Identidad del profesorado de matronería y afrontamiento ante incidentes críticos: construcción y validación de un instrumento

Identity of the Midwifery Professors and Coping with Critical Incidents: Construction and Validation of an Instrument

Identidade de professoras de obstetrícia e enfrentamento de incidentes críticos: construção e validação de um instrumento

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Resumen

El objetivo de esta investigación fue diseñar y validar un instrumento que midiera los componentes de las dimensiones identitarias y el abordaje ante incidentes críticos en matronas y matrones docentes en Chile. Se aplicó un estudio cuantitativo, descriptivo y transversal durante nueve meses. Se construyó un cuestionario con las categorías emergentes de entrevistas semiestructuradas y grupos de discusión de un estudio previo. Luego, se realizó una validación de contenido por expertos y prueba piloto, para finalmente aplicar el instrumento a 231 docentes de la disciplina de 21 universidades del país. Los datos recolectados se analizaron por medio de un análisis factorial exploratorio y confirmatorio. Adicionalmente, a través de la percepción de los involucrados y análisis de estadísticos descriptivos, se validaron distintos tipos de incidentes críticos que permitieron identificar las estrategias de afrontamiento de negación, evasión, reflexión transitoria y reflexión innovadora. Como resultado, se obtuvo un instrumento de medición con base en una prueba de validez de contenido, de constructo y consistencia interna, que determinó las dimensiones identitarias y posibilita conocer cómo los docentes afrontan las situaciones desbordantes en escenarios académicos. En conclusión, el estudio no solo abre el camino para futuras investigaciones cuantitativas, sino también levanta los primeros sustentos científicos-empíricos para elaborar un programa de formación docente que entregue herramientas reflexivas para fortalecer la auto-representación del profesorado de matronería.

Palabras clave: cuestionario, docencia universitaria, identidad profesional, incidentes críticos, matronería.

Abstract

The objective of this investigation was to design and validate an instrument that measures the components in the identity dimensions and critical incident approach in midwives professors in Chile. A quantitative, descriptive and cross-sectional study was applied for nine months. A questionnaire was constructed with the emerging categories of semi-structured interviews and discussion groups from a previous research. Then, a content validation and pilot testing were conducted by experts, to finally implement the instrument to 231 discipline professors from 21 universities of the country. The collected data were analyzed by means of an exploratory and confirmatory factor analysis. Additionally,

through the perception of those involved and the analysis of descriptive statistics, different types of critical incidents were validated which made it possible to identify coping strategies of denial, evasion, transitory reflection and innovative reflection. As a result, a measurement instrument vas obtained based on a content validity, construct validity and internal consistency test, which determined the identity dimensions and to know how the professors cope with overwhelming situations in academic contexts. In conclusion, the research not only opens the way for future quantitative investigations, but it also builds the first scientific-empirical foundation for the elaboration of a teacher-training program that delivers reflexive tools for the strengthening of self-representation of the midwifery teaching staff.

Keywords: questionnaire, university teaching, professional identity, critical incidents, midwifery.

Resumo

O objetivo desta pesquisa foi projetar e validar um instrumento que mede os componentes das dimensões identitárias e a abordagem de incidentes críticos em parteiras e professoras de obstetrícia no Chile. Foi aplicado um estudo quantitativo, descritivo e transversal durante nove meses. Foi construído um questionário com as categorias emergentes de entrevistas semiestruturadas e grupos de discussão de um estudo anterior. Em seguida, foi realizada uma validação de conteúdo por especialistas e um teste piloto, para finalmente aplicar o instrumento a 231 professores da disciplina de 21 universidades do país. Os dados coletados foram analisados por meio de uma análise fatorial exploratória e confirmatória. Adicionalmente, através da percepção dos envolvidos e da análise de estatísticas descritivas, validaram-se diferentes tipos de incidentes críticos que permitiram identificar estratégias de enfrentamento de negação, evasão, reflexão transitória e reflexão inovadora. Como resultado, obteve-se um instrumento de mensuração baseado em um teste de validade de conteúdo, validade de construto e consistência interna, que determinou as dimensões identitárias e possibilita conhecer como os professores lidam com situações avassaladoras em ambientes acadêmicos. Em conclusão, o estudo não apenas abre caminho para futuras pesquisas quantitativas, mas também levanta os primeiros suportes científico-empíricos para desenvolver um programa de formação de professores que forneça ferramentas reflexivas para fortalecer a autorrepresentação das professoras de obstetrícia.

Introduction

During the 21st century, Chilean universities have implemented a competency-based pedagogical model that responds to the needs of modern society, promoted by the Bologna process (1999) and later with the creation of the European Higher Education Area (Arriazu, 2013). . Faced with these new challenges, the function of the teaching staff expands to teach, investigate, mediate, manage, innovate and evaluate learning in a way that is in tune with the mission and vision of the institution to which it belongs (Zabalza and Lodeiro, 2019). However, to be a university teacher, it is not enough just to have knowledge of the discipline that is learned through previous experience and the observation of their own trainers, but, in addition, educational training is required (Ángel, Ruiz and Rojas, 2017).

The local reality shows that the gateway to the academic body of the Obstetrics and Child Care career (Midwifery, a discipline that trains professionals in sexual and reproductive health) is based mainly on years of experience in clinical work, and to a lesser extent on prior pedagogical preparation. This implies teaching the discipline and equipping oneself with educational skills to respond to the new demands in teaching and in the profession. Added to this is the development of the areas of research, linkage and management; adapt to the social and technological environment; manage a heterogeneity of student profiles; apply innovative teaching strategies that enhance the active role of the learner, and perform a multiplicity of roles in the face of an increasingly challenging and changing work environment (Zabalza and Lodeiro, 2019). This has resulted in a certain lack of definition of the identity of the midwifery teaching staff, especially in new or beginner teachers (Quilaqueo, Quintriqueo and Riquelme, 2016).

The concept of professional teaching identity has a variety of definitions that have been increasing in recent years. Initially, it could be said that it is characterized by the interaction of cognitive, affective and social representations that are perceived as their own, are maintained over time and give continuity to the existence of being a teacher (Akkerman and Meijer, 2011; Hermans, 2018). According to Thomas and Beauchamp (2011), identity

is the negotiated experience of the educational agent that implies the identification of belonging to a community, participation in collective spaces and academic trajectory. In such a way that this concept is a complex construct that includes multiple elements that characterize the personal and professional identity organized from the experiences of each individual, the pedagogical action and the links with the members of the educational community.

This perspective is part of the dialogic self theory, whose founder Hubert Hermans (2014) recognizes identity as a theoretical construct made up of various positions, expressed through their own voices, each of which interprets a reality. The self of an individual "has the potential to allow dialogic relationships not only between different people and groups positioned in society in general, but also between different positions in the self of the same person" (Hermans, 2014, p.138). Therefore, dialogue and feedback are key to understanding what was heard and necessary for self-regulation in university practices. This approach is complemented by Lev Vygotsky's (1978) theory of social constructivism, which highlights the interaction of interpersonal and historical-cultural factors of individuals as the key to human development.

The identity or referential self-representation of the teacher is made up of three dimensions centered on what he knows, does and feels about teaching:

1) The conceptions about teaching and academic positions related to what to teach and what are the roles that must be fulfilled in the university.

2) Pedagogical and evaluation strategies that respond to how students' learning is taught and evaluated.

3) The emotions that arise when teaching (Monereo y Domínguez, 2014; Monereo y Pozo, 2011).

To modify these identity components, it has been shown that critical incidents, although they are unexpected temporal-spatial events that cause an emotional imbalance of the teaching staff, allow a radical change in their own professional identity (Everly and Mitchell, 1999; Del Mastro and Monereo , 2014), as long as reflection is the strategy that guides this transformation (Nail, Gajardo and Muñoz, 2012). In such a way that, to regain control of the situations that occur in the classroom and in the clinical fields, conflict management tools are needed that allow a change in the self-representation of the educator. Likewise, the psychological mechanisms involved must be profound so that a new version of each individual is really configured (Monereo, Badía, Bilbao, Cerrato, & Weise, 2009).

In this sense, developing this potential requires reflective spaces to learn new coping strategies. In this regard, it has been shown that the analysis of critical incidents allows teachers to anticipate the facts and manage their actions properly (Contreras, 2014). For Day (2019) and Monereo et al. (2009), a formation of these characteristics means a transformation in the identity profile of the academic. Therefore, professional teacher development can guarantee a constant reflection on the daily exercise that aims to build their identity and achieve more effective teaching.

According to Aguayo, Castelló and Monereo (2015), these destabilizing events in university teaching are classified into seven types:

1) The organization of time, space and resources are essential for the development of student learning activities.

2) The rules of conduct involve a series of disruptive attitudes that intervene in relationships between individuals.

3) The clarity and adequacy of the transmitted contents are central axes of the significant learning of the student body.

4) The teaching methods according to the innovation of the undergraduate curricula and in accordance with the type of profession.

5) Motivation is an essential component during the teaching-learning process.

6) Evaluation is an element of the training process that affects the way of teaching and the way of learning.

7) Personal conflicts are the cause of confrontations from minor to major between the teacher-student dyad.

According to the cognitive-transactional model of Lazarus and Folkman (1984), situations of threat, harm and challenge cause stress or affective lack of control that is based on the cognitive evaluation of both the stimulus and the response. Then, critical incidents generate a cognitive-emotional assessment of the teacher from the interaction between people and their educational environment. To deal with this type of event, awareness implies assessing the consequences that the incident has for the teaching staff and evaluating one's own resources, in order to avoid or reduce the negative effects of the context. For Martín, Jiménez and Fernández (2000), critical incidents make the teacher react ironically, aggressively, evasively or reflexively. Then, coping strategies range from ignoring or denying the problem (avoidance or denial strategies), through solving the conflict locally with the possibility of it reproducing again (transient, provisional or

temporary strategy), to making a global change. that supposes an innovation in the way of thinking and acting of the teacher (innovative or structural strategy). Therefore, these unexpected events are a useful tool that promote reflection in each teacher, which must be focused on what they do and how they do it so that students learn in a meaningful way (Monereo et al., 2009).

In recent decades, various international (Aguayo et al., 2014; Martínez, 2017; Miranda and Vargas 2019) and national (Contreras, 2014; Vanegas and Fuentealba, 2019) investigations have been published that point to the teacher's professional identity as a reference for higher education. The role of teachers not only depends on the knowledge of their profession, but also recognizes the influence of the social environment on their pedagogical practices and their emotions for teaching. Also, there is evidence of studies in different latitudes on the identification of the most frequent critical incidents, their analysis technique and coping strategies most commonly used by university teachers (Aguayo et al., 2015; Monereo, 2019; Weise and Sánchez, 2013). These inquiries highlight reflection as a useful tool for the construction of the professional identity of teachers. However, the referential evidence of these topics is incipient in the interest group (Altamirano, Nail y Monereo, 2020a, 2020b, 2020c).

For the most part, the aforementioned investigations were of a qualitative type through social research techniques such as interviews, focus groups, case studies and participant observation. While quantitative studies with the application of parametric instruments are scarcer. For example: Badía, Monereo and Meneses (2011) contributed with the design and validation of a questionnaire called Evaluation of university professors in the face of critical incidents - Epic Final 2, which aims to address identity components such as the conceptions of professors from the approaches for the teaching of Trigwell and Prosser's (2004) inventory, and determine feelings about university teaching through a set of bipolar adjectives arranged in pairs (Osgood, Suci and Tannenbaum, 1957). Likewise, this instrument has a series of critical incidents that involve interrelationships between teachers and students, academic and curricular issues. Years later, this section was applied to a group of professors from a private Peruvian university, which made it possible to identify the most recurrent coping strategies (Del Mastro and Monereo, 2014).

Based on the foregoing, the objective of this study was to design and validate an instrument to measure the components of the identity dimensions of midwifery teachers and the coping strategies for critical incidents that occur in the classroom and in clinical

settings. To this end, reliability, objectivity, and validity (expert, content, and construct) were considered essential measurement requirements. The hypothesis that was proposed was that the factorial analysis would give rise to good indexes of adjustments of the structure of the instrument. Therefore, the relevance of this study lies in the interest of strengthening the conceptual base in these topics of interest and deepening measurable findings in future research through this first quantitative instrument aimed at the aforementioned discipline, but which, without a doubt, It can be adapted to other related professions.

Research method

This study was quantitative, with a descriptive analysis and cross-sectional scope. The population consisted of 390 midwifery teachers from 22 public and private universities. The final sample consisted of 231 teachers from 21 Chilean entities selected by convenience, who met the inclusion criteria: being a midwifery professional, teaching in the obstetrics and childcare career, and having a minimum year of teaching experience. For the validation of the instrument, six experts participated: three midwives, two psychologists and a pedagogue, all with a doctorate degree and with an average of 27 years of university experience. Each academic signed a commitment to participate voluntarily. Then, the participation permits were requested and received from the directors of obstetrics, who issued the databases of their teachers to issue the invitation and specify the administration of the instrument. The participants of the pilot test and the sample agreed to participate voluntarily and signed an informed consent approved by the Ethics Committee of the University of Concepción.

This investigation lasted nine months, from September 1, 2019 to June 1, 2020. In this period, the following phases were carried out according to the postulates of Creswell and Creswell (2017) and Hernández and Mendoza (2018):

1) Review of the scientific literature.
2) Identification of the domain of the variables to be measured and their indicators.
3) Elaboration version 1.0 of the instrument.
4) Validation of questionnaire content by a panel of experts.
5) Elaboration version 2.0 of the instrument.
6) Application of the instrument to a pilot test and validation.

7) Elaboration version 3.0 of the instrument.

8) Online application of the instrument to a massive sample of participants.

9) Preparation of data for statistical and factorial analysis.

10) Data analysis to measure internal and external validity and reliability.

11) Elaboration of the final version of the instrument.

The questionnaire "Professional identity of midwives/teachers and coping strategies in the face of critical incidents" consisted of four sections. Section I considered the socio-professional background of the participants related to gender, age, academic degree, years teaching, type of university for which they currently work, level of studies where they teach, and years in the profession. Section II presented a total of 26 closed questions arranged in three identity dimensions: 1) cognitive dimension, "Academic positions of the teacher and conceptions about teaching" (nine items); 2) psychomotor dimension, "Teaching and evaluation strategies" (eight items), and 3) affective dimension, "Emotions arising from the teaching exercise" (nine items). For the evaluation of the items, a Likert scale of agreement was applied, consisting of five categories: 1) Strongly disagree, 2) Disagree, 3) Neither disagree nor agree, 4) Agree and 5) Strongly agree. . According to Lloret, Ferreres, Hernández and Tomás (2017), the distribution of the indicators and the number of items per dimension for this sample allows estimating stable polychoric-tetrachoric correlations in the instrument model. Section III considered four critical incidents, two that occurred in the classrooms and two that occurred in the teaching-assistance fields. The types of unexpected events were related to the rules of conduct (cases 1 and 4), to the motivation of the students (case 2) and to the adequacy of the transmitted content (case 3). Four types of coping strategies were presented for each of them, such as: denial, evasion, transitory and innovative. Each teacher had to choose a resolution strategy for each critical incident. It should be noted that the inputs for the second and third sections came from previous studies (Altamirano et al., 2020a, 2020b, 2020c) specifically related to emerging categories obtained from 20 semi-structured interviews and four focus groups. Likewise, the Epic Final 2 instrument by Badía et al. (2011). Section IV contemplated a dichotomous closed question related to the interest in receiving a teacher training program in critical incident management in classrooms and in clinical fields.

In relation to the data analysis procedure, the experts validated the content of the instrument version 1.0 via online considering the criteria of relevance, clarity and importance, that is, they assessed the consistency, wording and essence of each item,

respectively. Each criterion was rated from 1 to 5 points according to the aforementioned Likert scale of level of agreement. After the descriptive analysis, the version 2.0 instrument was applied to a pilot test, face-to-face modality. The respective statistical adjustments were made and the application conditions were verified. Subsequently, the version 3.0 instrument was administered to the sample online; Face-to-face attendance was ruled out due to the social outbreak in the country and the global pandemic due to the 2019 coronavirus disease (covid-19). The data was stored in the Google Forms cloud until its final processing began. For the descriptive analysis and calculation of Cronbach's α reliability index, the SPSS version 22 program was used. For construct validity, an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) were applied using the comparative fit index (CFI), the Tucker Lewis index (TLI), the root mean square error of approximation (RMSEA) and the weighted root mean square residual (WRMR) as indicators of model fit (Ortiz and Fernández, 2018). The data was processed with the statistical program MPlus version 7, under a university license.

Results

The socio-professional variables indicated that 231 midwifery teachers, which is equivalent to 75% of the population, answered the instrument. There were 191 women (83%) and 40 men (17%), between 23 and 75 years of age, with a mean of 41.81 years and a standard deviation of 12.06 years. Also, 119 had a master's degree and 10 a doctorate; the rest of the professionals had a degree in Obstetrics and Child Care. In relation to the years of teaching practice, the arithmetic mean corresponded to eight years, with a standard deviation of 7.37 years. Of the total, 67% work in private universities, preferably at the undergraduate level. Regarding professional practice, the mean was 18 years with a standard deviation of 12.19 years.

According to the descriptive statistics, and taking the comments of the experts and the pilot test as a reference, it was obtained that the coefficients of variation (CV) calculated in the 26 questions of the questionnaire for the criteria of relevance, clarity and importance ranged from 0% and 28%, except for item 8 "I think that the roles of teacher, professional, specialist, researcher and manager are compatible at the university" (CV of relevance = 39%) and item 26 "The level of education that The undergraduate suits me" (CV of relevance = 56%; CV of importance = 45%), which were modified.

Next, the findings of the multivariate analysis of the identity dimensions of the interest group are described.

Exploratory factor analysis

A three-factor EFA was performed (factor 1, thinking; factor 2, doing; and factor 3, feeling about teaching) with the MPlus program using the weighted least squares (WLS) estimation method and the oblique rotation of Geomin, given the possibility that the factors could be correlated. The exploratory model with three factors presented good fit indices ($\chi^2(250) = 395.48$, $p < 0.001$, CFI = 0.944, TLI = 0.928, RMSEA = 0.050 (0.041-0.059), SRMR = 0.08). The distributions of the items by factor are found in Table 1. The results indicated that, although there were items that significantly loaded factor 3, the highest loads were in factors 1 and 2. On the other hand, item 11 "When I teach classes in massive courses, one of my teaching strategies is the expository class" he did not charge any factor. Something similar happened with item 4 "I consider that my teaching practice should be more focused on student learning than on the contents of the class", item 23 "I consider that teaching allows me greater opportunities for academic improvement in my university than research" and item 26 "I feel more motivated doing classes in the undergraduate than in the postgraduate", since, despite the fact that the loads were significant in factor 1, their values ranged less than 0.3.

Table 1. Distribution of the identity dimensions items of the midwife and the midwife teacher in Chile by factor

Dimensión	Núm. ítem	Dimensiones de la identidad profesional de la matrona y del matrón docente	Factor 1 Pensar	Factor 2 Hacer	Factor 3 Sentir
Cognitiva	I1	Considero que se requiere experiencia en el ejercicio profesional para realizar docencia en la universidad.	0.415*	0.096	0.126
	I2	Pienso que es necesario poseer preparación pedagógica para desarrollar clases en la universidad.	0.804*	0.000	-0.122
	I3	Pienso que el/la docente principiante debe recibir inducción pedagógica a cargo de la universidad antes de asumir su función educativa.	0.823*	-0.003	-0.016
	I4	Considero que mi práctica docente debe estar más centrada en el aprendizaje de las/los estudiantes que en los contenidos de la clase.	0.294*	0.001	0.227
	I5	En mis clases trato de combinar la teoría con la práctica.	-0.008	0.545*	0.242
	I6	Considero que la enseñanza debe contextualizarse en situaciones clínicas reales.	0.275*	0.183	0.261
	I7	Considero que mi rol de docente es igual de importante que mi rol de investigador/a.	0.003	0.471*	-0.146
	I8	Pienso que los roles de docente, profesional, especialista, investigador/a y gestor/a son compatibles con mi labor como académico/a.	-0.154	0.469*	-0.026
	I9	La sobrecarga horaria en docencia limita mi productividad en investigación.	0.254*	0.154	-0.066
Psicomotriz	I10	Planifico la enseñanza de mis materias antes de la clase según el tipo de asignatura, los contenidos y el número de estudiantes.	0.023	0.648*	-0.075

	I11	Cuando hago clases en cursos masivos, una de mis estrategias de enseñanza es la clase expositiva.	-0.029	0.033	-0.027
	I12	Considero que la simulación clínica es una buena estrategia de enseñanza para adquirir habilidades prácticas, previo ingreso al campo clínico.	0.269*	0.289*	0.103
	I13	Pienso que el análisis de casos clínicos guiado por la/el docente potencia el trabajo en equipo y la resolución de problemas.	0.147	0.387*	0.302*
	I14	Al finalizar el proceso de enseñanza y evaluación de mi asignatura, me parece muy relevante dar a conocer los resultados de aprendizaje a mis estudiantes.	-0.091	0.601*	0.040
Psicomotriz	I15	En mis asignaturas teóricas no solo entrego los contenidos planificados, sino, además, fortalezco las habilidades de comunicación, principios éticos, trabajo en equipo y sensibilidad social, entre otros.	-0.310*	0.907*	0.014
	I16	Pienso que el examen clínico objetivo estructurado (ECOE) evalúa competencias de comunicación, principios éticos, trabajo en equipo y sensibilidad social, entre otros.	0.205*	0.254*	0.191
	I17	Considero que las evaluaciones del desempeño clínico deben enfocarse tanto en las habilidades y actitudes como en los conocimientos.	0.108	0.434*	0.212
Afectiva	I18	Ser matrón/a docente significa un desafío permanente de transmitir mis conocimientos y experiencias para formar profesionales integrales en el área de la salud.	-0.028	0.483*	0.327*

I19	Ser matrón/a docente implica una actualización constante de saberes, no solo en el área de especialidad.	.252*	.713*	-.008
I20	Me siento un agente de cambio responsable de enseñar nuestro rol profesional a las nuevas generaciones de matronas/es.	0.071	0.750*	-0.058
I21	Mi decisión de ser matrón/a docente proviene principalmente de la vocación de enseñar.	0.049	0.612*	-0.583*
I22	Ingresé a la vida universitaria para contribuir en el proceso formativo de las/os futuras/os matronas/es.	-0.018	0.678*	-0.659*
I23	Considero que la docencia me permite mayores oportunidades de perfeccionamiento académico en mi universidad que la investigación.	0.306*	-0.045	0.016
I24	En mis clases, talleres y supervisiones prácticas me siento motivada/o cuando logro la atención y participación de mis estudiantes.	0.194	0.375*	0.057
I25	Antes de una clase, taller o supervisión práctica, me preocupo por actualizar los contenidos.	-0.111	0.709*	-0.028
I26	Me siento más motivada haciendo clases en el pregrado que en el postgrado	0.223*	-0.068	0.067

Note: *p < 0.05; reliability calculation with correlations between factors
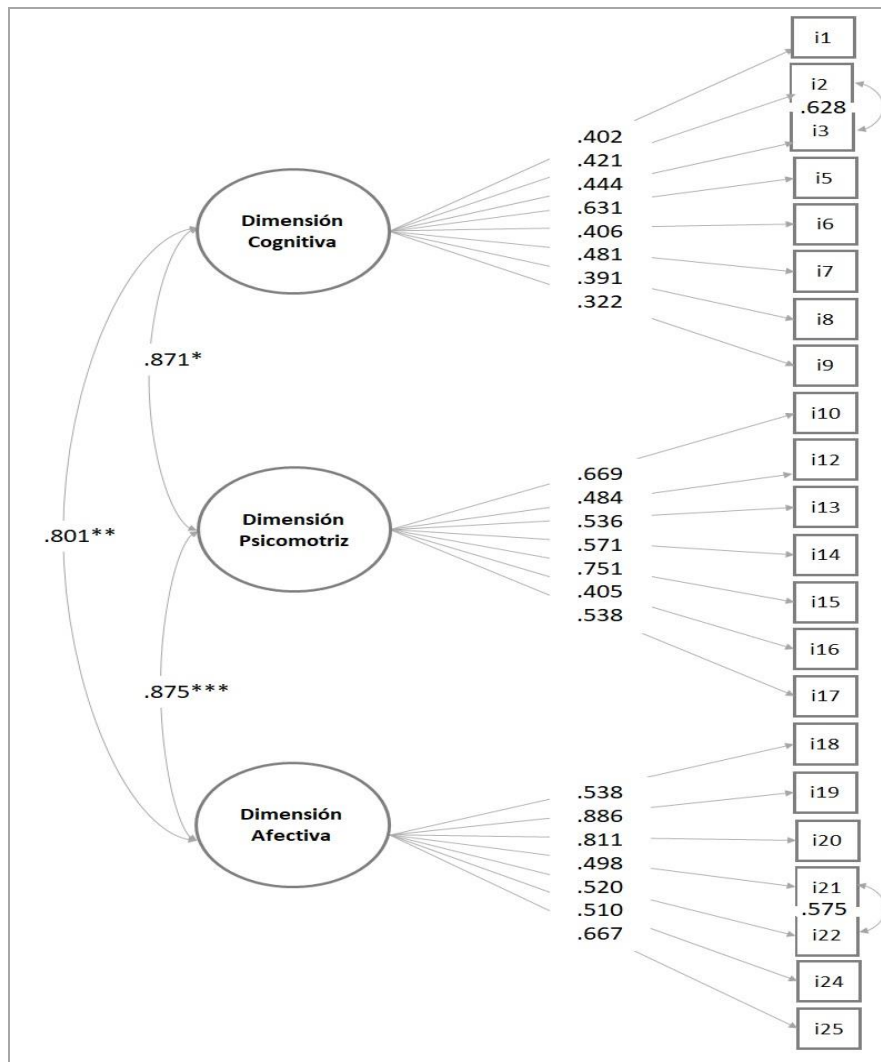
Source: self made

Confirmatory factor analysis

As a second procedure, a CFA was carried out with the structure initially proposed, which considered the distribution of 26 items in three dimensions: item 1 to item 9 (cognitive), item 10 to item 17 (psychomotor) and item 18 to item 26 (affective). The model structure presented an unsatisfactory fit ($\chi^2(296) = 653.22$, $p < 0.001$, CFI = 0.863,

TLI = 0.859, RMSEA = 0.072 (0.065-.08), WRMR = 1.129). When reviewing the structure, it was observed that item 11 and item 26 did not significantly load factor 2 and factor 3, respectively, and that, in addition, the factor loadings of item 4 and item 23 were less than 0.3. These findings are consistent with the results obtained in the AFE. Therefore, a new model of 22 items and three factors was constructed without considering the problematic items. Subsequently, it was specified through the correlation of errors in a) items 2 and 3 and b) items 21 and 22 associated with constructs of academic training and motivation, correspondingly. This model presented good fit indices ($\chi^2(204) = 369.46$, $p < 0.001$, CFI = 0.934, TLI = 0.925, RMSEA = 0.059 (0.050-0.069), WRMR = 0.964). The factor loads of each item can be seen in figure 1. Consequently, the proposed structure of eight items in the cognitive dimension, seven items in the psychomotor dimension and seven items in the affective dimension was confirmed. The first dimension considered the components "Conceptions about teaching and academic positions" (items 1, 2, 3, 4, 5, 6, 7, 8); the second dimension included "Pedagogical and evaluation strategies" (items 9, 10, 11, 12, 13, 14, 15), and the third dimension included "Emotions that arise from teaching" (ítems 16, 17, 18, 19, 20, 21, 22).

Figure 1. Confirmatory factorial analysis model of the dimensions of the professional identity of the Midwife teacher in Chile

Notes: the factor loads of each item of the instrument range between 0 and 1 according to the dimensions of the teacher's professional identity ($p < 0.05$). *Positive correlation between thinking and doing; **positive correlation between thinking and feeling; ***positive correlation between doing and feeling that emerges in teaching.

Source: self made

Instrument Reliability Index

To measure the reliability of the online questionnaire, Cronbach's α index was calculated using the SPSS program in the three identity representations. The values were 0.62, 0.65 and 0.69 for the cognitive, psychomotor and affective dimensions, respectively. According to Lucero and Meza (2002), the minimum acceptable value of the reliability coefficient depends on the use of the instrument in the discipline.

Descriptive statistics: section III of the questionnaire

Of the 16 indicators corresponding to coping strategies for critical incidents in midwifery teaching subjected to evaluation by experts, pilot test and sample, the four cases with their respective coping strategies were maintained (table 2, 3, 4 and 5). The scores for the criteria of relevance, clarity and importance yielded a mean between 4.8 and 5.0, with a coefficient of variation between 8% and 0%, in the respective order. The observations raised by those involved were favorable both for the type of section and for the relevance of the theme.

Table 2. Critical incident 1 related to standards of conduct in the clinical field

En una supervisión práctica en el pabellón, te vistes quirúrgicamente junto a tu estudiante, quien debe asumir el rol de arsenalero/a. En el momento de la operación, el/la estudiante se equivoca en entregarle al médico una pinza quirúrgica, lo que causa el enojo del cirujano llamándole la atención en forma agresiva. El/la estudiante se pone a llorar y se retira abruptamente del quirófano. ¿Cómo afrontarías esta situación?	
Estrategia negación	*1)* No dices nada y asumes el arsenaleo.
Estrategia evasión	*2)* Discutes con el cirujano haciéndole notar la forma de cómo se dirige a tu estudiante, y te retiras del quirófano.
Estrategia reflexiva transitoria	*3)* Solicitas a la arsenalera que asuma su rol en la intervención, sales del quirófano y conversas con el/la estudiante.
Estrategia reflexiva innovadora	*4)* Asumes el arsenaleo y al final de la operación conversas con el cirujano. Luego conversas con el/la estudiante, le haces ver la importancia de su rol profesional y refuerzas los contenidos para la jornada siguiente.

Table 3. Critical incident 2 related to motivation in the classroom

Hoy llegas a la sala, saludas a los/las estudiantes, les presentas los resultados de aprendizaje esperados de la clase, y comienzas a realizar al azar las preguntas sobre el caso clínico enviado hace tres semanas atrás. Las respuestas van saliendo con dificultad hasta que llega un momento en que nadie contesta. Miras el reloj, faltan 40 minutos para terminar la clase. ¿Cómo afrontarías esta situación?	
Estrategia reflexiva transitoria	*1)* Conversas con el grupo, y les haces ver sus responsabilidades y la importancia de participar en la clase.
Estrategia reflexiva innovadora	*2)* Analizas la situación con tus estudiantes, les consultas qué otra metodología les gustaría aplicar, y consensuas con ellos/as para ponerlos en práctica en la clase siguiente.
Estrategia negación	*3)* Completas las dos horas de clases sin hacer ningún comentario al grupo.
Estrategia evasión	*4)* Te diriges al grupo diciéndoles: "Jóvenes, como nadie me responde, este tema lo evaluaré en la prueba sumativa". Guardas tus cosas y te retiras de la sala.

Table 4. Critical incident 3 regarding the clarity and suitability of the contents in the classroom

	Elaboras una presentación en PowerPoint recargada de escritura porque querías que tus estudiantes aprendieran más contenidos de los que estaban estipulados en la asignatura. Haces la clase a tercer año, los estudiantes plantean algunas consultas y te retiras de la sala. Una hora después, la/el jefa/e de carrera te informa que el delegado de nivel le dio a conocer el descontento del curso por considerar que tus clases son monótonas, los contenidos son muy extensos y los/las estudiantes se desorientan al estudiar. ¿Cómo afrontarías esta situación?
Estrategia reflexiva innovadora	*1)* Le agradeces a tu colega los comentarios, hablas con el curso para ordenar las vías de comunicación, y haces una redistribución de los contenidos de las clases sucesivas con integración de análisis de casos clínicos.
Estrategia reflexiva transitoria	*2)* Luego de escuchar a tu colega, hablas con el curso para que en lo sucesivo te expongan sus inquietudes personalmente, y en las clases posteriores incorporas menos contenidos.
Estrategia evasión	*3)* Escuchas los comentarios de tu colega, y en tus clases siguientes mantienes la metodología y la selección de contenidos.
Estrategia negación	*4)* Le respondes a tu colega que seguirás profundizando los contenidos porque los estudiantes deben ir bien preparados a sus prácticas profesionales.

Source: self made

Table 5. Critical incident 4 related to standards of conduct in the clinical field

	En tu calidad de coordinadora de práctica y previo aviso a la jefatura de carrera, autorizas a un/a estudiante de cuarto año suspender su experiencia clínica por tener que viajar al sur del país, su madre había intentado suicidarse. Mantienes contacto directo con el/la estudiante y luego de unos días se reintegra a la universidad. Posteriormente, te avisa por mensajería que su madre ha fallecido. Le das las condolencias y permaneces en contacto con él/ella hasta que se reintegre a sus actividades académicas. Un día, en una práctica, tu colega te dice: "Mira el/la estudiante X, que es del sur, quiere viajar a pasar la Navidad con sus padres". Tú le respondes: "Es imposible", y en ese momento revisas la página web del registro civil, y te das cuenta que la progenitora está viva. ¿Cómo afrontarías esta situación?
Estrategia evasión	*1)* Hablas con el/la jefe/a de carrera y le solicitas que maneje la situación con el/la estudiante.
Estrategia negación	*2)* Le dices a tu colega de práctica que no autorizas al/a la estudiante a viajar a su casa.
Estrategia reflexiva innovadora	*3)* Te reúnes con el/la estudiante en conjunto con jefatura de carrera, le preguntas los argumentos para inventar un suicidio de su madre. Le comentas que antes de sancionarla, se le solicitará una evaluación mental con la psicóloga de la universidad, y se pondrán en contacto con su progenitora para levantar las redes de apoyo correspondiente.
Estrategia reflexiva transitoria	*4)* Te reúnes con el/la estudiante en conjunto con jefatura de carrera, le comentas los antecedentes recabados y le dices con rabia: "No quiero volverte a ver más en esta universidad". Le informas que solicitarás una investigación sumaria y desde hoy queda suspendida; medidas que fueron reforzadas por tu colega.

Source: self made

In addition, in section IV there were 241 teachers (93%) who stated that the query related to accessing a teacher training program in critical incident management in the classroom and in the clinical teaching-assistance fields was relevant.

Discussion

The main objective of this study was to design and validate a quantitative instrument that measured the components of the identity dimensions of midwifery teachers and the coping strategies for critical incidents that occurred in various educational contexts, taking as a reference the design by Badía et al. (2011). For the EFA study, stringent restrictions were imposed in terms of sample size, number of items per factor, and internal consistency of the factors. There were loads lower than 0.3, but before eliminating items, a CFA was carried out, through which the reduction process was completed, which gave rise to a total of 22 indicators (of the original 26), with a structure of three correlated factors that demonstrated good fit rates of the model structure (Ortiz and Fernández, 2018). This structure reveals the contribution of having an instrument that measures the construct of the professional identity of the teacher of the discipline, since it considers the corresponding dimensions of thinking, doing and feeling in teaching. On the other hand, its reliability index was acceptable for this first instrument aimed at a specific group (Lucero and Meza, 2002). However, we consider it advisable to make improvements to the item scores to optimize the internal consistency of the instrument in future research.

In relation to critical incidents and their coping strategies, the experts and participants described it as a novel section because it recounts true events that obstetrics teachers must face in classrooms and in clinical fields. In addition, it installs reflection, metacognition and problem solving, with intervention in the conceptions of teaching (Day, 2019). Likewise, it allows strengthening the performance of the teacher and promotes the renewal of the professional identity. However, every measurement instrument leads to an improvement, therefore, it is possible to add a fifth coping strategy that is described by the participant himself. With this inclusion, the spectrum of those changing cognitive and behavioral efforts that emerge from the professional to handle overwhelming situations in university settings is broadened.

The elaboration of a first questionnaire implies a complex process that involves a series of phases in order to obtain standardized responses from the indicators under study. Added to this is the challenge of reaching a high number of participants in answering an online questionnaire. However, regardless of the logistics and voluntary adherence, it is important to have instruments that allow evaluating the identity of the teacher from the

perspective of those involved and how they face overwhelming situations in training contexts.

Conclusions

In conclusion, the questionnaire "Professional identity of midwives/teachers and coping strategies for critical incidents" meets the psychometric criteria of validity and reliability. Therefore, having a first instrument that measures the identity dimensions of midwifery teaching staff and the ways of approaching critical incidents originating in educational settings is an important milestone to improve university teaching. Likewise, this type of study is unprecedented in the discipline, therefore, it marks the starting point to carry out statistical and inferential analyzes a posteriori on these topics of interest.

Future lines of research

Within the projections, it is considered, as a first phase, to apply this instrument to a larger group of professionals in the discipline who practice university teaching after adjusting the score of the items to optimize the internal consistency of the instrument. Undoubtedly, these results will allow raising the identity profile of the midwife and midwife teacher in Chile and the type of coping that she uses in the face of critical incidents in training through the quantitative paradigm. As a second phase, it is contemplated to know the identity of the obstetrics and childcare student body: to analyze the identity dimensions, as well as to identify the critical incidents and the confrontations experienced by this class in university classrooms. As a third phase, it is expected to develop a teacher training program that provides reflective tools to strengthen the self-representation of Chilean midwifery teachers. As a fourth phase, it is planned to offer a comprehensive training subject to the students of this career that contributes to their training process and future life. Therefore, the projections are many, the important thing will be to establish institutional policies oriented to these reflexive practices that improve university teaching both in the discipline and in related professions.

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