original “I-HARP” (lifestyle concerns, availability and accessibility of care, self-management, maintaining hobbies, maintaining optimism, and environmental changes due to COPD). After consultation with a palliative care expert, intimacy concerns was additionally added as a palliative care theme (Figure 2).

Eleven HCPs, 6 patients with COPD and 2 informal caregivers participated in 5 focus groups (Table 1). The first focus group included 4 participants, the second included 5 participants, the third included 3 participants, the fourth included 5 participants, and the fifth included 2 participants. Twenty palliative care themes

were discussed during these focus groups (supplementary information, Table D). Fourteen palliative care themes were selected as main themes in “I-HARP for COPD” based on relevance, comprehensiveness, and comprehensibility (Table 2). All 14 palliative care themes were selected in at least 2 focus groups. The 6 palliative care themes that were not selected were included as in-depth questions. In the member-check, 1 informal caregiver indicated that “availability and accessibility of care” should be included as a main theme. The researchers decided to add this as an in-depth question to the third palliative care theme (patient information needs).

Nine experts in palliative care and/or pulmonary care were asked to assess the test version of “I-HARP for COPD”, and 6 agreed to participate (Table 1). The experts rated all identification questions on understanding, relevance, and difficulty (Table 3). The S-CVI/UA of the 15 identification questions was 0.93. All experts indicated that no themes were missing in “I-HARP for COPD”.

**Table 1.** Characteristics of participants

Participants	Participants in the focus groups (n)	Participants in the expert panel (n)	Participants that tested “I-HARP for COPD” in clinical practice (n)
Health-care professionals (n)	11	6	29
Pulmonologist (n)	4	1	1
Family physician (n)	0	2	0
Physician assistant pulmonology (n)	1	0	2
Family physician in training (n)	0	1	0
Pulmonologist in training (n)	0	0	1
Resident pulmonology (n)	0	0	1
Elderly care physician in training (n)	2	0	0
Nurse practitioner palliative care (n)	0	0	1
Nurse practitioner pulmonology	0	1	0
Nurse practitioner in training (n)	0	0	1
Nurse consultant (n)	1	1	2
Nursing team leader pulmonology	0	0	1
Specialized nurse (n)	0	0	6
Registered nurse (n)	3	0	12
Care assistant	0	0	1
Setting			
Hospital	5	4	20
Revalidation center	4	0	6
General practice	0	2	1
Long-term care center	2	0	0
Home care	0	0	2
Mean age (years)	40.1 (SD 9.2)	39.0(SD 7.5)	41.8 (SD 15.4)
Patients (n)	6	0	0
Mean age (years)	59.6 (SD 7.9)	NA	NA
(Bereaved) Informal caregivers (n)	2	0	0
Mean age (years)	70.5 (range: 69–72)	NA	NA

**Table 2.** Main themes in the test version of “I-HARP for COPD”

Item number	Palliative care themes included in the test version of “I-HARP for COPD”
1.	Physical needs
2.	Limitations in daily activities
3.	Patient information needs
4.	Care needs related to grief and loss
5.	Psychosocial needs
6.	Social needs
7.	Spiritual needs
8.	Cultural background
9.	Financial concerns related to care
10.	Advanced care planning needs (information)
11.	Advanced care planning needs (future care)
12.	Lifestyle concerns
13.	Intimacy concerns
14a.	Informal caregiver needs, if the informal caregiver is not present
14b.	Informal caregiver needs, if the informal caregiver is present

Five experts made suggestions for textual improvements at item level. One expert mentioned the need for more attention to the cultural background of the HCP administering “I-HARP for COPD”, while the cultural background of the HCP has influence on the ease to discuss certain topics as intimacy concerns and psychological needs. This comment will be used to develop the implementation strategy. One in-depth question was added to the theme Physical aspects: “Do you experience physical discomfort while sleeping?”

### Phase 2: Testing “I-HARP for COPD” in clinical practice

A total of 29 HCPs completed the questionnaire. Of these, 26 (89.7%) HCPs reported having used the “I-HARP of COPD” test version in clinical practice, while 3 assessed “I-HARP for COPD” without practical experience. A minority (31.0%) had an additional training in palliative care (Table 1).

The mean time to use “I-HARP for COPD” was 33.8 minutes (SD = 16.9). “I-HARP for COPD” was used in the hospital (48.3% inpatients; 10.3% outpatients), in pulmonary rehabilitation (20.7%), and during home visits (13.8%). The opening questions helped 57.6% of the HCPs to start the conversation about palliative care. Nine nurses responded that they were already using these opening questions or started the conversation otherwise. “I-HARP for COPD” was accepted by 25 HCPs (86.2%). The reliability of “I-HARP for COPD” to identify palliative care needs showed a Cronbach’s alpha value of 0.857. All items in terms of difficulty are displayed in Table 4. Intimacy concerns, financial concerns related to care, and spiritual needs were experienced more difficult to discuss. The questions designed to get more in-depth insight into a palliative care need were approved by 26 HCPs (89.6%). The care recommendations in “I-HARP for COPD” were approved by 27 HCPs (93.1%). The majority of the HCPs (71.4%) were willing to use “I-HARP for COPD” in daily care. Reported reasons for unwillingness to use “I-HARP for COPD” include inexperience of the

HCP, already addressing issues of “I-HARP of COPD” in usual care, and lack of time.

Feedback was grouped into the following themes: HCP’s feelings of discomfort or insecurity, difficulties in discussing certain palliative care themes, and misunderstandings between palliative and end-of-life care. Quantitative data and feedback were discussed simultaneously, but the researchers decided that no further adjustments were necessary. This resulted in the final version of “I-HARP for COPD” (supplementary information, Figure A). Feedback will be used to develop the implementation strategy.

### Discussion

This article describes the development of a conversation tool for HCPs to identify, discuss, and direct palliative care needs in patients with COPD. Patients with COPD, informal caregivers, and HCPs from multiple settings participated to create a conversation tool that is suitable for identifying palliative care needs, regardless of the setting in which the patient receives care. “I-HARP for COPD” demonstrated to have an excellent content validity (S-CVI/UA, 0.93), reliability (Cronbach’s alpha value of 0.857), and acceptability among HCPs (86.2%).

Through the iterative design of the study and the use of multiple research techniques (Campbell et al. 2007; Farquhar et al. 2011), a natural filtering of important palliative care themes took place. As a result of the focus groups, 14 individual palliative care themes were ultimately included in the test version of “I-HARP for COPD”. Both the original “I-HARP” and “I-HARP for COPD” share 12 of the same palliative care themes (Ament et al. 2020), demonstrating that there are overall comparable palliative care needs between each chronic condition (Kowalczyk et al. 2022; Siouta et al. 2019). Both the in-depth questions (89.6%) and the care recommendations (93.1%) were accepted by HCPs. The American Thoracic Society statement indicated that tools that both signal the need for palliative care and provide care recommendations would be most useful, as the recommendations directly address the previously identified need (Sullivan et al. 2022). Because the in-depth questions and care recommendations were not tested by Ament et al. (2020), these results could not mutually be compared. With 6–8 experts, an S-CVI/UA of 0.83 or higher is considered acceptable and applicable (Yusoff 2019). “I-HARP for COPD” showed an excellent content validity, indicating that the content of the conversation tool is highly relevant for identifying the presence of palliative care needs in patients with COPD (Patrick et al. 2011).

The researchers found a good reliability of “I-HARP for COPD”. Having reliable conversation tools to identify palliative care needs in patients with COPD enables HCPs to regularly reassess patients’ needs and routinely reevaluate the focus of care as the health status and personal preferences change (Butler et al. 2021). This creates flexibility in the provision of palliative care and will ultimately reduce the amount of undesired care and provide more personalized care (Fu et al. 2021).

“I-HARP for COPD” was generally well received by HCPs. Nevertheless, the following themes were found to be difficult to discuss: intimacy concerns, financial concerns related to care, and spiritual needs. This was also described by other authors, and they insisted that HCPs should be supported in discussing these themes (Batstone et al. 2020; Chando et al. 2021; Kelemen et al. 2022; Warth et al. 2020). Although “I-HARP for COPD” appears to provide this support, aspects such as professional experience, skills, and time are needed to ensure that discussions involving difficult themes

**Table 3.** Assessment experts of the test version of “I-HARP for COPD”

Main theme item number	Assessment of experts (N = 6)								
	Understanding			Relevance			Difficulty		
	Agree (N)	Neutral (N)	Do not agree (N)	Agree (N)	Neutral (N)	Do not agree (N)	Agree (N)	Neutral (N)	Do not agree (N)
1.	6	–	–	6	–	–	6	–	–
2.	4	–	2	6	–	–	6	–	–
3.	6	–	–	6	–	–	6	–	–
4.	4	–	2	6	–	–	5	–	1
5.	3	–	3	6	–	–	6	–	–
6.	4	2	–	6	–	–	6	–	–
7.	3	1	2	6	–	–	4	1	1
8.	5	1	–	6	–	–	5	–	1
9.	6	–	–	6	–	–	5	–	1
10.	5	–	1	6	–	–	6	–	–
11.	4	–	2	6	–	–	6	–	–
12.	6	–	–	5	–	1	6	–	–
13.	6	–	–	6	–	–	4	1	1
14a.	5	–	1	6	–	–	4	–	2
14b.	6	–	–	6	–	–	5	–	1

**Table 4.** Assessment of the difficulty to address themes of the test version of “I-HARP for COPD”

Themes in “I-HARP for COPD”	Number of HCPs which indicated that a palliative care theme was not difficult to discuss with a patient with COPD
Physical needs	26/29
Limitations in daily activities	26/29
Patient information needs	24/29
Care needs related to grief and lost	24/29
Psychosocial needs	22/29
Social needs	25/29
Spiritual needs	16/29
Cultural background	25/29
Financial concerns related to care	15/29
Advanced care planning needs (information)	22/29
Advanced care planning needs (future care)	24/29
Lifestyle concerns	24/29
Intimacy concerns	14/29
Informal caregiver needs, if the informal caregiver is not present	26/29
Informal caregiver needs, if the informal caregiver is present	21/26

are more frequently and constructively engaged by HCPs, rather than being avoided (Fine et al. 2010). To support HCPs in use of “I-HARP for COPD”, a Dutch e-learning has been developed including attention for communication about intimacy concerns, financial concerns, and spiritual needs (Huijten and Janssen 2023).

### Limitations

The first limitation of this study was the underrepresentation of certain HCPs in the sample. In particular, family physicians, general practice nurses, and elderly care physicians were underrepresented in the test sample. This imbalance between different professions may have led to selection bias (Elston 2021). Therefore, the external validity of “I-HARP for COPD” has not been adequately studied. The second limitation was the lack of measurement of cultural diversity in the sample. The researchers attempted to include as much diversity in the sample as possible in terms of religion, financial status, cultural heritage, and spiritual beliefs. Although the researchers repeatedly tried to set aside their own origins, beliefs, and social positions, the researchers cannot rule out the possibility of cultural bias (He and van de Vijver 2012). In addition, as in the study by Ament et al. (2020), HCPs may have selected patients whom they already knew well and felt confident to test “I-HARP for COPD”. Finally, although patients and informal caregivers were closely involved in the development process, no validation with the use of patient experiences was performed while only 2 patients agreed to be interviewed after the conversation with I-HARP COPD with their HCP. Consequently, the interview sample was too limited to ensure an accurate interpretation.

## Recommendations

This study has shown that “I-HARP for COPD” is effective in identifying palliative care needs in patients with COPD based on reliability and content validity, but more research is needed to further refine the conversation tool. This could include demonstrating construct validity, external validity, and evaluating the experiences of patients with COPD when using “I-HARP for COPD”. Further research is also needed on how best to prepare patients with COPD to discuss palliative care needs. In addition, studying the impact of “I-HARP for COPD” on patient quality-of-life, patient satisfaction, and health-care costs is needed.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/S1478951524000191>.

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