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Validity and Reliability of the Korean Version of the Florida Patient Acceptance Survey

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ABSTRACT

Aim: To validate the Korean version of the Florida Patient Acceptance Survey (K-FPAS) and assess its reliability in evaluating the acceptance of implantable cardioverter defibrillators (ICDs) among Korean patients.

Design: A methodological research study was conducted to develop and validate the K-FPAS as a valuable tool for assessing ICD acceptance and its related factors in the Korean patient population.

Methods: A total of 243 participants, aged 18 years and older, who had received ICDs within the past year and were regularly monitored by cardiac specialists, were included in the study. The K-FPAS was meticulously translated and underwent expert validation, exploratory factor analysis, and confirmatory factor analysis to establish its construct validity. Content validity was confirmed by seven experts, and concurrent validity was examined using the Short Form-36 Health Survey. The reliability of the K-FPAS was assessed for internal consistency.

Results: The K-FPAS demonstrated robust content and construct validity, consisting of 15 items organised into four subdomains: "Return to Life," "Device-Related Distress," "Positive Appraisal," and "Body Image Concerns."

Conclusion: The K-FPAS is a valid and reliable instrument for evaluating ICD acceptance among Korean patients. It provides a robust methodological framework for exploring the multidimensional facets of ICD acceptance, particularly highlighting the significance of psychological and emotional well-being. This tool demonstrates considerable potential for advancing nursing research and guiding evidence-based interventions to enhance ICD acceptance and improve the overall quality of life for ICD recipients.

Patient or Public Contribution: Patients contributed to this study by providing responses on the study questionnaires, and five hospitals supported the data collection process by providing suitable facilities for interviews and questionnaires. This research aims to benefit patients and improve their well-being through better ICD acceptance assessment and support.

1 | Introduction

Implantable cardioverter-defibrillators (ICD) have been reported to effectively reduce the risk of sudden cardiac death (Kim and Park 2017). More than 100,000 ICD implantations are performed worldwide annually due to advances in diagnostic technology, device performance, and expanding ICD indications (Buckley and Shivkumar 2015). In South Korea, since the first

implementation of ICDs in 1996 (Park 2016), with the development of diagnostic technology and the preventive effects of ICDs on sudden cardiac death, the number of ICD implants increased by approximately 4.3 times (from 337 cases in 2010 to 1450 cases in 2019) (Roh et al. 2019). This number will continue to rise due to changes in ICD implantation guidelines, the increasing average lifespan, and the increasing number of patients with heart diseases (Roh et al. 2019).

ICD provides a life-extending effect by preventing sudden cardiac death due to ventricular fibrillation or ventricular tachycardia (Park 2016). However, patients with ICD experience physical and psychological changes following implantation and need to adapt to a new way of life, including daily activities (Parkash and Tang 2017). Additionally, they experience psychological distress, such as depression and anxiety, due to physical changes, electrical shocks, unpredictability of the future, concerns about the ICD itself, vague fears, and fear of death, which can impact physical functions, increase hospitalisation rates, and elevate mortality risk (Humphreys et al. 2016; Zartaloudi and Pappa 2019; Oshvandi et al. 2020; Savastano et al. 2020). Conversely, some patients with ICD effectively adapt to life after implantation and maintain better physical and mental health than before (Hopgood et al. 2020; Rottmann et al. 2018). These differences between patients depend on their ICD acceptance (Pedersen et al. 2017). Therefore, an adaptation process is necessary to help patients adapt to the significant life changes brought about by ICD, incorporating it into one's life, to ultimately promote a healthy life (Garrino et al. 2018).

It is necessary to consider the characteristics of patients with ICD and establish appropriate support systems and nursing interventions to achieve this. Evaluation of the level of ICD acceptance and understanding of the experience of patients should precede this. In South Korea, anxiety, depression, and quality of life are indirectly assessed to determine the level of ICD acceptance. However, this is not suitable for evaluating specific psychological and social issues faced by patients with ICD. In 2005, the Florida Patient Acceptance Survey (FPAS) was developed in English and has been translated and validated in Denmark (Pedersen et al. 2008), Turkey (Oz Alkan and Enç 2017), Japan (Umeda et al. 2021), China (Guo et al. 2021), Brazil (Silva et al. 2023), and other countries. In 2012, a 12-item short version was also developed (Versteeg et al. 2012). Both the original version and the 12-item short version are actively used to assess patient acceptance of ICD. Therefore, this study aimed to develop a Korean version of the FPAS (K-FPAS) developed by Burns et al. (2005) and to validate its reliability and validity. Using scientifically validated tools will help confirm the adaptation level of patients with ICD and contribute to the development of nursing interventions to promote positive adaptation.

2 | Methods

2.1 | Research Design

This was a methodological research study aimed at validating the reliability and validity of the K-FPAS, which was translated from the original tool developed by Burns et al. in 2005.

2.2 | Participants

Individuals aged 18 years and older who received an ICD to prevent sudden cardiac death, with fewer than 12 months elapsed since ICD implantation and were followed up regularly by a cardiac specialist were included in this study. The exclusion criteria included patients diagnosed with a mental illness and undergoing regular care, those with irreversible severe conditions such as advanced-stage cancer and those diagnosed with non-cardiac conditions unrelated to ICD implantation within the last 6 months. In factor analysis, the sample size should be 5–10 times larger than the number of samples (Kim 2019). Since confirmatory factor analysis (CFA) requires a minimum of 150 participants (Anderson and Gerbing 1988) and taking into account a 10% dropout rate, 256 questionnaires were distributed. Of the 256 questionnaires, 13 incomplete questionnaires were excluded. A total of 243 individuals were included in the final sample, with a participation rate of 94.92%.

2.3 | Research Tool

2.3.1 | Florida Patient Acceptance Survey

The FPAS includes 15 items divided into four subfactors: Return to Life, Device-Related Distress, Positive Appraisal, and Body Image Concerns. Additionally, it includes three extra items related to device knowledge and maintaining a sexual life, which were not included in the factor analysis measuring ICD acceptance. Items are scored on a 5-point Likert scale, grading the total scoring with negatively worded items (items 1, 2, 3, 4, 10, 12, 13, 14 and 15) being reverse-coded. The total score ranges from 0 (strongly disagree) to 100 (strongly agree). The higher the scores, the higher the level of ICD acceptance. The reliability of the developed tool was measured, and Cronbach's α value was 0.86.

2.3.2 | Short Form-36 Health Survey (SF-36)

The SF-36 was administered to confirm the convergent validity of the K-FPAS. The SF-36 measures health-related quality of life. It includes 36 items divided into eight health domains. Items are rated on a 6-point Likert scale. The total score ranges from 0 to 100. The higher the score, the better the physical and mental health. The reliability of the SF-36 was measured, and Cronbach's α value was 0.83 in this study.

2.4 | Instrument Translation

After obtaining approval from the original authors, the translation process was performed in accordance with the World Health Organisation guidelines (WHO 2015). The researchers first performed a forward translation of the original tool into Korean and created a preliminary translated version. Subsequently, professional translators were hired to translate this version back into the source language. Any discrepancies were resolved. Content validity was assessed by healthcare professionals with at least 3 years of experience in cardiac units. Finally, a pilot test with 20 patients with ICD, under conditions similar to those

of the study participants, was conducted to ensure clarity and comprehensibility.

2.5 | Data Collection

Data were collected from patients who underwent ICD implantations and were receiving care at five hospitals in Seoul, Gyeonggi and Incheon. The structured questionnaires were administered. Clinical characteristics were obtained by reviewing the medical records of the participants.

2.6 | Data Analysis

Data analysis was performed using SPSS/WIN 26.0 and AMOS 22.0. A multiple imputation approach was used to address missing data of less than 10%, generating two or more replacement values for each missing data point and integrating the results from various replacements to derive the final estimates (Kim 2016). The general characteristics of the study participants were analysed using descriptive statistics. Validity was assessed through content validity, structural validity and criterion-related validity. Content validity was evaluated by calculating the content validity index (CVI) based on the ratings of seven experts. A criterion of 0.80 or higher was considered desirable (Geldhof et al. 2014). Structural validity was evaluated using exploratory factor analysis (EFA) and CFA. For CFA, the maximum likelihood estimation method was employed, and model fit was evaluated using fit indices, including the chi-squared statistic (X^2), comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA) and standardised root mean square residual (SRMR). A CFI value of 0.90 or higher, SRMR values of 0.08 or lower, and RMSEA values approaching 0 indicated a good model fit. The tool suitability for factor analysis was assessed, and an EFA was conducted, with the Kaiser–Meyer–Olkin test and Bartlett's test of sphericity being performed (Choi and You 2017). Kaiser–Meyer–Olkin values exceeding 0.80 and Bartlett's test with $p < 0.05$ were considered favourable. The relationships between factors and variables were analysed using principal component analysis and varimax orthogonal rotation. Criterion-related validity was evaluated by examining the association between the measurements obtained from the tool and an external criterion. The quality of life evaluation tool (SF-36) served as the criterion, and the relationships between the K-FPAS items were assessed using Pearson's correlation coefficients. Internal consistency reliability was assessed by calculating Cronbach's α values for the entire tool and its subdomains.

2.7 | Ethics

This study was conducted in accordance with the principles of the Declaration of Helsinki and approved by the ethics committee of the Institutional Review Board of the university, where the principal investigator is employed (IRB No. REDACTED). Participants were informed of the study's purpose and process before participation, and informed consent was obtained. Written consent was obtained before allowing the participants to complete the questionnaires. Their anonymity and confidentiality were guaranteed, and all collected data were used solely for research purposes and securely protected. Participants were informed that there would be no disadvantages if they withdrew from the study and were compensated for the loss of time.

3 | Results

3.1 | General Characteristics

A total of 243 participants were included in this study. The participants' characteristics are shown in Table 1. The participants' mean age was 53.50 ± 15.21 years. Most of them were males (68.3%), were married (74.1%) and cohabitated (85.2%). Among the participants, 61.3% had non-ischaemic cardiomyopathy as an underlying disease for ICD implantation, and 56.4% had ICD implantation for primary prevention. Over half of the participants had an experience of shock (62.6%) and experienced an ICD-related side effect (52.3%).

3.2 | Validation

3.2.1 | Content Validity

Content validity was evaluated by seven experts, including four cardiovascular nurses with more than 5 years of experience, two dedicated nurses to ICD and one cardiologist. Each item was rated on a 4-point scale from 1 (not relevant at all) to 4 (highly relevant). The CVI was calculated for each item, which represented the number of experts who scored it as 3 or 4. The minimum acceptable CVI value was 0.78 (Polit et al. 2007). The S-CVI/Ave for the entire scale was 0.96, indicating good content validity. No items were deleted since all I-CVI values were greater than 0.80.

3.2.2 | Construct Validity

Construct validity was assessed through CFA based on data from 243 participants. The CFA results for the 15-item K-FPAS showed good model fit indices: $\chi^2 = 286.57$, df = 118, CFI = 0.930, TLI = 0.909, RMSEA = 0.077 and SRMR = 0.062. The 15 items were retained as part of the final model (Table 2).

EFA was initially performed to assess whether the 15 items should be restructured. The 15 items were found to load onto four distinct factors: Return to Life (4 items: 6, 11, 14 and 15), Device-Related Distress (4 items: 1, 2, 3 and 4), Positive Appraisal (4 items: 5, 7, 8 and 9) and Body Image Concerns (3 items: 10, 12 and 13). All items demonstrated factor loadings of 0.40 or higher. The four factors together accounted for 50.48% of the variance, with individual factors contributing 34.78% for Return to Life, 13.48% for Device-Related Distress, 9.62% for Positive Appraisal, and 6.07% for Body Image Concerns (Table 3 and Figure 1).

3.3 | Criterion Validity

The K-FPAS used the quality of life assessment tool (SF-36) as a reference for concurrent validity, and their correlation

TABLE 1 | Participant characteristics ($n = 243$).

General characteristics	Classification	Mean ± SD	*n* (%)
Age		53.50 ± 15.21	
Sex	Male		166 (68.3)
	Female		77 (31.7)
Marital status	Married		180 (74.1)
	Single/bereavement/divorce/separation		63 (25.9)
Cohabitation	Present		207 (85.2)
	Absence		36 (14.8)
Underlying disease for ICD implantation	Non-ischaemic cardiomyopathy		149 (61.3)
	Ischaemic cardiomyopathy		94 (38.7)
Purpose of ICD implantation	Primary prevention		137 (56.4)
	Secondary prevention		106 (43.6)
Experience of shock	Yes		91 (37.4)
	No		152 (62.6)
ICD-related side effects	Yes		127 (52.3)
	No		116 (47.7)
EF (%)		51.60 ± 7.83	
NYHA class	Class I		79 (32.5)
	Class II		137 (56.4)
	Class III		27 (11.1)
Number of comorbidities		1.03 ± 0.79	
Taking antiarrhythmic drugs	Yes		191 (78.6)
	No		52 (21.4)

Abbreviations: EF, ejection fraction; NYHA class, New York Heart Association functional classification.

TABLE 2 | Model fit indices of the Korean version of the FPAS ($n = 243$).

	χ^2	df	CFI	TLI	RMSEA	SRMR
Correction model	286.57 ($p < 0.001$)	118	0.930	0.909	0.077 (0.065, 0.088)	0.062
Acceptance criteria	$p > 0.05$		≥0.90		≤0.08	≤0.08

Abbreviations: CFI, comparative fit index; df, degrees of freedom; RMSEA, root mean square error of approximationSRMR, standardised root mean square residual.

was analysed using Pearson's correlation coefficients. The correlation between Likert questions was assessed using Pearson's correlation coefficients ($r > 0.4$ = moderate correlation; $r > 0.75$ = high correlation) (Terwee et al. 2007). Based on previous research indicating that a high level of ICD acceptance is associated with a better quality of life (Burns et al. 2005), the K-FPAS showed statistically significant correlations with Physical Health ($r = 0.544$, $p < 0.001$) and Mental Health ($r = 0.616$, $p < 0.001$) (Table 4). The coefficients revealed a significant correlation between the FPAS score and the eight subscales of the SF-36: (1) Physical Function ($r = 0.538$, $p = 0.001$); (2) Physical Role ($r = 0.506$, $p = 0.032$); (3) Bodily Pain ($r = 0.492$, $p = 0.001$); (4) General Health ($r = 0.639$, $p < 0.001$); (5) Vitality ($r = 0.607$, $p < 0.001$); (6) Social Function ($r = 0.632$, $p < 0.001$); (7) Emotional Role ($r = 0.536$, $p = 0.019$); and (8) Mental Health ($r = 0.689$, $p < 0.001$).

3.4 | Reliability

The Cronbach's α coefficient for the entire K-FPAS scale was 0.86, indicating excellent internal consistency. The Cronbach's α values were 0.77 for Return to Life, 0.74 for Device-Related Distress, 0.79 for Positive Appraisal and 0.70 for Body Image Concerns (Table 3). These findings confirmed the internal consistency (DeVellis and Thorpe 2021).

TABLE 3 | Results of exploratory factor analysis and internal consistency.

Item no.	Item	Factor			
		1 RTL	2 DRD	3 PA	4 BIC
11	I have returned to a full life.	0.80			
6	I am confident about my ability to return to work if I want to.	0.73			
15	I am concerned about resuming my daily physical activities.	0.57			
14	I am not able to do things for my family the way I used to.	0.56			
2	When I think about the device I avoid doing things I enjoy.		0.74		
1	Thinking about the device makes me depressed.		0.63		
3	I avoid my usual activities because I feel disfigured by my device.		0.62		
4	It is hard for me to function without thinking about my device.		0.40		
9	I would receive this device again.			0.80	
8	The positive benefits of this device outweigh the negatives.			0.67	
7	I am safer from harm because of my device.			0.66	
5	My device was my best treatment option.			0.66	
13	I feel less attractive because of my device.				0.74
12	I feel that others see me as disfigured by my device.				0.65
10	I am careful when hugging or kissing my loved ones				0.59
Eigenvalue		5.217	2.021	1.443	0.910
Total variance explained proportion (%)		34.781	13.475	9.617	6.065
Cumulative proportion (%)		34.781	48.257	57.873	63.939
Cronbach's α		0.77	0.74	0.79	0.70
Total Cronbach's α = 0.86					
Kaiser–Meyer–Olkin values = 0.862; Bartlett's test of sphericity = 1329.364 ($p < 0.001$)					

Abbreviations: BIC, body image concernsDRD, device-related distress; PA, positive appraisal; RTL, return to life.

3.5 | Final Tool Confirmation

The FPAS, comprising 4 factors, 15 items, and 3 filler items (items No. 16–19), was assessed for both reliability and validity. The 4 factors included 'Return to Life' (4 items), 'Device-Related Distress' (4 items), 'Positive Appraisal' (4 items), and 'Body Image Concerns' (3 items). The item sequence was rearranged by factor (Table 3). Filler items are related to device knowledge and maintaining sexual life, which are not included in the total score for measuring ICD acceptance can be utilised to understand the characteristics of ICD patients if needed. The tool employs a 5-point Likert scale, with items being measured from 1 (strongly disagree) to 5 (strongly agree). Each subdomain is evaluated by summing the scores, resulting in a score range from 0 (minimum score) to 100 (maximum score). Higher scores in each factor indicate better adaptation to Return to Life, higher Device-Related Distress, positive evaluation of ICD, and higher Body Image Concerns. Negative items (1, 2, 3, 4, 10, 12, 13, 14, and 15) were reverse-coded to measure the total ICD acceptance score. The total score ranges from 0 (minimum score) to 100 (maximum score), with higher scores indicating a higher level of ICD acceptance.

4 | Discussion

With the increasing number of patients with ICD implantations aimed at preventing sudden cardiac death, they should adapt effectively to the changes brought about by ICD and accept ICD to have a healthy life. ICD acceptance has been inversely associated with depression, anxiety, and clinical prognosis (Burns et al. 2005; Pedersen et al. 2008; Versteeg

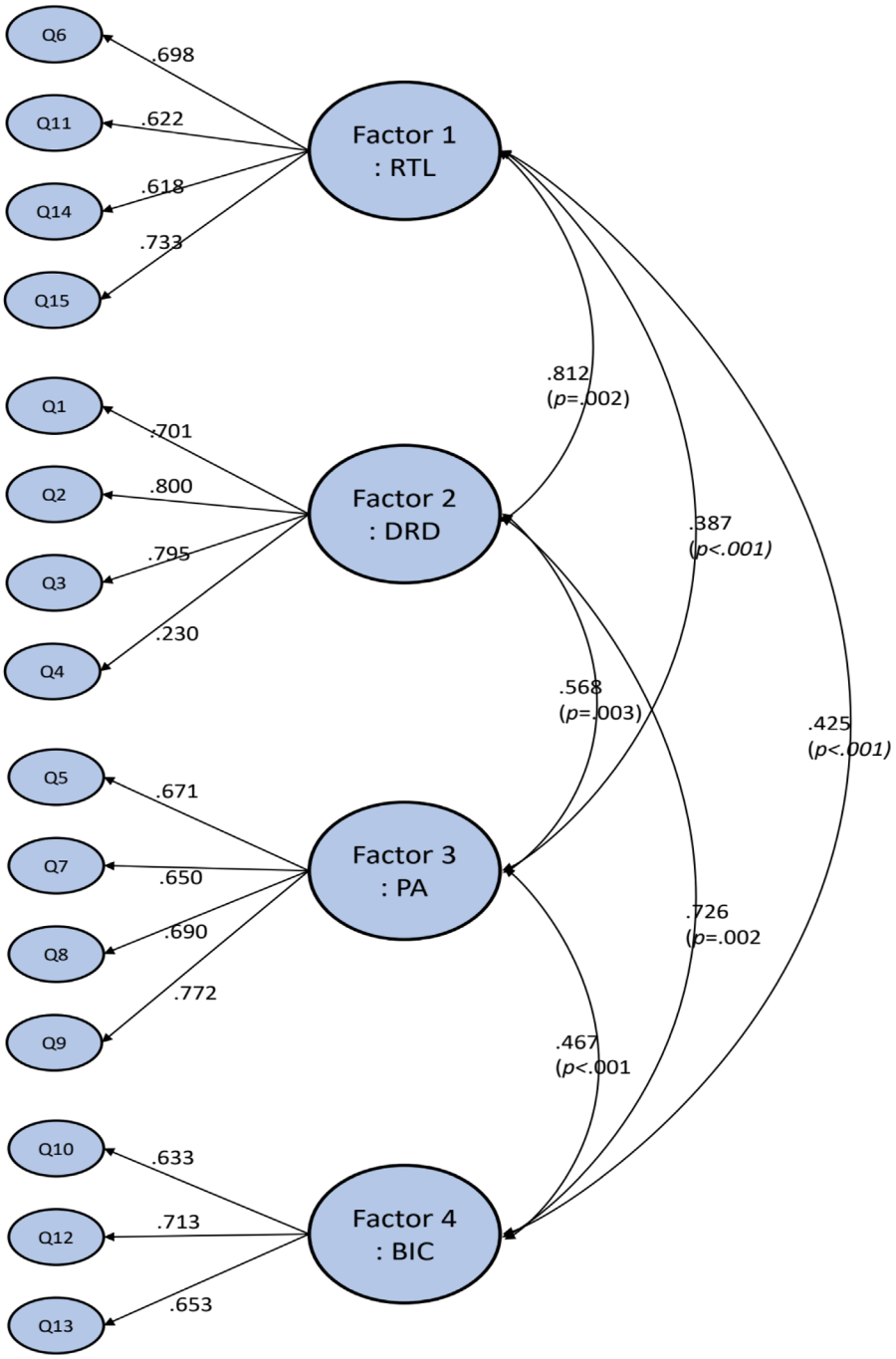

FIGURE 1 | Result of confirmatory factor analysis. Confirmatory factor analysis (CFA) of the Korean version of the FPAS. RTL, Return to Life; DRD, Device-Related Distress; PA, Positive Appraisal; BIC, Body Image Concerns.

et al. 2012; Sears 2020). Therefore, it is crucial to quickly identify patients with ICD with low acceptance who are at a higher risk of maladaptation. For this purpose, we developed a Korean version of the FPAS and verified its validity and reliability.

Verifying semantic equivalence, conceptual equivalence, and construct validity is essential when using tools developed in different linguistic or cultural contexts (Gere and MacDonald 2013). In this study, we conducted EFA and CFA after confirming the content validity through expert validation. As a result, the K-FPAS consisted of 4 subdomains and 15 items.

Content validity was established through expert validation, with all items showing I-CVI values above 0.80 and S-CVI/Ave reaching 0.96. The FPAS was translated into Korean effectively, reflecting the original English version without conceptual or semantic changes or confusion. In this study, EFA was performed using varimax orthogonal rotation, resulting in four underlying factors, similar to a study by Burns et al. (2005). These factors were categorised as follows: Factor 1: 'Return to Life', Factor 2: 'Device-Related Distress', Factor 3: 'Positive Appraisal', and Factor 4: 'Body Image Concerns'. Item 10 ('I am careful when hugging or kissing my loved ones'), which was originally included in Factor 2 ('Device-Related Distress'), was relocated

TABLE 4 | Correlation between the K-FPAS and SF-36.

SF-36	K-FPAS
Physical function	0.538**
Physical role	0.506*
Bodily pain	0.492**
General health	0.639***
PCS	0.544***
Vitality	0.607***
Social function	0.632***
Emotional role	0.536**
Mental health	0.689***
MCS	0.616***

Abbreviations: MCS, mental component summary; PCS, physical component summary.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

to Factor 4 ('Body Image Concerns'). Negative body image attitudes can lead to negative emotions and reduced quality of life (Frydensberg et al. 2023), and this is particularly evident in patients with ICD, where negative body image after device implantation may lead to avoiding physical contact and withdrawal from social situations. Item 10 was included in the "Device-Related Distress" factor in the original version but was relocated to the "Body Image Concerns" factor in the FPAS-Short version before being ultimately deleted (Versteeg et al. 2012). Translated the original tool (Burns et al. 2005) into Portuguese and Japanese have confirmed differences in item compositions and subdomains within the subdomains based on participants' cultural characteristics (Silva et al. 2023; Umeda et al. 2021). Body image satisfaction has shown a negative correlation with self-esteem and social activities, with cultural factors sometimes contributing to activity limitations (Seo and Han 2023). Thus, repeated studies are needed to validate its application in the context of various cultural and clinical characteristics of patients with ICD.

Using CFA, the model fit and item factors of the K-FPAS were tested. The results showed that CFI and TLI values of 0.930 and 0.909, respectively, along with SRMR at 0.062 and RMSEA at 0.077, met the established criteria for a good model (Bentler 1990; Hu and Bentler 1999; Browne and Cudeck 1993). Unlike the original tool, which only conducted EFA, this study additionally provided construct validity through CFA. The convergent validity of the K-FPAS was examined by correlating it with the SF-36 quality of life assessment tool. Statistically significant positive correlations were observed between the K-FPAS and various domains of the SF-36, indicating that higher ICD acceptance corresponds to improved physical and mental health. This confirmed the convergent validity of the K-FPAS.

The overall reliability of the K-FPAS achieved a Cronbach's α value of 0.86, which is similar to that of the original tool. The Cronbach's α values for the K-FPAS subdomains ranged from 0.70 to 0.79, which are slightly lower than those of the original tool (0.74–0.89). A Cronbach's α value of 0.70 is appropriate for reliability, whereas 0.80 is excellent and 0.90 is outstanding (Yu 2012). Thus, the K-FPAS is deemed a suitable tool for use in Korea.

Patients with ICD may experience both positive acceptance and isolation due to fears, anxiety, depression and changes in body image (Barisone et al. 2022). The management of patients with ICD focuses on several factors, such as quality of life, symptoms, functioning, anxiety, patient acceptance, psychological-social adaptation, satisfaction and well-being (Rumsfeld et al. 2013). They require social support, information and education to manage their condition. Inadequate support increases the risk of maladaptation in patients with ICD, which highlights the importance of swift assessment and appropriate nursing interventions. The K-FPAS, with its 15 items, can provide rapid and effective evaluation of the status of patients with ICD, making it superior to other assessment tools, such as the SF-36 or Hospital Anxiety and Depression Scale (Emons et al. 2019). In the K-FPAS, Factor 1 ('Return to Life') can effectively assess the recovery of life after ICD implantation. Patients with ICD are known to experience emotional instability, including fears and anxiety, with lower ICD acceptance, resulting in more negative emotions (Sears and Conti 2002). The K-FPAS is useful for identifying patients with ICD who are at high risk, particularly through Factor 2 (Device-Related Distress), which effectively identifies ICD-related distress. Patients with ICD not only experience distress but also exhibit positive emotions, such as feeling safe or coming back to life, after receiving ICD shocks or adhering to device recommendations (Sears and Conti 2002). This trend can be assessed through Factor 3 (Positive Appraisal).

The FPAS-Short version, which excludes the 'Body Image Concerns' subdomain and consists of 12 items contributing to the remaining 3 factors, has been reported to have better psychometric validity than the original 15-item version, making it more convenient to use (Versteeg et al. 2012). However, patients with ICDs often have significant Body Image Concerns, which, along with the fear of electrical shocks, are major sources of stress. Higher Body Image Concerns is associated with increased anxiety and depression, lower quality of life, reduced acceptance of ICDs, and greater difficulty in returning to daily life (Frydensberg et al. 2023, 2020; Pannag et al. 2021). Therefore, the original version, which provides a comprehensive evaluation of ICD acceptance across all four domains, is more suitable for use in Korea. Additionally, the original version is still widely used to assess acceptance among ICD patients.

A tool is needed to monitor the health status of patients with ICD who experience various physical and emotional changes, detect differences and changes continuously, and manage them. The K-FPAS has good sensitivity for identifying ICD acceptance levels (Pedersen et al. 2008; Versteeg et al. 2012). Furthermore, it can effectively assess risk factors for poor ICD acceptance in each subdomain. In this study, the validated K-FPAS consists of four subdomains and 15 items, allowing for a comprehensive understanding of the experience of patients with ICD, evaluating their physical and mental quality of life, and serving as a standardised educational guide for self-management. Also, the K-FPAS can be effectively utilised in

clinical settings to assess patients' psychological, social, and physical adaptation, design tailored nursing interventions, and evaluate the effectiveness of treatment plans. Future research should aim to apply the K-FPAS to diverse patient populations and investigate its utility across various ICD types, including subcutaneous devices and cardiac resynchronisation therapy (CRT) systems.

5 | Conclusion

This study provides a robust methodological foundation for evaluating ICD acceptance among Korean patients, paving the way for further investigations into device-specific and patient-specific factors affecting acceptance. This study represents a methodological investigation that assessed the validity and reliability of the K-FPAS. The results showed that the K-FPAS is a valid and dependable instrument for application in South Korea, offering significant utility for evaluating ICD acceptance among Korean patients. The importance of this study stems from the recognition that this validated tool can contribute to the enhancement of self-care by offering a comprehensive assessment of ICD acceptance in the context of Korean patients' lives. We suggest using this research tool to assess ICD acceptance, promote acceptance, and develop strategies for a healthy life. Furthermore, we hope that this tool can be used as a measurement instrument in nursing research and intervention programmes related to patient acceptance and adaptation to ICD. Further research is needed to reevaluate the validity and reliability of the tool by applying it to target populations based on the underlying diseases that necessitate ICD implantation.

Author Contributions

Methodology: Jae-Jin Kwak and Chohee Bang. Software: Jae-Jin Kwak. Validation: Jae-Jin Kwak and Chohee Bang. Formal analysis: Jae-Jin Kwak and Chohee Bang. Investigation: Chohee Bang. Resources: Chohee Bang. Data curation: Jae-Jin Kwak and Chohee Bang. Writing – original draft preparation: Chohee Bang. Writing – review and editing: Jae-Jin Kwak and Chohee Bang. Visualisation: Jae-Jin Kwak. Supervision: Jae-Jin Kwak.

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Ethics Statement

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board of Ewha Womans University. Ethical review committee statement. Forms can be viewed on request (IRB No. ewha-202,012-0022-01).

Consent

Informed consent was obtained from all subjects involved in the study. Written informed consent has been obtained from the subjects to publish this paper.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data underlying this article cannot be shared publicly due to the privacy of individuals that participated in the study. The data will be shared on reasonable request to the corresponding author.

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