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Design and validation of a measurement instrument for gender violence in university Nursing

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Abstract

Introduction: This work is part of the UNAM-DGAPA-PAPIIT Project IN304521, ENEO No124 entitled "Educational intervention to prevent gender violence in university nursing students: design and evaluation", which was approved by the ethics and research committee of the ENEO-UNAM.

Objective: Build and validate a documentary measurement instrument for gender violence in nursing university students.

Methodology: Based on the Supo taxonomy. Design and validation of instruments type documentary measurement, of multidimensional content to measure the perception, attitudes, knowledge and gender violence in Mexican university nursing students. The content was built from a literary search on the web, the last 10 years. The content validation was through rational validity and judging of 8 gender experts. The metric properties were determined by Variances and Cronbach's Alpha from the application of a pilot test with 80 students from various nursing schools and semesters, they were selected by non-probabilistic convenience sampling. The sample was calculated with a confidence level of 0.95% and a probability of 0.05%. The collection method was remote. Informed consent was requested, including clarification of doubts, associated risks and benefits, as well as data protection. Processing in statistical software SPSS 21.

Results: The judges evaluated the content as sufficient (95.10%), clear (96.57%), pertinent (96.90%) Relevant (85.13%) and with applicability (95.93%). By general consensus the content validity was 93.93%. The construct validity was ratified with the strength of heterogeneity of the variances other than zero in all dimensions. The instrument obtained very high reliability (Cronbach .945). The conclusive instrument was constructed with 80 items distributed in four dimensions: perception, attitudes, knowledge and gender violence with 5 likert-type response options; an inventory with 5 additional questions and a section for the characterization of the sample. Approximate reasonable application time of 15 min.

Conclusions: Based on the test theory, the documentary measurement instrument has a high precision to measure the gender violence variable.

Keywords: Validation studies; Measurement instruments; Gender violence; Attitudes; Perceptions; Knowledge;

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1. Introduction

Designing and validating documentary measurement instruments is not an easy task, since they emanate from a set of studies that are developed to introduce them to the field of behavioral sciences. Each instrument is validated differently, depending on the shape, the number of dimensions, accuracy and precision of the reagents and obeying the variables to be studied. This research was based on the taxonomy and validation method of Supo (1,2).

1.1. Conceptualization of gender violence

In attention to the construct that underlies the instrument, we have that gender violence is considered a serious public health problem with a global dimension; according to the WHO, it is a deprivation of women's human rights (3). It is defined as violence that results or may result in physical, sexual or psychological harm, including threats of such acts, coercion or arbitrary deprivation of liberty, whether they occur in public or private life (4). Violence is one of the main causes of death worldwide for the population aged 15 to 44 years and its effects on health are very diverse and not all of them can be easily seen. Each year more than 1.6 million people lose their lives and many more suffer non-fatal injuries as a result of violence. Costs are expressed in billions of dollars spent each year on healthcare, but it is impossible to calculate the human cost in grief and pain. Currently, technology allows violence to be objective in the eyes of the whole world, but in an underestimated way since many more cases actually occur, such as the one that occurs in the homes, in the workplace, educational centers or even in health institutions. In addition, many of the victims are forced to remain silent and not raise their voices, perhaps out of shame, because of taboos, fear, and prejudice or because of social pressure. Violence can be self-inflicted, that is, it creates suicidal behavior and self-harm; interpersonal violence includes family or couple, in which kinship is kept and occurs within the home and community violence, does not keep any kinship and usually occurs outside the home. The latter covers youth violence, random acts of violence, rape, and violence in establishments such as workplaces and schools (5).

The International Plan estimates that 246 million children and young people could be victims of violence in and around their schools. This phenomenon disproportionately affects girls, as well as those who allegedly do not conform to prevailing sexual and gender norms (6). The results of a review indicate that workplace violence is an existing phenomenon in health professionals and 80% of nursing personnel and including students have been victims of violence at some time (7).

Youth violence (10-29 years old) is the most visible form in society around the world. Adolescents and young adults including nursing students, individuals enrolled in a nursing school or in a formal education program that culminates in the award of a nursing degree (4), who are often the main victims and perpetrators of such violence and the homicides and non-fatal assaults that involve them are increasing enormously every day. For every juvenile homicide there are about 20 to 40 non-fatal victims who receive treatment in hospitals. In addition, youth often have other added problems, such as truancy, school dropouts, and substance abuse. Young people also frequently practice risky behaviors, such as participation in fights, intimidation, carrying weapons, mainly firearms and sharps (5).

Studies carried out in Peruvian nursing students revealed that there is a minimum degree of beliefs of inferiority of women compared to men, sexist beliefs and blaming women victims for allowing gender violence. Regarding the attitude of nursing students about gender violence, only 1.9% of students have a favorable attitude about gender violence, 3.8% have a neutral attitude and 94.3% have an unfavorable attitude (8). Other Spanish and Colombian studies have identified that nursing students are influenced by sexist beliefs and adopt fatalistic attitudes when it comes to justifying gender violence, tolerant ways that become risk factors for its occurrence (9). Students from Spain perceive the abuser as a patient with psychological problems, justifying tolerance and limiting actions (10). These Perception results are specified as a process, by which the nature and meaning of a sensory stimulus is recognized and interpreted, as occurs in gender violence (4).

1.2. Dimensions of gender violence

The typology of gender violence involves the following dimensions (11).

Psychological. "It is any act or omission that damages psychological stability, which may consist of: negligence, abandonment, repeated neglect, zealotry, insults, humiliation, devaluation, marginalization, lack of love, indifference, infidelity, destructive comparisons, rejection, restriction of self-determination and threats, which lead the victim to depression, isolation, devaluation of their self-esteem and even suicide".

Physical. "It is any act that inflicts non-accidental damage, using physical force or some type of weapon or object that may or may not cause injuries, whether internal, external, or both."

Economical “It is any action or omission of the aggressor that affects the economic survival of the victim. It manifests itself through limitations aimed at controlling the income of their economic perceptions, as well as the perception of a lower salary for equal work, within the same work center”.

Sexual. “It is any act that degrades or damages the body and / or sexuality of the Victim and therefore threatens her freedom, dignity and physical integrity. It is an expression of abuse of power that implies male supremacy over women, by denigrating her and conceiving her as an object”.

Environmental. Any form of violent diligence within the school setting that involves a toxic environment. This last dimension for the purposes of this study, the concept was operationalized by the authors, because in the literature no definition was found as such ad hoc to the school context.

Regarding the knowledge of nursing schoolchildren, that is, the body of truths, facts, information accumulated over time, its volume and nature (4) regarding gender violence, research studies reveal that 16 focus groups with 112 students nursing staff, stated that they are not familiar with the characteristics of the abuse, the guidelines, the protocols, the screening questions, or the demand patterns for a specific intervention. Likewise, they cannot identify their own professional role, be it delegated or specialized (9). Scientific bibliography indicates that nursing students present a lack of knowledge on how to act in the face of violence (12).

The attitude is specified as an acquired and lasting predisposition to behave in a consistent way in relation to a certain class of objects, or a persistent mental and / or neural state of readiness to react to a certain class of objects, not as they really are but how they are conceived (4). From psychology, the attitude has 3 components: the cognitive one composed of perceptions, ideas, beliefs and opinions that an individual has about the object, real and objective or false and subjective. The emotional component refers to the feelings that the person experiences in relation to the object with positive or negative effects. The behavioral component refers to the predisposition to carry out an action consistent with the cognitive and emotional components (13).

Among the factors associated with violence with interpersonal relationships that induce and contribute to violent behavior, are friends and colleagues (5). Scientific literature has documented that the majority of perpetrators of gender violence are men. 74% of nursing students suffer sexual harassment, very frequent in the first semesters. In the clinical area, doctors are the main source of harassment for nurses and students; patients and orderlies were also considered typical culprits. Nursing students themselves, nurses and teachers were other sources of harassment and violence. The most frequently reported events were: abuse of authority, teasing, obscene compliments or gestures, psychological aggression, verbal aggression and discrimination based on physical appearance. 67.7% of the students reported a history of at least one event of discrimination or violence during their university life (14, 15, 16, and 17).

Attitudes are only the indicator of behavior, but not the behavior itself. For this reason, attitudes measurements should be interpreted as if they were "symptoms" and not as "facts"(18). The mediating and relational nature of attitudes does not allow us to directly observe and measure them. The opinions of a person towards an object can be a good indicator to measure attitudes using scales (19). Scales are measuring instruments made with a series of phrases, propositions or ideas, carefully selected in such a way that they constitute a valid, reliable and precise criterion to measure social phenomena such as case of gender violence (17). In such a way that, if the behavior towards gender violence in nursing students were unfavorable, that would mean that the person would probably not practice in any way, much less participate by cultivating or adopting expressions and Actions based on gender violence. Spanish students showed more permissive attitudes towards this form of violence (20).

The validation of documentary measurement instruments on gender violence in university nursing students has been little studied. There is little evidence from Mexican studies regarding the construction of related scales, which supports the importance of addressing this issue.

The intention of this study was to design and validate a measurement instrument in order to measure gender violence that includes perception, attitudes, knowledge and types of gender violence in university students in various educational institutions: faculties, educational centers and institutes and schools Mexican women who teach the nursing career and with the results of the process provide scientific evidence that will lead to the design of an educational intervention to prevent gender violence in schoolchildren. Likewise, knowing the perceptions, attitudes and knowledge regarding gender violence can help educational nursing institutions to plan interventions and guide prevention policies. This research is also part of the products of the PAPIIT IN Project 304521-UNAM-DGAPA, ENEO No. 124.

Objective

Build and validate a documentary measurement instrument for gender violence in nursing university students.

2. Material and methods

Design, Validation of instruments of type of documentary measurement of multidimensional content to measure gender violence: perception, attitudes, knowledge and types of gender violence in Mexican university nursing students. The design and validation of the instrument was carried out in 2 phases, a) the qualitative one for the design and elaboration of the content of the items and b) the quantitative one for the evaluation of the metric properties.

2.1. Qualitative phase

2.1.1. Design of the Instrument and formulation of the items

For the development of the qualitative phase, the variables were operationalized and the content was built from a scientific literary search on the web in the last 10 years, with instruments designed in relation to the subject, whose validity and reliability were evidenced in university students. . For the formulation of the items, the most relevant prepositions (16, 21, 22, 23, 24, 25, 26, 27, 28, 29,30) were selected. The research group was given the task of selecting, grouping dimensions, reconstructing, writing, integrating the semantics, syntax and form of presentation, as well as adapting the items to the context of the study of nursing students, in order to avoid ambiguities and determine the number of items.

2.1.2. The validity of content

The validity of the content was certified with 8 gender expert judges who supported to evaluate the proposals made and gave validity and reliability to the content of the instrument to be used. The items were evaluated through 5 indicators: 1) Sufficiency, to specify if the item is concise, exact and direct, 2) Relevance, to verify that the idea corresponds to the theoretical concept formulated, 3) Relevance, to know if the Item is appropriate to represent the specific component or dimension of the construct, 4) Clarity, to confirm the understanding of the item and 5) Applicability opinion, to corroborate whether or not it is applicable. In addition, each expert had the opportunity to make additional observations. The research group then pondered and the decision was made to reconstruct some of the questions. Rational validity was also used, through accepted and consensual endorsed concepts in the state of the art.

Next, the evaluation of the instrument's metric properties was carried out, summarized in: internal validity, construct validity and reliability analysis.

2.2. Quantitative Phase

Internal validity. The internal validity was examined through a Pilot Test, for this, the researchers met to systematize the form and method of application of the pilot test, in which the particular characteristics were considered and the level of education, the strategy for locate and contact participants.

Convenience non-probability sampling technique was used. To calculate the required sample, a calculator was used for the sample size in the pilot study, using a confidence level of 0.95% and a probability of 0.05%. Based on the results, a minimum sample of at least 59 participants (31, 32, 33) was agreed, which were distributed among the seven collaborating educational centers. Each participant was contacted through attendance lists and registration number and they were selected based on the following criteria: students with a Bachelor's Degree in Nursing, enrolled in a University, Educational Center, Institute or School of Nursing other than the participating headquarters, enrolled from the 5th to the 10th semester or are Social Service Interns.

The collection method. The information was collected remotely through an intelligent form created in google forms shared with the participants through an email address (email), a link from the WhatsApp application or a website (web page). Previously, each participant was asked for informed consent through a free and voluntary invitation. He was offered the clarification of doubts on any aspect related to the investigation by means of the e-mail of the person in charge of the project. Likewise, it was reported that the results obtained would be part of the products of the UNAM-DGAPA-PAPIIT Project IN304521, ENEO No124 entitled "Educational intervention to prevent gender violence in nursing university students: design and evaluation", which was approved by the ethics and research committee of ENEO-UNAM.

Likewise, the collaborator was observed about the possibility of associated risks of a moral, emotional, or psychological nature when answering any of the questions or when remembering any of the acts experienced in the past. They were also guaranteed respect for human rights regarding confidentiality, anonymity and protection of data that would be used only for investigative purposes. In the same way, it was announced about the social and scientific benefits that they would receive by participating. They were clarified of the option to refuse to participate or even suspend their participation at any time if desired, despite having started the form, a situation that would not have any repercussions (34).

The application of the instrument served to evaluate the content of the designed instrument, identify clarity and the most appropriate types of questions, understanding of the statement, adequate extension of the questions, existence of psychological resistance or rejection of some questions, the logic of the internal order and time of application. The data were captured, processed and analyzed using the SPSS-21 Software.

Construct validity. Once the content evaluation was carried out, the construct validity was checked by means of the Variances of the responses and Spearman Correlation Coefficients, which served to ensure the unifying concept that integrates the criteria used in the content validity and to support what that should be evaluated, remove what was not relevant and add the appropriate.

Reliability analysis. It was determined with Cronbach's Alpha. With this, it was possible to measure the discriminant capacity, analyze the variability of the items and verify the viability of the instrument. Both for construct analysis and reliability, the instrument was evaluated in a general way and by dimension.

3. Results

The present study tested the metric characteristics of an instrument to measure gender violence validated in a qualitative-quantitative way from the judging of experts, Mexican university nursing students, and statistical analysis.

The researchers verified the utility, clarity and applicability of the measurement instrument, with a reasonable application time (15 min). An instrument was obtained with 82 questions with mixed responses, distributed in four dimensions: Perceptions, attitudes, knowledge and types of gender violence; an inventory with 5 questions and a section for the characterization of the sample.

3.1. Characterization of the sample

It should be noted that, for the validation of the instrument, schools, faculties, institutes and nursing educational centers participated: ENEO, FESI, FESZ, UADY, INCIH, IMSS, UVA, ESEO-IPN, UAM-X, CERT, ICEL, UAEMEX, CONALEP and EESS. It was quantified by prevalences, the number of total participants who answered the instrument was 80 students between 17 and 21 years old, of which 57.5% (46) were women and 37.8% (34) men, 80.0% (64) were heterosexual, 2.7% (2) homosexual, 16.2% (13) bisexual and 1.1% (1) pansexual. Regarding the educational level of the bachelor's degree, 43.75% (35) were from the first semester, 2.5% (2) third semester, 5% (4) fourth semester, 6.25% (5) fifth semester, 10% (8) sixth semester, 21.25% (17) seventh semester, 3.75% (3) eighth, and 7.5% (6) of the tenth semester. Regarding their current situation, 61.25% (49) did not have a partner.

3.2. Content validity

The judges evaluated the content as sufficient (95.10%), clear (96.57%), pertinent (96.90%), relevant (85.13%) and with applicability (95.93%). By general consensus the content validity was 93.93%. Table No.1.

Table 1 Content Evaluation by Expert Judges

Judges	Dimension 1. Perception of gender violence					Dimension 2. Types of gender violence					Dimension 3. Attitudes of Gender Violence					Dimension 4. Knowledge of gender violence				
	83.83					94.68					99.68					97.50				
	Sufficient	Pertinence	Relevance	Clarity	Applicability	Sufficient	Pertinence	Relevance	Clarity	Applicability	Sufficient	Pertinence	Relevance	Clarity	Applicability	Sufficient	Pertinence	Relevance	Clarity	Applicability
1	11	12	12	8	12	36	36	36	36	36	8	8	8	8	8	10	10	10	10	10
2	13	14	14	15	14	17	17	17	17	17	8	8	8	8	8	10	10	10	10	10
3	13	14	14	14	14	47	47	47	47	47	8	8	8	8	8	10	10	10	10	10
4	9	9	9	9	9	47	47	47	47	47	8	8	8	8	8	10	10	10	10	10
5	13	14	14	13	14	47	47	47	47	47	8	8	8	8	8	10	10	10	10	10
6	15	15	15	7	14	47	45	47	24	24	8	8	8	8	8	10	10	10	6	9
7	15	15	15	7	14	47	46	47	24	24	8	8	8	8	8	10	10	10	6	9
8	11	15	15	8	15	47	47	50	46	50	8	8	8	7	8	10	10	10	10	10
TOTAL S	100	108	108	81	106	365	362	367	318	368	64	64	64	63	64	80	80	80	72	78
%	83.3	90	90	67.5	88.3	97.0	96.2	97.6	84.5	97.8	100	100	100	98.4	100	100	100	100	90	97.5
% TOTAL CONSENSUS										93.93										
% TOTAL / INDICATOR																				
Sufficiency										95.10										
Pertinence										96.57										
Relevance										96.90										
Clarity										85.13										
Applicability										95.93										

Source: Data obtained from the application of the instrument for expert judgment, August 2021. A high rating is observed for the 4 dimensions and each of the indicators that the expert judges gave to the items according to their criteria

3.3. Construct validity

Based on the Supo taxonomy, the construct validity was ratified with the strength of heterogeneity of the variances other than zero in all dimensions, complying with the theory of the test in this phase. In the first dimension, items 1, 6, 10 and 11 for their internal behavior were maintained. It was not necessary to eliminate them despite the fact that they had a very homogeneous variance, given that, when integrating a Likert-type scale that measures perception of gender violence, when calculating the general reliability, it was very high. Table 2, 3, 4 and 5.

Table 2 Dimension 1. Perception of gender violence

No.	Items	Variance
1	When you have a partner, you have to put up with mistreatment	0.040
2	Most unsuccessful people are abusers	1.876
3	Women are not the same as men	2.987
4	Women are no more exposed to being sexually abused than men	1.563
5	Seductive women or women who dress provocatively, seek to be raped	0.087
6	A true man should always responded aggressively when provoked by another	0.076
7	There are situations in which the male student has no choice but to his female partner	0.102
8	Slaps are sometimes necessary	0.096
9	Violence is not being pushed or yelled at	0.901
10	Whoever loves you can hit you, yell at you, threaten you and force you to do something you don't want	0.046
11	Gay couples should be prohibited from adopting	0.035
12	The one who must command among colleagues is the man	1.234
13	When women win rights, they are taking rights away from men	0.237
14	In no way would I have a homosexual friend	0.323
15	Abusers are generally gay people	0.120

Source: Data obtained from the application of the Documentary, Measurement instrument for gender violence September 2021. In the perception dimension, homogeneous variances are observed in items 1, 6, 10 and 11.

Table 3 Dimension 2. Types of gender violence

No.	Items	Variance
1	They have told rumors about me and offensive comments to me	0.987
2	They have told others are not my friends	1.007
3	I have been ignored or treated whit indifference	1.034
4	I have been forbidden to take or go out with other people	0.781
5	They have embarrassed me or ridiculed me	0.501
6	They have made fun of me giving me nicknames, knowing that it makes me feel bad	0.450
7	They have threatened or intimidated me or someone close to me	0.390
8	I ve been blamed when things go wrong	1.498
9	I have been discriminated against or embarrassed because of my economic situation	1.155
10	I have been destructively compared to another person or other schools	1.234
11	I have heard that they consume toxic substances (alcohol, drugs)	1.490
12	I have observed that they share drugs with each other	2.114
13	I have observed that they introduce objects that can cause damage (knife, gun)	1.113
14	I have been punished or I have seen how someone else is punished unfairly	1.234
15	I have heard or observed fights between groups: peers or teachers	1.500

16	I have observed fights with objects that cause damage	0.617
17	I have observed that they consume intoxicating drinks	1.590
18	has seduced me or I have observed that it seduces others	1.476
19	I have been influenced to act negatively	1.340
20	I have been thrown an object that could cause me harm	0.181
21	They have given me more work than what corresponds to do	1.050
22	I have been forced to see pornographic images or videos, inciting me despite	0.410
23	without my consent I touch my genitals or any other part of my body	0.310
24	I have been forced to engage in forced sexual activities	0.099
25	I have observed her performing activities of a sexual nature, kissing, caressing	0.058
26	I have been forced to have sex without a condom	0.107
27	I have observed or have been intimidated with compliments, phrases, insults or conduct of	1.156
28	I have heard or been offered a school incentive or benefit (qualification)	0.798
29	I have experienced or observed a situation of attempted rape or rape	0.657
30	They have shown me their private parts or they have groped themselves in front of me, without	1.156
31	During the coexistence with others, I have found behaviors that made me	0.178
32	You have been spied on in the dressing room, bathroom or during your intimate needs	0.678
33	You have been recorded and displayed inappropriately on social networks, without your	0.043
34	Have your breasts, legs, waist, buttocks or any part of your body touched without your	0.489
35	I have been seduced or I have heard how they seduce other people	1.667
36	Been slapped, hit, kicked, pinched, or had your arm pulled	0.616
37	I have had an object thrown at me and been injured or I have watched you do this	0.545
38	I have observed that a stronger person attacks another weaker	1.156
39	I have observed fights between colleagues from which they get hurt	0.906
40	I have been attacked or assaulted with a stick, knife or weapon	0.189
41	I have heard or seen school property stolen	1.705
42	I have seen or heard that someone else has been harmed on purpose	1.598
43	I was robbed	1.509
44	I have been intentionally damaged something	0.706
45	Prevents me from investing my money in my studies or things that I like	0.478
46	Use my money without my consent	0.390
47	They have intentionally removed and misappropriated my property	1.123

Source: Data obtained from the application of the document; Measurement instrument for Gender Violence. Heterogeneous variance observed in most items

Table 4 Dimension 3. Attitudes of Gender Violence

No.	Items	Variance
1	I have denounced the violence	0.950
2	I was punished for mistreating or violating someone in any way	0.029
3	I have received help because of gender violence	0.590
4	I have observed that someone receives help because of gender violence	0.780
5	I have denounced the violence and if the person who exercises it is punished	0.515
6	A true man should always responded aggressively when provoked by another	0.580
7	If I report gender based violence, the resolution could be a warning	1.490
8	If I report violence, nothing happens	1.611

Source: Data obtained from the application of the document; Measurement instrument for Gender Violence. In dimensions there, mostly heterogeneous variances are observed.

Table 5 Dimension 4. Knowledge of gender violence

No.	Items	Variance
1	Violence is manifestation of inequality, subordination	0.917
2	Gender violence is classified as physical, psychological and social	0.798
3	Gender violence is associated with lower social classes	1.700
4	Gender violence is a public health problem	0.908
5	Violence in my school or nursing faculty	0.721
6	Gender violence constitutes a violation of human rights	0.654
7	To prevent gender violence is necessary to promote and inculcate education	0.589
8	Symbolic violence that is invisible, buried and implicit, is one of the	0.789
9	The explosion or assault is the first sign of abuse	0.560
10	What is not named does no exist it is an expression used to identify the	0.698

Source: Data obtained from the application of the document; Measurement instrument for Gender Violence. It is observed that all the variances are heterogeneous

3.4. Reliability

In general, the instrument obtained very high reliability with Cronbach's Alpha. The reliability strength per dimension was moderate, high and very high, therefore, the precision with which the objectives were measured was a minimum of 54.8% and a maximum of 94%. According to the overall very high confidence result, it was not necessary to discriminate any questions. Table 6.

For the cut-off point, we proceeded to dichotomize, that is, of the entire final value of the test, the median (362) was taken as the cut-off point and from this data the total score of the test was divided to indicate that a lower score obtained 362 was considered as gender violence and vice versa, that is, a score higher than 362 was explained without gender violence.

With all these results and by consensus of the group of researchers, the final scores were arbitrarily assigned to the five response alternatives and the cut-off points of the scales.

Table 6 Reliability Statistics

Dimension	Number of items	Alfa de Cronbach	Precision force
Perception of gender violence.	15	0.548	Moderate
Types de Violencia	47	0.983	Very high
Attitudes of Gender Violence	8	0.769	High
Knowledge of gender violence	10	0.798	High
General	80	0.945	Very high

Source: Data obtained from the application of the Documentary Measurement instrument for gender violence September 2021. The results of Cronbach's Alpha are observed in general and by dimension.

4. Discussion

The instrument complies with 2 fundamental elements of validation: validity and reliability, therefore, it is considered that it complies with all the necessary scientific rigor. For validity, the gold standard instrument was not found, therefore, it was not possible to contrast it with the ideal (Gold standard) since a different instrument from those in the literature consulted was used. Reliability shows that the degree of congruence with which the instrument measured the variable was the ideal 0.9. According to Supo, it complies with the qualitative phase or content validation (inquire about the problem, expert judging and rational validity) that is part of internal validity. The quantitative or reliability phase is also fulfilled, which is also part of the internal validity of the instrument. For this, Cronbach's Alpha was used, a coefficient that despite its innumerable criticisms has desirable properties in relation to other indices used. It is highlighted that to obtain a more precise cut-off point than the one obtained in this research from the dichotomization of the total score of the instrument, it is necessary to evaluate with a second measurement, since in this first measurement it was only sought to meet the objective of validation.

Despite being a relatively new instrument adapted to the nursing context, it is considered viable, leaving the possibility of exploring the instrument in subsequent studies with the Mexican population and culture, using other statistics such as factor analysis in its internal phase for construct validity. And other tests such as criterion validity, that verify its properties that make it scientific.

Limitations

There were problems regarding the clarity of the questions during the content and construct analysis in the knowledge dimension, which forced the research group to reconstruct the instrument considering the results of the judges and applied statistics, so the instrument was administered three times in different samples.

5. Conclusion

Based on the test theory, the document measurement instrument has a very high precision (94.5%) to measure the gender violence variable. The conclusive instrument was constructed with 80 items distributed in four dimensions: perception, attitudes, knowledge and gender violence with 5 likert-type response options; an inventory with 5 additional questions and a section for the characterization of the sample. Approximate reasonable application time of 15 min.

Due to the scarcity of tools designed for Mexican nursing, this documentary measurement instrument for gender violence is considered transcendental.

Compliance with ethical standards

Acknowledgments

Project PAPIIT IN 304521 UNAM-DGAPA, ENEO-UNAM No. 124 "Educational intervention to prevent gender violence in university nursing students".

Disclosure of conflict of interest

The authors declare no conflict of interest.

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