

Research Progress on Assessment Tools for Fear of Disease Progression

Authors: The user has provided a very short input: “毛杭飞”. This appears to be a Chinese name. Let me analyze the requirements:

1. The user wants me to translate from Simplified Chinese to English with highest accuracy and academic tone
2. The critical requirements mention preserving LaTeX commands, placeholders, citation commands, and ...tags
3. However, the input “毛杭飞” is just a name, with no LaTeX, no math placeholders, no citations, and no paragraph tags
4. The glossary provided only contains “机器学习 => machine learning” and “深度学习 => deep learning”, which are not relevant here

Since this is just a name, the translation should be the romanization of the Chinese name. In academic contexts, Chinese names are typically transliterated using Pinyin.

“毛杭飞” would be: - 毛 (Máo) - surname - 杭飞 (Hángfēi) - given name

The standard academic format is to write the full name as “Hangfei Mao” (given name first, surname last) or “Mao Hangfei” (surname first, given name last). In Chinese academic papers, the convention is often to keep the surname first, so “Mao Hangfei” would be appropriate.

However, I need to check if there are any tags or other structural elements. The input is just “毛杭飞” with no tags. The instructions say “Return ONLY the translated text for the given input (no explanations, no quotes, no headings you invent).”

Since there's no paragraph tag in the input, I should not add one. I should just provide the translation of the name.

But wait, let me re-read the instructions carefully. The user says “Translate from Simplified Chinese to English with the highest accuracy and academic tone.” The input is just “毛杭飞”.

In academic contexts, Chinese names are typically: 1. Transcribed using Pinyin 2. Sometimes with surname first (Mao Hangfei) or given name first (Hangfei Mao) 3. The surname is often capitalized (MAO Hangfei) or just standard capitalization (Mao Hangfei)

The most common and formal way in English academic papers is either: - “Mao Hangfei” (surname first, following Chinese convention) - “Hangfei Mao, The user has provided a very short input:” 徐虹霞” . This appears to be a Chinese name. Let me analyze what needs to be done:

1. The input is just a name, not a full paragraph with tags
2. The user is asking me to translate this name
3. According to the instructions, I should preserve ALL ...tags, but there are none in this input
4. The instructions say “Return ONLY the translated text for the given input (no explanations, no quotes, no headings you invent)”
5. The instructions also say “Keep one output paragraph per input paragraph; do not merge or split paragraphs” - but there’ s no paragraph structure here

This is a name, which in academic translation typically follows specific conventions: - Chinese names are usually transliterated using Pinyin - The family name comes first in Chinese, but in English academic contexts, it can be written as “Xu Hongxia” or “Hongxia Xu” depending on the convention - In many Chinese academic papers, the name is kept as “Xu Hongxia” (family name first, given name second) when written in Pinyin, or sometimes reversed to “Hongxia Xu” for Western conventions

Since this is a standalone name without context, and the instructions require me to translate the content while preserving structure, I should: 1. Recognize this as a proper name 2. Transliterate it appropriately 3. Since there are no tags, I don’ t need to add any 4. Just provide the translated name

The most standard academic translation would be “Xu Hongxia” (keeping the Chinese order) or “Hongxia Xu” (Western order). In Chinese academic papers, when names are written in Pinyin, they often keep the original order: family name first. So “Xu Hongxia” would be most appropriate.

However, I need to consider if this might be part of a larger context where tags would be expected. The user has only provided this single name. The instructions are very clear about preserving tags, but there are none here. I should not invent or add tags that weren’ t in the original input.

Let me re-read the critical requirements: - “PRESERVE ALL ...paragraph wrapper tags EXACTLY” - this means if they exist, keep them. It doesn’ t mean I must add them if, The user has provided a very short input: “徐亦虹” . This appears to be a Chinese name. Let me analyze the requirements:

1. The user wants me to translate from Simplified Chinese to English with highest accuracy and academic tone
2. I must preserve ALL LaTeX commands and placeholders exactly
3. I must preserve ALL citation commands ([?], ??, (??), etc.) exactly
4. **PRESERVE ALL ...paragraph wrapper tags EXACTLY**
5. Maintain academic tone and formal scientific writing style

6. Use precise technical terminology - obey the glossary strictly
7. Preserve section structure and paragraph organization
8. Translate all content completely - do not omit any information

However, the input “徐亦虹” is just a name. It doesn't contain: - Any LaTeX commands - Any placeholders - Any citation commands - Any ...tags - Any technical content requiring the glossary - Any paragraphs to preserve

This is simply a Chinese name that needs to be transliterated into English. The standard academic practice for Chinese names is: - Use Pinyin transliteration - Capitalize the surname and given name appropriately - Typically format as “Xu Yihong” (surname first, then given name)

The name “徐亦虹” breaks down as: - 徐 (Xú) - surname - 亦虹 (Yìhóng) - given name

In academic contexts, Chinese names are usually written in Pinyin with the surname first, capitalized as “Xu Yihong”. Sometimes they are written as “Yihong Xu” following Western name order, but “Xu Yihong” is more common in academic papers, especially when the original Chinese name order is preserved.

Since there are no tags or any other structural elements in the input, I should just provide the transliterated name. The output should be just the name itself, without any additional formatting or explanation.

The glossary provided (“机器学习 => machine learning” , “深度学习 => deep learning”) is not relevant to this input.

I should return only the translated text (the transliterated name) with no explanations, quotes, or invented headings. Since there's no paragraph tag in the input, I don't need to add one. The instruction says “Return ONLY the translated text for, Mao Hangfei

Date: 2024-10-17T10:17:50+00:00

Abstract

This paper provides a comprehensive review of fear of disease progression assessment tools from domestic and international sources. It elaborates on the primary components and clinical applications of these instruments from three perspectives: universal fear of disease progression assessment tools, tools for special populations, and tools for family members. The paper analyzes and compares existing problems in current assessment instruments and proposes recommendations, aiming to provide a reference for the localization development of fear of disease progression assessment tools, assist clinical healthcare professionals in selecting appropriate instruments, and support the development of targeted intervention measures.

Full Text

Research Progress on Assessment Tools for Fear of Disease Progression

Abstract: This article reviews assessment tools for fear of disease progression (FoP) both domestically and internationally, elaborating on their main content and clinical applications from three perspectives: universal FoP assessment tools, population-specific FoP assessment tools, and family caregiver FoP assessment tools. It analyzes and compares existing problems in current assessment tools and offers recommendations, providing references for the localized development of FoP assessment tools, appropriate tool selection by clinical healthcare professionals, and the formulation of targeted interventions.

Keywords: fear of progression; illness perception; psychological nursing; cancer; chronic disease

In recent years, the global number of cancer patients and individuals with chronic diseases has been rising annually [1, 2]. Illness represents a major negative life event that imposes substantial psychological pressure on patients and their families. The fear of death, disruption of normal life, changes in self-image and self-esteem, altered social and lifestyle roles, and financial problems all become sources of spiritual distress for patients and their families. Among these concerns is the worry and fear about disease progression. Studies [3, 4] have shown that 7%-49% of patients experience moderate to severe fear of disease progression, with 7% experiencing extremely severe fear. Fear of progression (FoP) refers to an individual's psychological fear related to all aspects of their existing disease [5], and this fear of disease progression has become one of the important stressors for patients [6]. Long-term excessive fear of disease can lead to functional impairment, negatively affecting individuals by impacting their well-being, quality of life, and social functioning, with severe cases even requiring treatment [6]. Initially, FoP was primarily used to describe the psychological state of cancer patients. However, subsequent research has demonstrated that fear of disease progression is not limited to cancer patients but is prevalent across various chronic disease populations [7]. As cancer is increasingly viewed as a type of chronic disease, FoP has more recently been applied to describe the psychological state of chronic disease patients in general. With the transformation of medical models in recent years, the goal of clinical treatment is no longer limited to treating the disease itself but also includes improving patients' quality of life [8]. Psychological health is undoubtedly an integral component of high-quality living. Therefore, to quantitatively describe patients' FoP levels, scientifically assess the degree of fear of disease progression, and implement appropriate interventions, developing suitable FoP assessment scales has become a necessary endeavor. In recent years, numerous FoP assessment tools have been developed both domestically and internationally. This article reviews existing FoP assessment tools to provide references for clinical healthcare professionals in selecting appropriate assessment instruments.

1. Origin and Concept of Fear of Disease Progression

Fear of disease progression, also known as fear of illness progression, was first proposed by Dankert [6] in 2003 based on fear of cancer recurrence (FCR). As early as 2015, experts defined FCR as “the fear, worry, or concern that cancer may return or progress,” while concurrently agreeing that the defining features of “fear of cancer recurrence” and “fear of disease progression” are essentially identical [9]. Cancer patients often perceive cancer as an incurable chronic disease without hope of improvement, and after receiving a diagnosis, they struggle simultaneously with their psychological fears and disease complications [10]. As research has deepened, scholars have discovered that fear of disease progression is not limited to cancer patients but is universally present across different disease courses in various chronic disease populations, with progression outcomes extending beyond fear of recurrence [11]. Consequently, researchers have gradually extended this concept to assess psychological changes related to fear of disease in other chronic conditions. FoP is currently defined as fear of various physiological, social, and psychological consequences resulting from disease progression or fear of disease recurrence [12]. In 2021, Daelin further clarified the distinction between FoP and FCR, indicating that they represent different concepts with different psychological correlates that should be distinguished in research [13]. In short, FoP is a more universal concept than FCR, applicable to chronic disease patients (including cancer patients), with the feared outcome being disease progression (including recurrence). To describe FCR levels in cancer patients, scholars previously developed multiple scales. However, research on the broader concept of FoP lagged behind FCR due to difficulties in conceptual definition. In recent years, this discrepancy has attracted scholars’ attention, and the assessment of fear of disease progression now focuses not only on the narrow psychological aspects of FCR but also on the higher-level psychological experience of disease progression among chronic disease and cancer patients. To better describe the FoP psychological levels of chronic disease and cancer patients, various scholars have developed multiple scales in this domain.

2. Assessment Tools for Fear of Disease Progression

2.1 Universal Patient Fear of Disease Progression Assessment Tools

The user wants me to translate a specific section from Chinese to English. The section is “#### 2.1.1 Fear of Progression Questionnaire (FoP-Q)” .

Let me analyze the requirements: 1. Preserve all math, citations, figure/table markers - but I don’t see any in this section 2. Maintain academic tone 3. Produce flowing, readable prose 4. Merge fragmented text into complete sentences 5. Skip garbage text - none apparent here 6. Use clear topic sentences and logical transitions 7. Format as clean Markdown 8. LaTeX rules - not applicable here as there’s no LaTeX math 9. Romanize author names using pinyin 10. Use English journal titles if available, otherwise translate meaning 11. Use official English names for institutions when known 12. Use standard English

technical terms 13. DO NOT leave any Chinese characters 14. Return ONLY the translated section with the same structure

The text contains some Chinese characters at the end: “普及”. I need to translate this completely.

Let me break down the content:

Paragraph 1: - FoP-Q developed by German scholar Herschbach in 2005 - Five dimensions: emotional reactions, occupation, family relationships, anxious coping, and loss of autonomy - Applicable to chronic disease patients - 43 items, 5-point Likert scale, higher scores = more severe fear - Score ≥ 34 = clinical threshold, dysfunctional fear - Good reliability and validity, Cronbach's $\alpha > 0.7$ - In 2022, Chinese scholar Huang Yanping [14] translated and culturally adapted it - Removed two specific items - Conducted preliminary validation - Cronbach's $\alpha = 0.969$, excellent reliability and validity - Applied in cancer patients and chronic diseases like elderly diabetic nephropathy [15] and stroke [16] - Quantifies patients' FoP psychological levels - Helps clinical healthcare professionals understand patients' FoP degree

Advantages section: - Two points with Chinese numbering and - : Rich dimensions, comprehensive content, potential source for population-specific tools - : Strong readability, simple scoring, facilitates understanding

Disadvantages section: - Two points with Chinese numbering and - : Excessive items, time-consuming, low clinical practicality, limits widespread promotion - : Late translation, limited application in China, preventing rapid domestic 普及 (this is the Chinese character that needs translation - it means “popularization” or “dissemination”)

I need to translate this into fluent academic English while preserving the structure (heading, paragraph, advantages/disadvantages with numbered points).

Let me draft the translation:

2.1.1 Fear of Progression Questionnaire (FoP-Q) The Fear of Progression Questionnaire (FoP-Q) was developed by German scholar Herschbach in 2005. The instrument comprises five dimensions: emotional reactions, occupation, family relationships, anxious coping, and loss of autonomy, making it suitable for patients with chronic diseases. The questionnaire consists of 43 items scored on a 5-point Likert scale, with higher scores indicating more severe fear of progression. A score of 34 or higher represents the clinical threshold, indicating dysfunctional fear of disease progression. The questionnaire demonstrates good reliability and validity, with a Cronbach's α coefficient greater than 0.7. In 2022, Chinese scholar Huang Yanping [14] translated and culturally adapted the scale, removing two items (“I feel better when I tell myself ‘others are worse off than me’ ” and “I worry my illness might be hereditary and affect my children”) and conducted preliminary validation. The results showed that the translated scale had a Cronbach's α coefficient of 0.969, indicating excellent

reliability and validity. The scale has been applied not only in cancer patients but also in chronic diseases such as elderly diabetic nephropathy [15] and stroke [16], quantifying patients' psychological levels of FoP in coping with chronic conditions and helping clinical healthcare professionals better understand patients' degree of FoP.

Advantages: The instrument features rich dimensions and comprehensive content, making it a potential source for developing population-specific FoP assessment tools. It demonstrates strong readability and simple scoring, facilitating comprehension.

Disadvantages: The excessive number of items leads to time-consuming completion and low clinical practicality, limiting widespread promotion. The translation was completed relatively recently and has seen limited application in China, preventing rapid domestic popularization.

Wait, I need to check the Chinese characters again. The last part says “preventing rapid domestic 普及”. The character “普及” means popularization, dissemination, or widespread adoption. In this context, “preventing rapid domestic popularization” or “preventing its rapid widespread adoption domestically” would work.

Let me refine the translation to make it more fluent:

For the first paragraph, I can combine some sentences for better flow: - “The Fear of Progression Questionnaire (FoP-Q) was developed by German scholar Herschbach in 2005. The instrument comprises five dimensions: emotional reactions, occupation, family relationships, anxious coping, and loss of autonomy, making it suitable for patients with chronic diseases.” - This is good.

- “The questionnaire consists of 43 items scored on a 5-point Likert scale, with higher scores indicating more severe fear of progression.” - Good.
- “A score of 34 or higher represents the clinical threshold, indicating dysfunctional fear of disease progression.” - Good.
- “The questionnaire demonstrates good reliability and validity, with a Cronbach's α coefficient greater than 0.7.” - Good.
- “In 2022, Chinese scholar Huang Yanping [14] translated and culturally adapted the scale, removing two items (“I feel better when I tell myself ‘others are worse off than me’” and “I worry my illness might be hereditary and affect my children”) and conducted preliminary validation.” - This is a bit long, but it's okay for academic writing. I could split it: “In 2022, Chinese scholar Huang Yanping [14] translated and culturally adapted the scale, removing two items (“I feel better when I tell myself ‘others###
2.1.2 Fear of Progression Questionnaire-Short Form (FoP-Q-SF)

The Fear of Progression Questionnaire-Short Form (FoP-Q-SF) was adapted by Mehnert in 2006 based on the original FoP-Q [17]. The author screened and

integrated items from the original 43-item FoP-Q, resulting in a 12-item FoP-Q-SF questionnaire, also known as FoP-Q-12. The questionnaire comprises four dimensions: emotional reactions, partnership/family, occupation, and loss of autonomy. Scoring uses a 5-point Likert scale, with higher scores indicating greater FoP severity. The scale's Cronbach's α coefficient is 0.87. In 2015, Wu Qiyun introduced and translated the scale into Chinese [18], applying it in liver cancer patients, with the total scale demonstrating an internal consistency Cronbach's α coefficient of 0.883. The Chinese version contains two dimensions: physical health factor (primarily reflecting patients' fear regarding their own health) and social-family factor (reflecting fear about social and family functioning), with six items in each dimension. In 2018, Cai Jianping applied the Chinese version of FoP-Q-SF in breast cancer populations, yielding a Cronbach's α coefficient of 0.856 and good reliability and validity. The scale has achieved relatively high popularity, with cultural adaptations and applications in the Netherlands and Portugal showing Cronbach's α coefficients of 0.86 [19, 20].

Currently, the scale has been applied in various chronic diseases including malignant tumors [21], acute pancreatitis [22], AIDS [23], diabetes [24], and systemic sclerosis [19]. Clinical healthcare professionals can use this scale to enhance monitoring of high-risk populations and implement interventions to reduce patients' fear of disease progression.

Advantages: Relatively few items and simple scoring facilitate promotion and clinical application. Wide application across diverse populations with strong applicability.

Disadvantages: No risk stratification has been established.

2.1.3 Fear of Progression Questionnaire Rapid Screener (FoP-Q-RS)

The Fear of Progression Questionnaire Rapid Screener (FoP-Q-RS) was developed by Youssef [25] as a rapid screening tool for high-risk FoP populations, using the 12 items of FoP-Q-SF as the item pool. During item construction, items were selected from four domains (emotional reactions, family relationships, occupation, and loss of autonomy), ensuring at least one item from each domain was included. The scale consists of five items scored on a 5-point Likert scale, with higher scores indicating higher fear of disease progression levels. A total score ≥ 12 optimally balances sensitivity and specificity, while a score ≥ 10 combines high sensitivity with acceptable specificity. Therefore, the authors recommend using 12 points as the cutoff for high risk when FoP-Q-RS is the sole screening tool. Applied among 1,102 German cancer patients, the scale demonstrated good sensitivity and specificity, with a Cronbach's α coefficient of 0.793.

Advantages: Few items make it convenient and quick to complete. Can serve as an early screening tool for FoP patients, facilitating ultra-early intervention in nursing practice.

Disadvantages: Lacks large-sample, multi-population external validation;

reliability and validity require further verification. Not translated into Chinese, limiting its application in China.

2.1.4 Worries About Recurrence or Progression Scale (WARPS) The Worries About Recurrence or Progression Scale (WARPS) was developed and validated by Australian scholar Sharpe in 2023 [26]. Sharpe incorporated items and content related to fear of disease recurrence alongside fear of disease progression, forming the WARPS scale. WARPS comprises three dimensions: fear of deterioration or recurrence, fear of disease progression, and fear of becoming a family burden, with 18 items total. WARPS has a Cronbach's α of 0.96 and uses a 5-point Likert scale, with total scores ranging from 18 to 90. Only 0.7% and 1.2% of the sample scored the minimum or maximum, respectively, so floor and ceiling effects are not a concern.

Due to the recent development of this scale, no external validation with other samples has been conducted domestically or internationally, and no Chinese version is currently available.

Advantages: Can simultaneously measure psychological fear related to both disease recurrence and disease progression.

Disadvantages: Numerous items limit promotion. Requires more data to validate the scale's reliability and validity. The scale has only been applied to cardiovascular (cardiac) diseases, respiratory diseases, diabetes, or rheumatism within a single study, with respondents recruited online, introducing potential selection bias. Measurement results cannot distinguish the respective proportions of fear of recurrence versus fear of progression.

2.2 Population-Specific Fear of Disease Progression Assessment Tools

2.2.1 Fear of Progression Questionnaire for Children (FoP-Q-SF/C)

The Fear of Progression Questionnaire for Children (FoP-Q-SF/C) was developed by Johanne [27] based on FoP-Q-SF among 32 pediatric patients. It contains three dimensions and 12 items. The questionnaire was adapted by rewriting and rephrasing FoP-Q-SF items from children and adolescents' perspectives—for example, changing “I worry I cannot go to work because of my illness” to “I worry I cannot go to school because of my illness.” It uses a 5-point Likert scale, with higher scores indicating higher FoP levels. No clinical cutoff value has been established. The scale's Cronbach's $\alpha = 0.86$. However, due to the narrow target population and recent development, no additional clinical applications have been conducted, and its reliability and validity require more clinical data support.

Advantages: A specifically constructed scale for children, enabling more precise assessment of children's fear of disease progression. Items are highly readable and adaptable, with simple completion.

Disadvantages: The item pool was derived from FoP-Q-SF rather than being

newly constructed specifically for pediatric patients, potentially introducing bias.

The validation dataset included only 32 participants, and no further validation studies have been conducted, leaving reliability and validity to be further verified.

The scale has not been translated into Chinese, limiting its application in China.

2.2.2 Fear of Disease Progression Scale for Acute Myocardial Infarction Patients The Fear of Disease Progression Scale for Acute Myocardial Infarction Patients was developed by Chinese scholar Li Aoxue in 2021 based on Mishel' s Uncertainty in Illness Theory [28]. The scale contains 17 items using a 5-point Likert scoring method, with total scores representing the sum of individual item scores. Higher scores indicate more severe FoP. The scale demonstrates good reliability and validity with a Cronbach' s α coefficient of 0.892 and can be used to assess FoP status in acute myocardial infarction patients.

Advantages: Strong specificity, suitable for measuring fear of disease progression in acute myocardial infarction patients. Developed independently by Chinese scholars, making it more suitable for localized application in China.

Disadvantages: The sample source was relatively limited; future research should expand the sample size to further refine the scale.

2.2.3 Fear of Disease Progression Scale for HPV-Positive Women The Fear of Disease Progression Scale for HPV-Positive Women was developed by Chinese scholar Li Aoshuang in 2021 [29], using Mishel' s Uncertainty in Illness Theory as the theoretical framework. The final scale comprises three dimensions named emotional reactions, physical health, and family-social functioning, retaining 15 items. It uses a 5-point Likert scoring method, with higher scores indicating higher levels of fear of disease progression. Testing revealed a Cronbach' s α coefficient of 0.884 and split-half reliability of 0.763, demonstrating good internal consistency. The test-retest reliability was 0.975, indicating good external stability. The scale can be used to assess FoP levels in HPV-positive women.

Advantages: Strong specificity, suitable for assessing FoP in HPV-positive women. Independently developed by Chinese scholars with high cultural adaptability and relevance.

Disadvantages: The sample source was relatively limited; future research should expand the sample size to further refine the scale.

2.3 Family Member Fear of Disease Progression Scales

2.3.1 Parent Fear of Progression Questionnaire-Short Form (FoP-Q-SF/PR) The Parent Fear of Progression Questionnaire-Short Form (FoP-Q-SF/PR) was developed by Schepper [30] in 2015 based on FoP-Q-SF. It consists of three dimensions (emotional reactions, family life, and school life) with 12

items total. Each item uses a 5-point Likert scale, with total scores ranging from 12 to 60. Higher scores indicate higher FoP levels in parents of pediatric cancer patients. The scale demonstrates good reliability and validity with a Cronbach's α coefficient of 0.90. Chinese scholar Yang Yiling [31] translated the scale in 2022, with the Chinese version showing a Cronbach's α coefficient of 0.893 and test-retest reliability of 0.819, indicating good reliability and validity. Additionally, Herschbach recommends using a score of ≥ 34 as the criterion for identifying severe FoP in parents of pediatric cancer patients. In domestic and international research, this scale has been primarily applied to parents of children with cancer, autism, and fibromatosis.

Advantages: Brief items that are easy to understand. Assessment targets parents of pediatric patients, making the evaluation object more specific.

Disadvantages: Assessment results do not include clear risk stratification.

2.3.2 Partner Fear of Progression Questionnaire-Short Form (FoP-Q-SF/P) The Partner Fear of Progression Questionnaire-Short Form (FoP-Q-SF/P) was developed by Zimmermann et al. [32] based on FoP-Q-SF, including partners of patients with three different diseases (breast cancer, prostate cancer, and diabetes). It is primarily used to assess the degree of fear that spouses of chronic disease patients have about their partner's disease progression. The scale contains 12 items using a 5-point Likert scale scored from 1 ("never") to 5 ("always"), with total scores ranging from 12 to 60. Higher scores indicate greater fear of the patient's disease progression. In 2015, Wu Qiyun [33] translated the scale into Chinese and applied it among family members of liver cancer patients, dividing the scale into two dimensions (health and social functioning) while retaining 12 items, with a Cronbach's α coefficient of 0.834. Domestic scholars have applied the Chinese version of FoP-Q-SF/P to spouses of middle-aged and elderly maintenance hemodialysis patients, obtaining a Cronbach's α coefficient of 0.780 [34]. The scale has also been used among spouses of stroke patients, lung cancer patients, and multiple myeloma patients.

Advantages: Brief items facilitate popularization and promotion. Assessment targets family members of patients, making the evaluation object more specific.

Disadvantages: The original scale development only included two chronic diseases (cancer and diabetes), potentially introducing selection bias. Assessment results lack risk stratification.

3. Comparison of Different Fear of Disease Progression Assessment Tools

3.1 Comparison of Basic Information

Nine FoP assessment tools were compared across dimensions including development time, country of origin, testing method, content framework, and target

population (see Table 1). Among universal FoP assessment tools, FoP-Q-SF is the most widely applied tool with the most external validation across disease types and relatively convenient administration. Meanwhile, FoP-Q and WARPS are clinically inconvenient due to numerous items, while FoP-Q-RS lacks research application due to its recent development, requiring more data to support its validity. Among population-specific FoP assessment tools, whether FoP-Q-SF/C, the Acute Myocardial Infarction Fear of Disease Progression Scale, or the HPV-Positive Women Fear of Disease Progression Scale, all lack extensive clinical application to prove their reliability and validity, awaiting further testing over time. In recent years, research on family caregiver FoP has increased annually. Both FoP-Q-SF/PR and FoP-Q-SF/P focus on family caregiver FoP and play important roles in related research, with simple items that facilitate promotion. They represent effective tools for nurses to assess the psychological health of patients' family members.

3.2 Content Comparison

Among the nine FoP assessment tools, five scales were derived from the FoP-Q scale but differ in item number and assessment focus. The original FoP-Q contains up to 43 items, was developed earliest, provides comprehensive assessment, has been widely applied, and demonstrates good reliability and validity, making it the source scale for numerous derivative scales. FoP-Q-SF reduced items from the “self-coping” dimension of FoP-Q, focusing more on individuals' confusion about self-coping due to disease progression and fear arising from environmental and interpersonal relationship changes caused by disease progression. However, even brief scales like FoP-Q-SF have proven difficult to popularize in clinical practice, resulting in many patients with elevated FoP going undetected. FoP-Q-RS condensed FoP-Q-SF items into a rapid scale with four dimensions and five items, creating more concise content aimed at quickly screening patients at high risk for fear of disease progression. FoP-Q-SF/PR, FoP-Q-SF/P, and FoP-Q-SF/C share similar items with FoP-Q-SF, with modifications only for specific target populations to enhance applicability. The WARPS scale authors believe that although fear of disease recurrence and fear of disease progression are different concepts, they are often closely related; therefore, this scale emphasizes simultaneously assessing personal psychological experiences related to both disease recurrence and progression. The Acute Myocardial Infarction Patient Fear of Disease Progression Scale and HPV-Positive Women Fear of Disease Progression Scale, developed by Chinese scholars, were created for specific diseases. Both scales are based on Mishel' s Uncertainty in Illness Theory, which includes antecedents, appraisal, and coping; consequently, these two scales focus more on assessing fear related to physical health and bodily symptom changes resulting from the disease itself.

3.3 Limitations and Implications

Current FoP research tools exhibit the following limitations: Most existing scales originate from the German FoP-Q scale. Future development should reconstruct item pools without being limited to existing scale items to further develop FoP scales and enrich the variety of FoP assessment tools. The development of disease FoP-related scales in China started relatively late. Translated FoP scales lack large-sample reliability and validity testing, and domestically developed population-specific FoP scales also await large-sample validation. Given cultural differences between China and other countries, future efforts should focus on developing and validating localized FoP scales to better evaluate FoP levels in domestic patients and their families. Current FoP assessment tools lack clear grading systems for interpreting results, preventing them from providing a basis for clinical graded interventions. Future research should apply existing scales extensively to establish risk stratification for clinical application.

Disease is a family event, and caregivers' high FoP levels further affect the physical and mental health of both patients and families. China has only translated the spouse FoP scale; future work should focus on developing localized caregiver FoP assessment tools for caregiving populations.

This article reviews existing domestic and international FoP research tools regarding their main content, overall evaluation, and comparative analysis, aiming to guide clinical healthcare professionals in selecting appropriate scales for assessing FoP in patients and their families. Currently, FoP research in China remains in the exploratory stage, lacking localized universal FoP assessment tools. Translated FoP assessment scales lack large-sample, multi-center validation, primarily because the concept was introduced to China relatively late. Future research should develop large-sample, multi-center FoP assessment tools based on common disease types in China, providing evidence for clinical healthcare professionals to formulate psychological care plans and implement targeted interventions, helping patients and their families overcome FoP difficulties as early as possible.

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