



Cross-Cultural Validation and Reliability of the Schein's Career Anchors Scale for Nurses

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DOI: [10.22037/anm.v33i3.45756](https://doi.org/10.22037/anm.v33i3.45756)

Submitted: 10 Jan 2024

Accepted: 01 Jun 2024

Published: 15 Jul 2024

Keywords:

Career Anchors
Nurses
Psychometrics
Schein

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How to cite:

Asghari E, Sarbakhsh P, Sheikhalipour Z, Talebi R, Saberi Kajabadi A. Cross-Cultural Validation and Reliability of the Schein's Career Anchors Scale for Nurses. *Adv Nurs Midwifery*. 2024;33(3):27-34. doi: [10.22037/anm.v33i3.45756](https://doi.org/10.22037/anm.v33i3.45756)

Abstract

Introduction: The concept of career anchors pertains to identifying an individual's values, capabilities, interests, motivations, and needs concerning their professional trajectory. Career satisfaction and performance may be enhanced by tailoring career anchors to align with an employee's specific role. Nonetheless, there exists a paucity of studies investigating the psychometric properties of this scale within the nursing context. The present study has been conducted to address this gap.

Methods: This research involved scaling tests administered to a substantial cohort of nurses (N=470) from university hospitals in East Azerbaijan Province, Iran, in December 2021. After translating the scale, experts assessed its content validity index and ratio. Both participants and specialists evaluated face validity. Confirmatory factor analysis was employed to ascertain convergent and discriminant validity. Additionally, the maximum shared squared variance, average shared squared variance, and construct reliability were calculated using the average variance extracted. The underlying structure of the scale was assessed via exploratory factor analysis, while internal consistency was determined using Cronbach's alpha coefficient in SPSS Version 21.

Results: The instrument's content was deemed adequate, reflecting high internal consistency and reliability. However, confirmatory factor analysis did not substantiate the existence of eight instrumental factors, while exploratory factor analysis revealed six product factors, which accounted for 62.626% of the total variance.

Conclusions: The findings of this study indicate that Schein's career anchors scale necessitates modification to be effectively utilized for identifying the predominant career anchors of nursing professionals. Recommendations have been provided for nurses on how to adapt and implement the scale appropriately.

INTRODUCTION

Edgar Schein introduced Career Anchor for self-awareness in talents, values, and motivational needs in careers. [1]. Schein has identified eight work anchors that show people's interests in different types of work environments [2]. These anchors are: Technical/Functional Competence (TF), General

Managerial Competence (GM), Autonomy/Independence (AU), Security/Stability (SE), Entrepreneurial/Creativity (EC), Service/Dedication to a Cause (SV), Pure Challenge (CH), and Lifestyle (LS). Each of these anchors

influences the type of work environment that an individual prefers [3].

The career anchors theory suggests that individuals choose their profession based on a combination of their talents, skills, competencies, needs, and personal values [4]. Identifying career anchors leads to better job fit, performance alignment with values, reduced stress, and illness [5]. However, if there is an incompatibility between an individual's career anchor and their career, it can lead to demotivation and even cause them to leave their profession [6]. Therefore, evaluating one's career anchor can aid in career planning and ensure career satisfaction [7].

Career anchors are unique to every profession and organizational position, and they can affect one's effectiveness in their career [8]. Accordingly, a nurse must know what they like doing the most and what aspects of the career make it enjoyable, interesting, and exciting in order to manage their career effectively. Self-assessment inventory can be used to manage talent and plan for succession at the organizational level, but this approach is rarely used. A study conducted in Japan showed that a majority of nurses (63.7%) did not have career anchors that matched their career roles [9]. Some organizations prioritize their needs over individual career anchors, but some consider candidates' preferences [10].

Compared to other professions, nursing has limited research exploring the concept of career anchors. Consequently, there are few published scales available for evaluating career anchors. In Brazil, a 40-item Likert scale with four answer options ranging from "Never True" to "Always True" is used to assess career anchors in nursing [11]. In Japan, a scale with 39 terms and six factors has been developed to examine career anchors in nursing based on a qualitative study [9]. In the USA, a scale based on text review with 43 phrases and six factors has been used to examine the relationship between career anchors, professional development, and emerging career patterns among nurses [12].

In conclusion, only a small number of the scale for assessing the importance concept of career anchors in nursing are comprehensive and have undergone rigorous validation. Unreliable research scales that lack stability produce inaccurate results, which limits access to cumulative knowledge. Given the widespread use of Schein's original scale, which is reduced to 40 items and includes all eight career anchors, it is necessary to validate its reliability and validity in the field of nursing.

METHODS

Design

The current research employed a cross-sectional design with all measures being administered simultaneously. This study involved scaling tests with nurses from the

university hospitals of East Azerbaijan province, Iran in December 2021.

Schein's Career Anchors scale

The Schein career anchors scale, developed by Schein in 1985, is a widely-used tool in occupational research used to study how individuals choose their professional expertise. The scale has been extensively used in professional research over the past 30 years and has been applied in a variety of cultural settings [13]. This scale is free and its use is allowed for authors.

Translation-retranslation

We particularly utilized the Brislin strategy for back-and-forth interpretation, which included three steps of interpreting into the target dialect, back-translating into source dialect by another interpreter and after that settling irregularity through dialog [14]. The Persian translation was reviewed by the translators from the previous stages and members of the research team in a single session. The translation was accepted as it was highly compatible with the main scale [15].

Content Validity

To ensure the accuracy and relevance of the content, a Content Validity Index (CVI) was used to evaluate the items. The opinions of 15 experts in the field of nursing management (N=10) and instrumentation (N=5) were taken into consideration to calculate the CVI. They rated each item on a 4-point Likert scale from 1 (not very relevant) to 4 (very relevant) based on its degree of relevancy. The I-CVI (Item-level Content Validity Index) was calculated for each item by dividing the number of specialists who gave a score of 3 or 4 by the total number of specialists. An I-CVI score of ≥ 0.78 indicates good content validity. The scale's average CVI (Scale-level Content Validity Index) was also calculated by adding up all the I-CVI scores and dividing the sum by the total number of items.

Face Validity

To assess face validity, the scale was reviewed by 10 nurses and 15 faculty members who were selected purposefully. Face validity was done quantitatively by calculating the item impact. In addition, they provided feedback on item appearance and comprehensibility and their suggestions were also applied in wording.

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was used to confirm the existing factor structure. The reason for using CFA before exploratory factor analysis (EFA) in the cross-cultural validation of this scale was to establish the validity of the scale's underlying factor structure in the Iranian cultural context [15, 16]. Doing Exploratory Factor Analysis (EFA) before Confirmatory Factor Analysis (CFA) in studies that check how things work across different cultures can give misleading results. This is because EFA looks at the data without a set idea

of how it should be organized into factors. Starting with EFA can lead to different patterns in how factors are organized in different cultures, which makes it hard to prove that the scale works the same way in various cultures [15, 17]. The original version of the scale had eight domains, and this study used the CFA method to determine whether the 40 questions in the scale belonged to the correct domains. STATA14 software was used for the analysis, and the probability maximum method was used for estimation. All standardized factor loadings of the items were greater than 0.25 and statistically significant with p-values less than 0.001 [15, 16]; Therefore, no items needed to be removed from the analysis. Models were considered adequate if the Chi2/df index was less than 5, the CFI and TLI indices were greater than 0.90, and the RMSEA and SRMR indices were less than 0.08 [15, 16].

Reliability

The internal consistency of the reliability method was assessed for 8 domains using Cronbach's alpha coefficient.

Exploratory Factor Analysis

Since 8 factors in the CFA were not confirmed, EFA was used to look at the different parts of the tools used in nursing. The Principal Axis Factoring method was used to find patterns in data using IBM-SPSS 21. A value higher than 1 was used to find important factors. The areas were found using the Oblimin rotation method with Kaiser Normalization.

Samples and Setting

This research was conducted in East Azerbaijan province, which is one of the most populous provinces in Iran and has several specialized and sub-specialized hospitals. The study included all 35 hospitals affiliated with the University of Medical Sciences in the province. To determine the sample size, 5 to 10 participants were considered for each term of the tool. Since the tool has 40 terms, at least 200 samples were required for each factor analysis. The inclusion criterion was working in the clinical wards and the exclusion criterion was employment in a non-governmental hospital and not affiliated with Tabriz University of Medical Sciences.

To collect the data, an electronic scale on the <https://porsline.ir/> website was used, and the survey link was sent to all the training supervisors of the hospitals. They were then asked to share it on their respective hospital's WhatsApp groups. After two weeks, the supervisors were asked to re-share the link.

The survey link was deactivated after two weeks when there were no more responses. Finally, 470 scales could be analyzed which covers at least 200 samples for both factor analysis. Before collecting data, the samples were randomly divided into two groups: 235 individuals for confirmatory factor analysis and 235 individuals for

exploratory factor analysis. Cronbach's alpha coefficient was calculated for the entire sample of 470 individuals.

RESULTS

A total of 512 scales were completed, out of which 42 of them filled out by nurses employed in non-university hospitals or located outside the province.

Table 1. Demographic Characteristics of the Participants (N=470)

State	Frequency	Percentage
Age		
<=30	137	29.1
31-40	205	43.6
41-50	114	24.3
>50	11	2.3
Total	467	99.4
System	3	.6
Work Experience		
<=5	98	20.9
6-10	108	23.0
11-20	207	44.0
>=21	55	11.7
Total	468	99.6
System	2	.4
Gender		
Female	348	74.0
Male	122	26.0
Total	470	100.0
Marital Status		
Married	332	70.6
Single	132	28.1
Without	6	1.3
Wife/Husband		
Total	470	100.0
Employment Status		
Official	266	56.6
Contract-based	66	14.0
Corporation	55	11.7
Other	50	10.6
Contractual	33	7.0
Total	470	100.0
Educational Degree		
Bachelor's	422	89.8
Master's	48	10.2
Total	468	99.6
Total	470	100.0
Shift Type		
Rotational	378	80.4
Fixed Morning	84	17.9
Fixed Evening	8	1.7
Total	470	100.0
Workplace Section		
Emergency	99	21.1
Special Ward	119	25.3
Surgery	57	12.1
Internal	50	10.6
Other	145	30.9
Total	470	100.0

These 42 scales were excluded, and the remaining 470 scales were analyzed, resulting in a response rate of 11.75% of 4000 nurses. The mean (standard deviation) of age and work experience of the participants were 35.97 (7.29) and 12.16±6.90, respectively. The demographic characteristics of the participants are provided in Table 1.

Content and Face Validity

All items had an excellent average CVI of more than .92. The I-CVI for each item was also higher than .80. However, no item was removed as a result of the content and face validity assessments.

Confirmatory Factor Analysis

The findings from the CFA revealed that every item in its corresponding factor had standardized factor loadings greater than 0.25, and all were statistically significant with a p-value below .001 [18]. As a result, no item was excluded from the analysis. According to the results of confirmatory factor analysis was 3.73 (RMSEA=.076, CI95 %:(.073,.079), SRMR=.1, AIC=63030.550, BIC= 63645.154, CD=1, TLI=.81, and CFI=.82). The RMSEA index indicated that the theoretical structure of the scale and the relevance of the questions to the 8 domains specified in the study population were acceptable. However, the CFI index

and TLI index were below the suggested cut-point values in the references, measuring 0.82 and 0.81 respectively. This suggests that there is weak construct validity of the scale in its current form and 8-factor structure for the applied population. The results can be viewed in Figure 1.

Exploratory Factor Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .960 indicating an adequate sample size for the analysis. Additionally, Bartlett's test showed a significant correlation between the data (Approx. Chi-Square was 11713.430, df=780, p-value < .0001) confirming the appropriateness of the data structure. The test revealed six factors with more than one eigenvalue, which accounted for 62.626% of the total variance. The factor loadings for each factor are listed in Table 2.

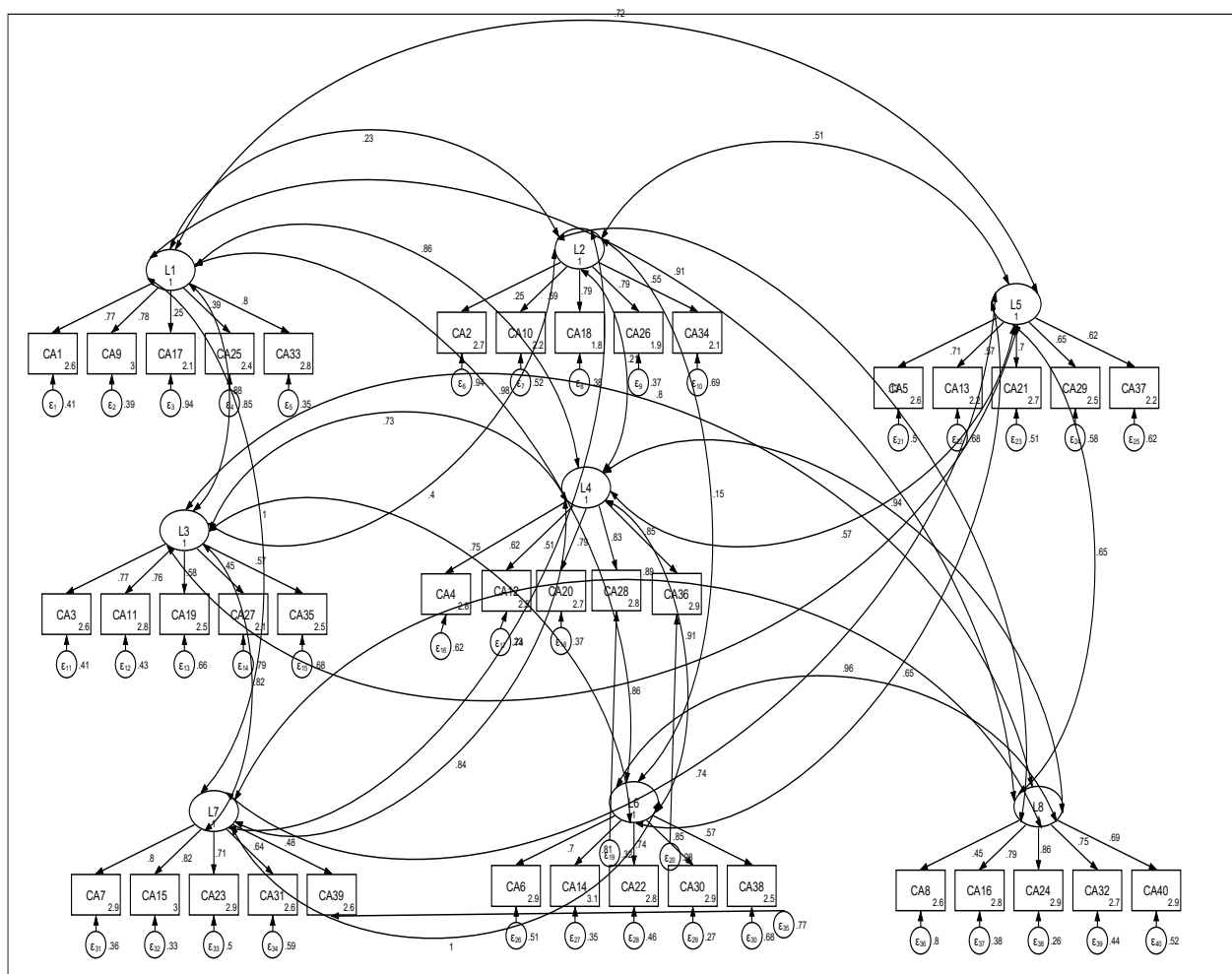


Figure 1. Confirmatory factor analysis of the Schein's Career Anchors Scale for Nurses (N=235)

Table 2. Exploratory Factor Analysis results of the 6-factor solution with factor loadings and explained variances per factor (N=235)

		Factor					
		1	2	3	4	5	6
CH	My career dream is to be able to solve problems, or to be successful in challenging situations.	.737	-.053	.008	-.008	.077	-.108
TF	I will only feel successful in my career if I can improve my technical or functional skills to a very high level.	.650	-.058	.021	-.036	.145	-.112
GM	My most career satisfaction is at the time when I am able to manage the efforts of others	.648	.099	-.005	-.025	-.018	.026
AU	I wish I had a career that I could do things on my way and according to my schedule.	.646	-.017	.110	-.315	-.187	-.063
CH	I will feel successful if I can use my talents to serve others	.603	-.081	.099	.088	.128	-.265
SV	I will only feel successful in my profession if I feel that I contribute to the well-being of society.	.592	.017	.031	.105	.183	-.105
TF	I wish I could be so good at what I do that people use my advice constantly.	.576	.019	.081	.011	-.006	-.273
SV	My most career satisfaction is at the time when I can use my talents to serve others.	.538	.014	.057	.040	.069	-.316
CH	My most career satisfaction is at the time when I have managed to solve seemingly unsolvable problems or gained seemingly impossible chances.	.452	.014	-.047	-.143	.249	-.142
AU	My most career satisfaction is at the time when I am completely free in determining my tasks, plans, and procedures.	.446	.041	.181	-.319	-.138	-.134
TF	My most career satisfaction is at the time when I can use my special skills and talents.	.425	-.028	-.081	-.169	.211	-.328
EC	My most career satisfaction is at the time when I am able to make a tool which is the result of my ideas and efforts.	.358	.070	-.097	-.337	.230	-.048
SE	For me, job security and stability are more important than freedom and autonomy at work.	.315	.161	.182	.231	.160	-.236
GM	I will feel successful only when I become the director of nursing and matron (general manager) of a hospital.	-.115	.846	.054	.055	.046	.133
GM	For me, becoming a director of nursing and a matron (general manager) is more attractive than being a head nurse (executive director) in my field.	-.117	.800	-.016	-.051	-.033	-.110
GM	I wish I become the director of nursing and matron (general manager) of a large hospital and make decisions that affect many people.	.144	.720	-.097	-.057	-.128	-.131
GM	I would rather to resign than take a career which takes me away from managerial works.	-.139	.403	.182	-.174	.240	.110
TF	For me, becoming a head nurse (executive director) in a specialized field is more attractive than becoming a nursing director and matron (general manager).	.222	.249	.151	.139	.163	.144
SE	I would rather resign than take on a career which would jeopardize my safety in the hospital.	.039	.089	.682	.002	-.025	-.127
LS	I would rather resign than having a career which jeopardizes my management over personal and family issues.	-.031	.023	.674	.008	-.070	-.187
AU	I would rather resign than take a career which would diminish my independence and freedom.	-.013	-.075	.454	-.324	.144	-.075
TF	I would rather to resign than to be obliged to do various stuffs which are outside my field of expertise.	.104	.010	.444	-.103	.307	.161
EC	I am thinking on establishing and running my own business.	-.138	.175	.055	-.566	.133	-.140
EC	Creating a personal business for myself is more important than achieving a top management position in someone else's organization (hospital).	-.012	-.027	.352	-.469	.114	.054
EC	I'm always looking for ideas which will allow me to start my own business.	.255	.133	.038	-.463	-.030	-.088
AU	I will feel successful in my profession only if I achieve full autonomy and freedom.	.206	.207	.207	-.368	-.071	.042
EC	I will feel successful in my profession only if I succeed in creating or making a device which is entirely my product and idea.	.179	.176	-.109	-.352	.318	-.008
AU	For me, being able to work in my way without restrictions is more important than career security.	.157	.229	.145	-.298	.165	.241
CH	For me, working on problems that are almost unsolvable is more important than getting a top management position.	.007	-.010	.040	-.028	.606	-.117
SV	I would rather resign than take on a career which undermines my ability to serve others.	.037	.004	.233	-.046	.418	-.215
CH	I am looking for career opportunities which challenge my problem-solving skills and/or competitiveness.	.236	.207	-.221	-.231	.392	-.181
SE	I wish I had a career which would allow me to feel more stable and secure.	.087	.106	.106	.052	.098	-.716
SE	My most career satisfaction is at the time when I feel I have full financial and career security.	.124	.100	.118	-.029	-.054	-.698
SV	I wish to have a career which contributes to humanity and society.	.269	-.025	-.023	.004	.192	-.612
LS	I feel successful when I can balance my personal, family, and professional issues.	.273	-.004	.085	-.045	.040	-.605
LS	For me, balancing the demands of my personal and professional life is more important than achieving a top management position.	.122	-.105	.101	-.139	.185	-.516
LS	I have always been looking for career opportunities which have less interference with my personal and family issues.	-.011	-.026	.225	-.145	.148	-.499
SE	I am looking for career opportunities in organizations which give me a sense of security and stability.	.199	.050	.303	.064	.071	-.463
LS	I am dreaming of a career which allows me to manage each of my personal, family, and professional needs.	.351	-.024	.232	-.089	-.095	-.422
SV	I would rather use my skills to make the world a better place to live than to reach a top management position.	.317	-.107	-.035	-.101	.253	-.376
Initial Eigenvalues % of Variance		38.854	9.245	4.748	3.835	3.216	2.729

Extraction Method: Principal Axis Factoring. Rotation Method: Oblimin with Kaiser Normalization. a. Rotation converged in 23 iterations.

Technical/Functional Competence (TF), General Managerial Competence (GM), Autonomy/Independence (AU), Security/Stability (SE), Entrepreneurial/Creativity (EC), Service/Dedication to a Cause (SV), Pure Challenge (CH), and Lifestyle (LS).

Reliability

Table 3 shows the reliability coefficients. Cronbach's alpha coefficient for the entire scale was .95, and for each domain, it was more than 0.72.

DISCUSSION

The purpose of this study was to evaluate the career anchors of nurses using Schein's model. The scale used

in the study had a high CVI score. However, during the study, it became evident that some nurses had difficulty understanding certain job titles, such as general manager and executive director. As a result, the researchers included alternative job titles that were more familiar to the nurses. The head nurse's title was included in parentheses next to the executive director, while the title of matron was included in parentheses next to the

general manager. This shift was anticipated because of the restricted number of managerial roles within the Iranian nursing systems [19].

Four of the ten scales submitted for face validity included feedback suggesting that the phrases associated with creativity implied that nurses lacked the ability to be very innovative. Similar articles have also reported that the level of creativity and innovation among nurses is generally low [20-23]. This finding is significant because nursing is regarded as both an art and a science, requiring the application of creativity and the artistry inherent in nursing.

During the validity assessment of the instrument, researchers discovered that the reliability of responses to autonomy-related items on the scale might be limited. This limitation arises because, in Iran, nurses must adhere to medical directives and may lack the freedom to deliver care according to their own judgment. Asghari et al.'s research showed that Iranian nurses have limited freedom to provide nursing care independently and often only adhere to medical prescriptions [24].

Based on CFA results, no items were excluded from analysis. However, the current 8-factor scale showed weak construct validity in one population. In Turkey, the 9-factor career stall model of COI had better factorial validity than Schein's 8-factor model [25]. The paper looks at whether the career grapple concept is still pertinent within the changing work conduct as an effect of the coronavirus flare-up. Exploratory figure analysis was employed to review the collected data. They comes about extricate six unused structures whereas only entrepreneurial inventiveness reflects the first grapple. Three modern career stays are shaped: financial security, administrative competence, and work-life balance. Work commitment includes specialized competence and geographic security. Two career grapples are loosened due to declining factors. One significant challenge shapes a career stay. Cultural factors, work environment conditions, and local lifestyle influence one's career grapple, emphasizing the need to consider Indonesian societal characteristics for career development [26]. Hence building a new special scale may seems necessary; as Kubo et al. in japan pointed to create the career anchors scale among nurses and assess its unwavering quality and legitimacy [27].

Strongest relationships found between TF and CH, and CH and C. Comparing two constrained models, significant chi-square difference values observed for unconstrained nine-factor model versus each eight-factor model. Implying significant differences for all sets. This indicates that the constructs are not entirely interconnected; although they assess a shared aspect, each development also measures something distinct on its own.

Based on the results of exploratory factor analysis, six factors were identified with more than one eigenvalue that accounted for 62.626% of the total variance. The

findings revealed that factor 2 was mainly associated with the item of GM anchor, factor 4 indicated EC anchor, and factor 6 depicted LS anchor. However, the other factors included items from most anchors.

Marshal and Bonner came up with a nine-factor structure for the scale after conducting an exploratory figure analysis [28]. The Entrepreneurial Creativity anchor was split into two anchors: one for entrepreneurship and the other for creativity.

The suggested six-construct model appears to have a reasonable level of fit, but there are some issues with certain items that lead to errors. Specifically, some items are impassive and cause related inaccuracies, like item #17 which states "Getting to be a senior useful manager in my range of skill is more appealing to me than getting to be a common manager." Our results indicate that the fit of a model depends on allowing for both positive and negative loadings. Additionally, some items begin with the phrase "I would rather leave the organization than...", There are items that do not align with others and can lead to errors. For example, the 25th item was removed due to low factor loadings. Future studies should address these issues. Cronbach's alpha coefficient for the entire scale was and for each domain was indicating good internal consistency [29].

Individuals often take around a decade to identify and articulate their true career anchor due to self-perception variations (1). Although most people's career anchors remain relatively stable, there may be occasions where they deviate temporarily due to a specific career or circumstance (1).

This study focuses on Schein's 40-item scale, while some suggest additional anchors like employability and spiritual purpose for today [30]. Similarly, Suutari and Taka propose expanding the internationalism anchor to better characterize internationally-oriented managers [31]. This area should be explored further in future research.

Limitations

At the time of sampling, a coronavirus pandemic was ongoing, which made in-person sampling and randomization impossible. Consequently, due to the necessity for a large sample size, electronic sampling was employed. While electronic sampling mitigated the aforementioned limitations, it introduced an uncontrollable challenge due to the low response rate and uncertainty regarding the accuracy of the responses. Future researchers should take this limitation into account when utilizing and generalizing the results.

CONCLUSION

This study evaluates the validity of Schein's scale, which forms the basis of Schein's Career Anchor Theory. The research suggests re-evaluating current items and adding new ones to enhance the scale's effectiveness for theoretical research and practical use by career

counselors. Recommendations include utilizing the scale in longitudinal studies to assess consistency in career anchors and exploring career satisfaction in occupations aligned with one's anchor over time. Cultural influences on career anchors should also be examined, along with evaluating the scale in different societies and comparing it to other relevant variables.

Application Remarks

Nurses have a dominant career anchor that influences their roles and management preferences. Common career anchor scales are not suitable for nurses, so dedicated modifications based on qualitative studies are recommended for accurate assessment.

AUTHOR'S CONTRIBUTIONS

Elnaz Asghari: Conceptualization, Project administration, Funding acquisition, Writing – original draft.

Parvin Sarbakhsh: Methodology, Formal Analysis.

Zahra Sheikhalipour: Visualization, Project Administration.

Rogayeh Talebi: Data Gathering, Validation, Resources.

Amir Saberi Kjabadi: Data curation, Writing – review & editing.

All authors read and approved the final manuscript.

ACKNOWLEDGMENTS

The authors would like to thank the authorities of Tabriz University of Medical Sciences for their support and the participants for their valuable cooperation in this study. We would like to thank the Clinical Research Development Unit of Sina Educational, Research and Treatment Center, Tabriz University of Medical Sciences, Tabriz, Iran for their cooperation in conducting this study.

ETHICAL CONSIDERATIONS

The research was conducted after obtaining a permission from the regional ethics committee of Tabriz University of Medical Sciences under code No. IR.TBZMED.REC.1400.288. Before sampling, relevant authorities' permission was obtained.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

FUNDING

This research was funded by Tabriz University of Medical Sciences (Grant/Award Number: IR.TBZMED.REC.1400.288).

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