

SATISFACTION OF NURSING STUDENTS WITH A CLINICAL SIMULATION PRACTICE IN HI-FI SETTINGS

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ABSTRACT

Objective: to describe the satisfaction with the practical dimension of the high fidelity clinical simulation settings developed by the nursing students.

Method: a quantitative, descriptive and correlational approach. Data collection, questionnaire to assess the nursing students' satisfaction with the simulated clinical experiences in the practice. Scale from 1 to 10, with 10 being the maximum satisfaction value and 1, the minimum satisfaction value. A total of 115 students took part. The ethical requirements were met.

Results: satisfaction with the achieved learning: fourth year, mean of 7.08; fifth year, mean of 7.05. Motivation to attend practical classes: fourth year, mean of 7.46; fifth year, mean of 7.16. Dynamism of the practical classes: fourth year, mean of 7.27; fifth year, mean of 6.66. Active participation in the developed settings: fourth year, mean of 7.41; fifth year, mean of 7.30. Interaction with their peers: fourth year, mean satisfaction greater than 8.14; fifth year, mean of 7.45. Interaction with the teachers: both classes showed a mean of 7.73. Satisfaction with the degree of difficulty of the settings: fourth year, mean of 7.25; fifth year, mean of 7.32. Productivity during the practical classes: fourth year, mean of 7.12; fifth year, mean of 6.95.

Conclusion: fourth year showed greater satisfaction with the practice, over 70%; and fifth year, a satisfaction level of approximately 60% of the options.

DESCRIPTORS: Nursing students. Clinical competence. Simulation. Personal satisfaction Teaching. Learning.

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SATISFACCIÓN DE ESTUDIANTES DE ENFERMERÍA CON PRÁCTICA DE SIMULACIÓN CLÍNICA EN ESCENARIOS DE ALTA FIDELIDAD

RESUMEN

Objetivo: describir la satisfacción con la dimensión práctica de los escenarios de simulación clínica de alta fidelidad que desarrollaron los estudiantes de enfermería.

Método: abordaje cuantitativo, descriptivo y correlacional. Recolección de datos, cuestionario de evaluación de la satisfacción de los estudiantes de enfermería con las experiencias clínicas simuladas en la práctica. Escala de 1 a 10, siendo 10 el valor máximo de satisfacción y 1 valor mínimo de satisfacción. Participaron 115 estudiantes. Se cumplió con requerimientos éticos.

Resultados: satisfacción con aprendizajes alcanzados, media de 7,08 cuarto año y quinto año, media de 7,05. Motivación para asistir a clases prácticas, media de 7,46, cuarto año y media 7,16, quinto año. Dinamismo de las clases prácticas, cuarto año, media 7,27 y quinto año, media 6,66. Participación activa en los escenarios desarrollados, cuarto año, media de 7,41 y quinto año, media 7,30. Interacción con sus compañeros, cuarto año, media de satisfacción superior a 8,14, quinto año, media 7,45. Interacción con los docentes ambos cursos presentaron una media de 7,73. Satisfacción con el grado de dificultad de los escenarios, cuarto año, media de 7,25 y quinto año, media 7,32. Productividad durante las clases prácticas cuarto año, media de 7,12 y quinto año, media 6,95.

Conclusión: cuarto año presentó mayor satisfacción para la práctica, por sobre el 70 %, y quinto año, una satisfacción por sobre el 60% de las opciones.

DESCRIPTORES: Estudiantes de enfermería. Competencia clínica. Simulación. Satisfacción personal. Enseñanza. Aprendizaje.

SATISFAÇÃO DOS ESTUDANTES DE ENFERMAGEM COM A PRÁTICA DE SIMULAÇÃO CLÍNICA EM CENÁRIOS DE ALTA FIDELIDADE

RESUMO

Objetivo: descrever a satisfação com a dimensão prática dos cenários de simulação clínica de alta fidelidade desenvolvida pelos estudantes de enfermagem.

Método: abordagem quantitativa, descritiva e correlacional. Coleta de dados, questionário de avaliação da satisfação dos estudantes de enfermagem com as experiências clínicas simuladas na prática. Escala de 1 a 10, sendo 10 o valor máximo de satisfação e 1 o valor mínimo de satisfação. Participaram 115 estudantes. Foram cumpridos os requerimentos éticos.

Resultados: satisfação com a aprendizagem alcançada: média de 7,08 no quarto ano e de 7,05 no quinto ano. Motivação para assistir às aulas práticas: média de 7,46 no quarto ano e de 7,16 no quinto ano. Dinamismo das aulas práticas: média de 7,27 no quarto ano e de 6,66 no quinto ano. Participação ativa nos cenários desenvolvidos: média de 7,41 no quarto ano e de 7,30 no quinto ano. Interação com os colegas: média superior a 8,14 no quarto ano e média de 7,45 no quinto ano. Interação com os docentes: ambas as turmas apresentaram uma média de 7,73. Satisfação com o grau de dificuldade dos cenários: média de 7,25 no quarto ano e de 7,32 no quinto ano. Produtividade durante as aulas práticas: média de 7,12 no quarto ano e de 6,95 no quinto ano.

Conclusão: Os alunos do quarto ano apresentaram maior satisfação para com a prática, com índice superior a 70 %, ao passo que os alunos do quinto apresentaram um índice de satisfação superior a 60%.

DESCRITORES: Estudiantes de enfermagem. Competência clínica. Simulação. Satisfação pessoal. Ensino. Aprendizagem.

INTRODUCTION

Today's society requires that the professionals are able to solve the problems of the professional practice and to act ethically. From this, the nursing professional must be integral, able to act in complex situations and to provide quality care which conveys safety to the patient by articulating all their previous knowledge acquired during their years of professional training at the university with an institutional educational program oriented towards innovation in a competence-based curriculum, with the students being managers of their own learning.¹

The theory of meaningful learning is the one that connects most with the clinical simulation; learning thought of in three continuous stages is observed: first, a concrete experience, primary interaction with the object under study in a concrete and experiential manner; second, reflective observation, which allows extracting ideas and thinking about them in order to create learning; and third, abstract conceptualization and active experimentation. What has been experienced in these phases is put into practice and transferred to other contexts, strengthening lasting learning over time; the students have the opportunity to solve and present their own questions, with the intention that they may reach their objectives and observe their results. The teacher is the facilitator of this learning, having to be trained in different learning strategies or methodologies.²

Simulation is defined as a learning methodology, which allows representing real experiences for the students through teacher-led experiences with essential aspects of the real world related to the health area and according to the expected learning in their training journey in real theory and practice; the settings can be predictable, standardized, safe, and reproducible in a controlled environment. In the health area, simulation has thrived on several factors that have contributed to its development such as the development of bioethics since the 1964 Declaration of Helsinki, which protects the individuals as subjects of experimentation, the patients' rights and duties, training of quality professionals in accredited higher education institutions, concern for patient safety and, parallelly, the incorporation of the ICTs into the training of the professionals and the development of technology. This is a method that evaluates psychomotor and communication skills, development of competences, and teamwork.³

The simulated practices offer the students the opportunity to analyze, reflect, evaluate content, and face situations associated with their professional work through closeness to the clinical reality they will face in the future, achieving interactive learning and feedback at the moment.⁴

Simulated settings guide learning for attaining the expected performance, contributing to the development of several competences. To achieve the expected results, the objective should be to consider the cognitive, affective, and psychomotor development areas of the student's knowledge and experience; to be adequate with the overall results of the course; to incorporate practice-based evidence; to consider comprehensive care; and that it is possible to achieve intrinsically in the time available for the simulation.⁵

When designing the simulated practices, it is important to consider appropriate settings for the learning objectives or competences to be assessed and to have assessment instruments relevant to the setting, as well as it is necessary to train the instructors who take part in the settings and in the evaluation. What is relevant is that the settings are related to the subject's curriculum. Likewise, it is beneficial for the students to have knowledge, which will motivate them to actively and dynamically take part with their peers and teacher in the development of the simulated setting.⁶

After the simulated setting, in the debriefing, a reflection is achieved and shared with a teacher who guides this process, collaborates in the meaningful and reflective learning about the experience, provides time for self-evaluation, and reinforces good experiences and collaborative work. There are two valuable results in this learning process: the first is that the information retention period is longer, and the second is that recent knowledge is incorporated into existing knowledge; the interaction of

the new learning is carried out with the notion of pre-existing knowledge in the student, assimilating values, acquiring knowledge, and developing technical skills and different ways for facing different situations. In its turn, participating in simulated practices that are similar and closer to reality allows gaining more confidence and reducing anxiety when facing real patients.²

By incorporating the Clinical Simulation into the curricula as a learning strategy, it creates and enhances meaningful learning in the students, which reaches its maximum expression when the participants of a simulated setting make it legitimate and positive, in a safe quality environment that resembles reality, as observed in a high-fidelity practice and later in the debriefing, where a reflection guided by the teacher can be held of what was experienced in the accomplished simulation.⁷

The assessment by the teacher and by the student is important. The assessment should not be only one-way, only with the teacher's outlook; the perception of the student, who is in the learning process, feeds back the teaching-learning processes.⁸

Satisfaction is connected with the motivation to learn, regarding this methodology in this generation of students who receive infinite stimuli; when motivated, the students learn more by developing meaningful learning, through a simulated case; what is learned is used for their training and later in their professional development in the working world. Clinical Simulation is a reality and is incorporated into the curriculum in the subjects that are inherent to the Nursing profession in order to contribute to the attainment of competences in the Nursing Course, which will allow them to face the working world with security, confidence and leadership, and teamwork with ethical commitment and with updated knowledge.

In 2015, the first high-fidelity simulation laboratories were held for 4th and 5th year students in Nursing at the University of Magallanes, in a simulation center with the latest technology equipment. The purpose of this research is to present the first assessment of the satisfaction level of the nursing students with the practice developed in high fidelity simulation laboratories through a validated instrument, as well as to set a milestone in the evaluation of the satisfaction level with high fidelity settings made with the clinical simulation methodology; it is of utmost importance to consider the participation and opinion of the students in their training and being part of it.

The research aimed to describe the satisfaction level with the practical dimension of the high-fidelity clinical simulation settings developed by the nursing students.

METHOD

This was a quantitative, descriptive, and correlational study. Its participants were 115 students from the University of Magallanes who are regular 4th and 5th year students in the Nursing course and who signed an informed consent agreeing to take part in the research.

A questionnaire was used to evaluate the Satisfaction of the Nursing Students with the Simulated Clinical Experiences. This questionnaire had a scale of 17 items that were presented in a table where the students had to rate their satisfaction with each of the items by writing from 1 to 10 in the ranking column assuming that 1 is the lowest value, and 10 as the highest.⁷

The method used to collect the data during 2018 was carried out by the application of an informed consent and a questionnaire by an interviewer with no contractual relationship with the course and who did not know the students. The students were invited to take part in their free time without interrupting the classes, and they were advised that the time to answer the questionnaire would be 20 minutes.

The participants were asked that the questionnaire be sealed with an adhesive seal and placed in a mailbox held by the interviewer in order to protect data confidentiality, and each questionnaire was assigned a number.

The study was authorized by the Ethics Committee of the University of Magallanes, conferring certificate No. 15/CEC/2018 on March 12th, 2018, verifying that the study meets the ethical criteria that allow for the protection of the study participants' respect and dignity. The ethical considerations of this research are based on Law No.20,120 of 2006, which refers to "Scientific research in human beings, their genome, and prohibits human cloning".

After collecting all the questionnaires, a database was created in the 2016 Statistical Package for Social Sciences 2016 (SPSS 24.0) for Windows statistical program; descriptive statistics were used for the quantitative variables, and descriptive statistical measures and deviations were used with measures of central tendency and dispersion (mean, mode, median, variance, standard deviation); therefore, there is a good fit to the sample to perform a stratified analysis for construct validity. Correlation coefficient analysis was performed for each of the items of the practical dimension. As a result, the questionnaire had a high level of reliability since its value was very close to 1.

RESULTS

They are related only to the practical dimension of the questionnaire, consisting of nine (9) items. The participants were 115 4th and 5th year students, who voluntarily took part in the study in October 2018.

Most of the participants (85.2%) were female. Their ages ranged from 21 to 40 years old, with the highest percentage in the age group from 21 to 25 years old (76.5%). In relation to their academic performance, the students' grades were grouped in the 6.1–6.5 range, where 33.9% was observed, and the highest percentage is concentrated in the 5.1–5.5 and 5.6-6.0 grade ranges, with 39.1% (Table 1).

Table 1 – Sociodemographic and academic characteristics of the study participants. Punta Arenas, Chile, 2019. (n=115)

Characteristics	n	%
Gender		
Female	98	85.2
Male	17	14.8
Year		
4 th year	71	61.7
5 th year	44	38.3
Age group		
21 – 25	88	76.5
26 – 30	19	16.5
31 – 35	6	5.2
36 – 40	2	1.7
Overall grade range in the high fidelity clinical simulation*		
4.0 - 4.5	2	1.7
4.6 - 5.0	16	13.9
5.1 - 5.5	23	20.0
5.6 - 6.0	22	19.1
6.1 - 6.5	39	33.9
6.6 – 7.0	13	11.3

*General grade range in the high fidelity clinical simulation. The grading scale in Chile being from 1.0 to 7.0, and the passing grade being 4.0.

In relation to the academic and social data, which were obtained from the student's files, the largest number of students was concentrated in the age range of 21 to 25 years old, with 76.5%; with a higher percentage (85.2%) of female students, and 14.8% of male students. Regarding the academic data, the highest percentage is concentrated in 4th year, with 61.7%. Finally, the general grade range in the high-fidelity clinical simulation was from 6.1 to 6.5, with 33.9%. The grading scale in Chile is 1.0 to 7.0, with a minimum passing grade of 4.0 (Table 1).

Table 2 shows the validity and fidelity of the items of the practical dimension in the questionnaire of satisfaction with the high-fidelity simulation: 9 items are presented. Mean, Standard Deviation, Variance and Corrected total item correlation, observing a correlation below 1 in all the items of the dimension. The table shows a mean of the items, mostly over 70%. There is a correlation between the aforementioned variables, below 1, indicating good internal consistency.

Table 3 shows that the surveyed students showed a mean response of 7.38 in 4th year and a mean of 7.12 in 5th year. Considering that 1 is the lowest value and that 10 is the highest, it can be inferred that the students were satisfied with the practical dimension, since they rated it over 70% of the available options.

Table 2 – Validity and fidelity of the items of the practical dimension of the questionnaire. Mean, Standard Deviation, Variance, and Corrected total item correlation. Punta Arenas, Chile, 2019.

Practical Dimension	Mean	Standard Deviation	Variance	Corrected total item correlation
Overall satisfaction with the practical classes	6.77	1.808	3.269	.792
Satisfaction with the learning achieved	7.07	1.637	2.679	.757
Motivation to attend the practical classes	7.35	1.991	3.966	.661
Dynamism of the practical classes	7.03	1.982	3.929	.766
Active participation in the settings developed	7.37	1.879	3.532	.707
Interaction with their peers	7.88	1.768	3.125	.626
Interaction with the teachers	7.73	1.827	3.339	.758
Satisfaction with the degree of difficulty of the settings	7.27	2.153	4.637	.758
Productivity during the practical classes	7.09	1.954	3.817	.814

Table 3 – Mean satisfaction with the practical dimension, according to the year. Punta Arenas, Chile, 2019.

Satisfaction with the Practical Dimension by year	Mean	Standard Deviation
4 th year	7.38	1.59
5 th year	7.12	1.40

Table 4 shows that the surveyed students displayed a mean response of 6.90 both in the female and male genders. Considering that 1 is the lowest value and that 10 is the highest, it can be inferred that the students were satisfied with the practical dimension according to gender, since they rated it over 60% of the available options.

Table 4 – Satisfaction with the practical dimension according to gender. Punta Arenas, Chile, 2019.

Satisfaction with the Practical Dimension by gender	n*	Mean	Standard Deviation
Female	98	6.90	1.52
Male	17	6.90	2.09

n* Number of students

Table 5 shows the students' satisfaction by year and related with each of the items of the practical dimension; it is evidenced that the students who answered the questionnaire showed a mean response of 6.71 in 4th year and in 5th year. Considering that 1 is the lowest value and that 10 is the highest, it can be inferred that the students felt greater overall satisfaction with the practical classes, since they rated it over 60% of the available options. Regarding the level of satisfaction with the learning achieved, the students showed a mean of 7.06. In Motivation to attend the practical classes, it is observed that the surveyed students presented a mean response of 7.46 in 4th year and a mean of 7.15 in 5th year. Considering that 1 is the lowest value and that 10 is the highest, it can be inferred that the students stated that they felt more satisfied with the Motivation to attend the practical classes item, rating it over 70% of the available options.

Table 5 – Average satisfaction in the practical dimension, according to the items. Punta Arenas, Chile, 2019.

Item	Year	n*	Average	Standard Deviation
Overall satisfaction with the practical classes	4 th year	71	6.93	1.885
	5 th year	44	6.5	1.664
Satisfaction with the learning achieved	4 th year	71	7.08	1.763
	5 th year	44	7.05	1.43
Motivation to attend the practical classes	4 th year	71	7.46	1.911
	5 th year	44	7.16	2.123
Dynamism of the practical classes	4 th year	71	7.23	1.978
	5 th year	44	6.66	1.952
Active participation in the settings developed	4 th year	71	7.41	1.917
	5 th year	44	7.3	1.837
Interaction with their peers	4 th year	71	8.14	1.726
	5 th year	44	7.45	1.771
Interaction with the teachers	4 th year	71	7.73	1.912
	5 th year	44	7.73	1.703
Satisfaction with the degree of difficulty of the settings	4 th year	71	7.24	2.239
	5 th year	44	7.32	2.032
Productivity during the practical classes	4 th year	71	7.17	1.852
	5 th year	44	6.95	2.124

* n= number of students per year.

In the Dynamism of the practical classes item, in 4th year it showed a mean of 7.27 over 70% of the options and, in 5th year, a mean of 6.66. Considering that 1 is the lowest value and that 10 is

the highest, it can be inferred that the 4th year students felt more satisfied with the Dynamism in the classes item than their 5th year counterparts, who rated it over 60% of the available options.

In the Active participation in the settings developed item, the mean in both years is 7.35, rating it over 70% among the available options. In the Interaction with their peers item, 4th year students show a mean satisfaction level over 8.14 with a % higher than 80% of the available options. Instead, 5th year students show a mean of 7.45, where it can be inferred that 5th year students showed less satisfaction in the Interaction with their peers item.

In the Interaction with the teachers item, both years presented a mean of 7.73; considering that 1 is the lowest value and that 10 is the highest, it can be deduced that the students felt the same level of satisfaction with the interaction with the teachers, since both years rated it over 70% of the available options.

For both years, the Satisfaction with the degree of difficulty of the settings item showed a mean of 7.05, which they rated over 70% of the available options. Finally, the Productivity during the practical classes item shows that the surveyed students showed a mean response of 7.17 in 4th year and, and of 6.95 in 5th year; considering that 1 is the lowest value and that 10 is the highest on the scale, it can be inferred that 4th and 5th year students felt greater satisfaction in the Productivity during the practical classes item, since they rated it over 70% of the available options.

DISCUSSION

In relation to sociodemographic and academic characteristics, it can be said that the largest number of students is concentrated in the age range of 21 to 25 years old, with 76.5%; with a higher percentage of female students (85.2%), and 14.8% of male students. Regarding the academic characteristics, the highest percentage is concentrated in 4th year, with 61.7%. Finally, the general grade range in the high-fidelity clinical simulation is from 6.1 to 6.5, with 33.9%; with the grading scale in Chile being from 1.0 to 7.0, and a passing grade of 4.0. It is highlighted that all the students passed the high-fidelity clinical simulation.

The objective of assessing the satisfaction of the nursing students with simulated clinical experiences, an instrument was used made up of 17 items, which are assertions and that were collectively called "Scale of satisfaction with simulated clinical experiences". In one column, the students rated the items on a Likert-type scale from one to ten, where ten was the highest level of satisfaction and one, the lowest. The items on the scale were divided into 3 factors called dimensions: in the first, the practical dimension, made up of 9 items, in this study a correlation of 0.758 of each item with the total (corrected) was found for the overall satisfaction with the practical classes; as well as of 0.659 for the learning achieved, 0.602 for the motivation to attend the practical classes, 0.581 for the dynamism of the practical classes, 0.709 for the active participation in the settings developed, 0.641 for the interaction with their peers, 0.688 for the interaction with the teachers, 0.591 for the satisfaction with the degree of difficulty of the settings, and 0.682 for productivity during the practical classes.

Good internal consistency was presented in comparison with the application of the 9 items of the instrument in students from Chile, where an adaptation of words in the assertions was made; the results of the correlation with the total (corrected) were the following: 0.792 for satisfaction (global or general) with the high-fidelity clinical simulation settings, 0.757 for the learning achieved, 0.661 for the motivation to attend the high-fidelity clinical simulation settings, 0.766 for the dynamism of the high-fidelity clinical simulation settings, 0.707 for the active participation in the settings developed, 0.626 for the interaction with their peers, 0.758 for the interaction with the teachers, 0.758 for the satisfaction with the degree of difficulty of the high-fidelity clinical simulation settings, and 0.814 for productivity during the high-fidelity settings. A high level of reliability of the assertions was presented.⁷

In a study carried out at the European University of Valencia in Nursing called “Real-scale clinical simulation in Nursing”, with 60 students from the Practicum II and III subjects, the results conclude that the experience of working with real-scale clinical simulators has been satisfactory, with 97% of the students in total agreement or agreement; and that it allows the students to achieve the proposed competences promoting self-learning. When comparing the study results, the nursing students from Chile satisfactorily rated the high-fidelity clinical simulation above 75%, confirming that the clinical simulation is a positive learning methodology and that it enables important learning.⁹

In Loja-Ecuador, a study carried out in 2014 by Imaicela Naula on the “Degree of satisfaction with the simulation and the traditional teaching practices in the acquisition of clinical competences in taking vital signs in medical students of the Technical University of Loja”, in which Likert-type surveys were applied to a universe and sample consisting of first and ninth cycle teachers and students, concludes that, in relation to the traditional methodology, 64.55% of the students are not very satisfied, 63.5% of the teachers are very satisfied and, in simulation methodology, 77.04% of satisfied students and 32.5% of very satisfied teachers. Compared to this study applied in Chile, the nursing students rated the interaction with the teachers above 70%.¹⁰

In 2017 in Mexico, a cross-sectional descriptive observational research study was carried out with the aim of knowing the satisfaction of the nursing students from the Valladolid School with the simulated practices that were developed during the 2nd year of Nursing Course. In the research, data were obtained through a validated and modified satisfaction survey for this study. The results obtained were that 91% were satisfied or very satisfied with the high-fidelity simulation and 87%, in addition to other contributions such as the need for the role of leader (46%) or the adequacy of the theoretical content (48%).¹¹

In this study carried out in Chile, the following results were obtained when applying a satisfaction questionnaire to 4th and 5th year students, with a lower percentage of satisfaction above 60% and adequacy of the themes developed in the theoretical classes to the high fidelity settings over 60% above the level of satisfaction in relation to a study conducted in Mexico.⁶

As of June 2014, the Nursing course is ascribed to the College of Health Sciences of the University of Magallanes. The curriculum was articulated and organized from the principle of the complexity that expresses the levels of provision of nursing care and that is assumed as an incremental and integrative didactic strategy. Likewise, the curriculum proposed an integration line whose purpose was to put at the service of the students a set of training experiences through the use of methodologies such as problem-based learning or case analysis in order to promote the integration of interdisciplinary knowledge and clinical simulation, also promoting the development of generic competences, in a cross-sectional manner, such as ethics, social responsibility, teamwork, leadership, and communication skills throughout their training trajectory. The students were satisfied with the practical dimension, since they rated it over 75% of the available options. It is confirmed that the clinical simulation is a positive learning strategy for the student.

Learning through clinical simulation, where the learning of simple or more complex techniques can be developed in simulated settings, has been a link between theoretical training and direct contact with the patient in a real environment. From its first applications, its design tries to promote the active participation of the student in the advancement of the learning process since it allows building knowledge, exploring hypotheses, and developing a multitude of psychomotor skills in a safe environment. The simulation is most successful when incorporated into the nursing curriculum and not when it is treated as an additional component to education. Determining which components of that plan are favored with simulation-based education leads to a more valuable use of this methodology.¹²

The study results show that the simulation is a pedagogical element in the development of professional competences when all involved understand the role of this teaching method, seek to follow the basic assumption that everyone is intelligent and ready to learn; when a psychologically safe environment is guaranteed, where all the stages of the simulation are planned with clear and possible learning objectives; and, especially, when “to train the teachers about the teaching strategy of simulation in order to promote the developing skills and clinical judgment in nursing practice.”^{13:816}

CONCLUSION

Limitations were found in this study related to the limited research referring to the satisfaction of the students participating in high-fidelity settings in Chile. In the settings with a real case taken to the simulation, the students mobilize all the achievement competences towards the graduation profile of the Nursing course. As a result of the application of the questionnaire of satisfaction with the high-fidelity clinical simulation, it is concluded that all the items of the practical dimension were evaluated and presented independently and that the overall satisfaction with the practical classes in the high fidelity clinical simulation is positively evaluated.

According to the results obtained, it is confirmed that the clinical simulation is a positive learning strategy for the nursing students of the University of Magallanes, Chile, in all the dimensions assessed.

It was important to consider the assessment of the satisfaction level with the high fidelity settings carried out with the clinical simulation methodology, the participation and opinion of the students, favored with a teaching service that contributes significantly to deepening the knowledge, the evaluation, and the practice of this teaching and learning methodology that incorporated the technologies.

Satisfaction is connected with the motivation to learn, regarding this methodology in this generation of students who receive infinite stimuli; on the other hand, when motivated, the students learn more, developing meaningful learning; what is learned is useful for their training and later for their professional development in the working world.

The clinical simulation is incorporated into the curriculum in the subjects that are inherent to the nursing profession in order to contribute to the attainment of competences in the Nursing course, which contributed to facing the working world with security, confidence and leadership, teamwork with ethical commitment and with updated knowledge.

REFERENCES

1. Organização para a Cooperação e Desenvolvimento Económico (OCDE). Educación en Chile, Evaluaciones de Políticas Nacionales de Educación [Internet]. Santiago de Chile (CL): Fundación SM, 2017 [cited 2019 Sept 18]. Available from: <https://doi.org/10.1787/1990021x>
2. Astudillo Araya Á, López Espinoza MÁ, Cádiz Medina V, Fierro Palma J, Figueroa LA, Vilches Parra N. Validación de la encuesta de calidad y satisfacción de simulación clínica en estudiantes de enfermería. *Cienc Enferm* [Internet]. 2017 [cited 2019 Sept 18];23(2):133-45. Available from: <https://doi.org/10.4067/S0717-95532017000200133>
3. Ávila R, Mahana P, Rivera C, Mc Coll P. Simulación Clínica como método de formación de competencias en estudiantes de medicina. *Rev Educ Cienc Salud* [Internet]. 2016 [cited 2019 Sept 18];13(1):11-4. Available from: <http://www2.udec.cl/ofem/recs/anteriores/vol1312016/artinv13116a.pdf>
4. Valencia Castro JL, Tapia Vallejo S, Olivares Olivares SL. La simulación clínica como estrategia para el desarrollo del pensamiento crítico en estudiantes de medicina. *Investigación Educ Médica* [Internet]. 2019 [cited 2019 Nov 07];8(29):13-22. Available from: <https://doi.org/10.1016/j.riem.2016.08.003>.

5. Oliveira SN, Massaroli A, Martini JG, Rodrigues J. From theory to practice, operating the clinical simulation in Nursing teaching. *Rev Bras Enferm* [Internet]. 2018 [cited 2019 Nov 07];71(Suppl 4): 1791-8. Available from: <https://doi.org/10.1590/0034-7167-2017-0180>
6. Rodríguez SP. Valoración de la satisfacción de los alumnos de enfermería tras las prácticas simuladas [trabajo de fin de grado]. España: Universidad de Valladolid, Facultad de Enfermería; 2017 [cited 2019 Feb 11]. Available from: <https://uvadoc.uva.es/bitstream/10324/25430/1/TFG-H956.pdf>
7. Baptista RCN, Martins JCA, Pereira MCR, Mazzo A. Students' satisfaction with simulated clinical experiences: validation of an assessment scale. *Rev Latino-Am Enfermagem* [Internet]. 2014 Oct [cited 2019 Nov 07];22(5):709-15. Available from: <https://doi.org/10.1590/0104-1169.3295.2471>
8. Parra DI, Tiga DC, Domínguez CC, Navas J. Evaluación de las competencias clínicas en estudiantes de enfermería *Rev Cuidarte* [Internet]. 2016 [cited 2019 Sept 18];7(2):1271-8. Available from: <https://doi.org/10.15649/cuidarte.v7i2.322>
9. Cabrera Coyago JG, Herrera-González NK. Satisfacción del aprendizaje en simulación clínica en enfermería de la Universidad de Cuenca [trabajo de fin de grado]. Cuenca (EC): Universidad de Cuenca, Facultad de Ciencias Médicas; 2018 [cited 2019 Feb 5]. Available from: <http://dspace.ucuenca.edu.ec/bitstream/123456789/29948/1/proyecto%20de%20investigaci%c3%b3n.pdf>
10. Cabellos García AC, Fortea García E, Marín Maicas P, Escalada Hernández P, Gea Caballero VA, Gimenez Espert C, et al. Simulación clínica a escala real en enfermería, reforzando conocimientos y generando autoconfianza. In: X Jornadas Internacionales de Innovación Universitaria [Internet]. Facultad de Ciencias de la Salud. Universidad Europea de Valencia, 2013 [cited 2019 Aug 13]. Available from: <https://abacus.universidadeuropea.es/bitstream/handle/11268/2652/0132.pdf?sequence=1&isallowed=y>
11. Rodríguez MLS, López SM. La evaluación por competencias en un centro de simulación. Primer Encuentro Internacional de Simulación. In: Simex 2017 Facultad de Medicina UNAM [Internet], 2017 [cited 2019 Mar 10]. Available from: <https://www.medigraphic.com/pdfs/facmed/un-2017/uns171j.pdf>
12. Velasco A. Simulación clínica en enfermería, creando un ambiente de simulación [trabajo de fin de grado]. Santander (ES): Universidad de Cantabria, Escuela Universitaria de Enfermería; 2013. Available from: <http://hdl.handle.net/10902/3949>
13. Quirós, SM, Vargas MAO. Clinical Simulation: a strategy that articulates teaching and research practices in nursing. *Texto Contexto Enferm* [Internet]. 2014 [cited 2019 Aug 13];23(4):815-6. Available from: <https://doi.org/10.1590/0104-07072014001200edt>

NOTES

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CONTRIBUTION OF AUTHORSHIP

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Analysis and interpretation of data: Ruiz Vera PI, Martini JG

Discussion of the results: Ruiz Vera PI, Martini JG

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There is no conflict of interest.

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