Nursing students' perceptions on the use of clinical simulation in psychiatric and mental health nursing by means of objective structured clinical examination (OSCE)

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ABSTRACT

Background: In view of the rising incidence and prevalence of mental disorders, and the stigma often attached to persons with these pathologies, the question of specific, appropriate training for nursing students is one of great importance. Objective structured clinical examination (OSCE) and clinical simulation may provide a useful means of introducing the student to this environment.
Objectives: To examine the perceptions and satisfaction of nursing students after their participation in a targeted mental health course in which the main specialist skills were acquired via clinical simulation.
Design: A quantitative, descriptive, transversal study was conducted, in which the participants in a mental health course completed a questionnaire on their satisfaction with the experience.
Participants: The study population consisted of 141 nursing students enrolled in a mental health course and currently in the third year of their Nursing Degree studies at the University of Málaga (Spain).
Results: The overall satisfaction expressed was more than 8 out of 10 (mean score = 8.43, SD = 1.25) and the students' satisfaction with specific aspects of the procedure exceeded 4 out of 5. The study results show that these nursing students considered the methodology in question to be useful preparation for clinical practice (mean score = 4.78, SD = 0.45), that they appreciated the participation of an expert (mean score = 4.72, SD = 0.60) and that receiving the opinions of their peers about their performance was an enriching part of the experience (mean score = 4.54, SD = 0.64).
Conclusions: The participants reported a high degree of satisfaction with the OSCE procedure and observed that this method should be implemented more frequently. Debriefing is viewed as a vital contribution to the learning process and to the participants' satisfaction. However, further research is needed to study the impact of stress and anxiety on the acquisition of skills via OSCEs.

1. Introduction

Clinical simulation is a valuable means of learning and evaluating skills, both technical and non-technical. In the field of nursing, this approach is increasingly used to help students acquire practical competencies (Cant and Cooper, 2017).

In recent years, the prevalence of pathologies such as anxiety and depression has increased significantly (De Montagut López-Sáez and Márquez, 2016). This trend, together with the stigma often suffered by persons with mental disorders (Rössler, 2016), motivates calls for a paradigm shift in approaches to medical education, by which future professionals can be equipped to cope with psychiatric problems (Van-dyk et al., 2018), to communicate effectively (Kunst et al., 2016), to assess the situation correctly and to provide appropriate care for patients

and their families (Roberts et al., 2009).

In addition to these concerns, clinical practices in mental health units can themselves provoke stress in nursing students, who may attach stigma to mental disorders (Demir and Ercan, 2018). Problems in this respect might be overcome by teaching practices based on clinical simulation in controlled scenarios, which allow students to make contact with professional practice in a safe environment, enabling them to properly develop the skills needed for clinical practice in this area (Cant and Cooper, 2017; Vandyk et al., 2018).

2. Background

Mental disorders are a reality. According to the Institute for Health Metrics and Evaluation in its study "Global Burden of Disease" in 2017, the amount of people living with these disorders was 792 million, taking into account that this type of disorder is not frequently reported (Ritchie and Roser, 2018). Among the most common mental disorders, the WHO reported a worldwide incidence of 322 million cases of depression and 264 million cases of anxiety (WHO, 2017), underlying a significant increase in the demand for related healthcare in recent years, together with the prescription and consumption of large quantities of psychotropic drugs such as antidepressants (De Montagut López-Sáez and Márquez, 2016) and rising numbers of suicide attempts (Cayuela et al., 2018).

Many people who experience mental health problems receive care and attention from primary care nurses (Hewlett and Moran, 2014), which highlights the need for nursing students to acquire the skills that will enable them to meet the needs of these patients and provide a comprehensive approach to patient care (Roberts et al., 2009).

Nursing staff should incorporate concerns for patients' mental health into their health care strategies, as a fundamental part of their professional duties. However, it is not uncommon to find rejection and stigmatising attitudes among nursing professionals, and fear of contact with the patient among students during their clinical practices (Samari et al., 2019).

On the other hand, the experience of contact with persons presenting mental illness may foster positive attitudes and confidence among professionals working with such patients (Stuhlmiller and Tolchard, 2019). In this respect, the use of simulation techniques for nursing students, to aid the development of skills specific to these contexts, can be a particularly effective educational method, boosting confidence and understanding in the detection and treatment of at-risk patients (Koetting and Freed, 2017). Putting these considerations into practice, clinical simulation to teach and evaluate the acquisition of clinical skills is an increasingly important element of nursing studies programmes (Setyonugroho et al., 2015; Setyonugroho et al., 2016).

Many nursing degree studies offer specific subjects in the management of mental disorders, in courses with titles such as Nursing in Mental and/or Psychiatric Health. The purpose of these courses is to teach the relevant skills and competences, as laid out in the principles of Spanish psychiatric reform of 1986 (Ley 14/1986), including sensitivity and empathy, with particular emphasis on understanding and the development of a therapeutic relationship, as well as the constant exercise of self-perception within the nurse/patient relationship (Rodrigues et al., 2019). In this context, the Nursing Department at the University of Malaga (Spain) incorporates training activities into its curricula in which clinical simulation scenarios play a fundamental role in teaching and evaluating competencies, thus ensuring the acquisition and practical application of the professional qualities required.

This type of teaching strategy can be very successful in the field of mental health, since it facilitates the provision of student training within a controlled, safe environment, and at the same time addresses problems of anxiety and stigma (Cantrell et al., 2017). An objective structured clinical examination (OSCE), which is considered to be a reliable means of evaluating students' performance of specific skills within a simulation (Lopreiato et al., 2016), appears to provide an appropriate, controlled

scenario for this purpose. In view of these considerations, our study aim is to explore the self-perceptions and satisfaction, and also the difficulties or barriers encountered, of nursing students who took part in a simulation-based mental health course in which OSCEs were used to assess the acquisition of specific competencies in mental health care and psychiatry.

3. Methods

3.1. Study design and sample selection

This quantitative, descriptive, transversal study is based on the analysis of responses to an ad-hoc questionnaire completed by nursing students from the University of Málaga (Spain), following their participation in a mental health course.

An intentional sampling approach was adopted, with a study population of students enrolled in the "Mental Health and Psychiatry Nursing" subject (n = 149) during the third year of their Nursing degree studies in the academic year 2018–2019. Students on national or international exchange programmes and/or whose first-year studies were at another university were excluded to ensure that no similar learning had previously been received.

3.2. Characteristics of the mental health course

The simulation component of this course was conducted throughout the semester, in line with the theoretical subject matter presented in the lectures. The course focused on the main mental disorders (anxiety, depression and severe mental disorders including obsessive compulsive disorder and schizophrenia among others) and their management by the nursing professional, in non-specialised settings such as primary care consultation or emergency services. Examples of some of the scenarios were handling a panic attack or making an intervention on suspicion of a suicide attempt.

Based on the existing literature (Vandyk et al., 2018; Williams et al., 2017), the course combined theoretical training with clinical simulation, placing special emphasis on communication skills and acquisition of specific mental health nursing competencies.

The practical training was conducted during four seminars, each with a duration of 2 h where firstly they were familiarised with the methodology secondly, they participated in the prepared scenarios and their subsequent debriefing. The OSCEs were conducted in simulation laboratories placing the student in a context as close as possible to reality. Resident nurses and psychiatric-mental health clinical nurse specialists collaborated, acting as patients and/or relatives in the staging of the cases. The OSCEs were designed and reviewed by the specialists in this field. In each simulation episode, the level of difficulty and content was adjusted to match the topics previously taught in class. In order to conduct an objective evaluation of these capabilities, nursing interventions (NIC), with their respective activities, were included as observation units for each case.

3.3. Procedure

The students were divided into groups of about twelve people, each of whom intervened in two different cases, as follows. While one student took part in the simulation, in the laboratory, the rest of the group witnessed the session either via a video stream from another classroom or live in the same laboratory. Each student had 5–7 min to intervene in the case. Twelve cases were chosen and randomly assigned to each student. Every day, six scenarios were played out, and each one was repeated with a different participant. Thus, on the second occasion, the student was able to observe how another classmate addressed the same situation. In the following seminar, the order of intervention was reversed for another six scenarios, to ensure that all the students were evaluated under the same conditions.

On the day assigned to the simulation, the students met in a classroom, while the coordinator sat behind a mirror/glass installed for this purpose, from where the seminar recording was controlled. The student who was to perform the simulation was named, the case details were read out over the loudspeaker and the intervention began, with the participation of the two specialists who were presenting the case, in the role of patient or family members. During the intervention, the students were allowed to consult any help or resource available, such as questionnaires or scales, which were provided during the course as supplementary material. In addition, the students could request any objective data they considered relevant.

During the simulation, the other students were instructed to take note of their classmate's intervention, considering aspects such as empathy, non-listening attitudes and the use of body language. The active participant was also asked to perform a self-assessment of his/her communication skills and critical judgment.

At the end of the seminar, the experts who had witnessed the session led a debriefing, during which the students were asked how they felt during the simulation and what aspects needed further work.

All the interventions were recorded and edited to be viewed in the final seminar. Each student was shown one of their interventions and asked whether their perception of how they had dealt with the situation had changed after seeing themselves on the screen. Also, during this final session, all students reviewed their self-assessment of the previous two seminars, received feedback from their classmates and were advised by a clinical nurse specialist in mental health on the aspects that had been addressed correctly and the areas in need of improvement.

3.4. Study variables and data collection

The study data, including the sociodemographic variables 'sex' and 'age', were obtained from a questionnaire designed for this purpose and administered online after the final seminar. To prevent students from responding more than once, only one response per user was allowed.

Items of the questionnaire were designed as by Professors involved in the subject and the members of the research team. Those items were selected and approved by consensus according to the teaching methodology used and the evidence from the literature (Grant et al., 2010; Kim and Kim, 2020; Robinson-Smith et al., 2009).

Responses to the first 14 questionnaire items on various aspects of satisfaction with the simulation were scored on a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. The last three questions were scored on a 10-point scale.

The study data were collected in June 2019.

3.5. Ethical considerations

The study was approved by the Research Commission of the Faculty of Health Sciences. Before starting the seminars, all students provided signed consent to participate and for the transfer of their image rights.

The satisfaction questionnaire was a totally voluntary activity, independent of any type of subject grading. The sole purpose of this exercise was to improve the teaching methods used in the future.

3.6. Analysis

Student's *t*-test was performed, firstly, to determine whether the gender imbalance in our sample might result in gender differences and, secondly, to detect possible differences in the students' satisfaction with the activity according to the type of intervention performed (streaming vs. live in the laboratory). Descriptive and exploratory analyses were carried out to obtain measures of central tendency and dispersion, or percentages, depending on their nature. In addition, the Kolmogorov–Smirnov test of normality was applied.

Correlation analyses were performed between the quantitative variables (Pearson or Spearman according to the normality or otherwise of the distribution) and Student's *t*-Test for independent variables.

Multivariate analysis was performed using linear regression to determine factors associated with the modification of the main outcome variable (overall satisfaction). The SPSS V.25 software package was used for all statistical analyses.

4. Results

Twelve groups (n = 149 students) performed the clinical simulated scenarios. Although none refused to participate in the study, data were missing in seven cases and incomplete responses were received from four, leaving a final study sample of 138 students (80.43% of whom were female) with a mean age of 22.42 (SD 5.05) years. The intervention was monitored by streaming for 67 students, while 71 conducted the simulation live in the laboratory, witnessed by the rest of the group (see Table 1).

No significant differences among the students by sex or age were found regarding either overall satisfaction with the activity or anxiety about performing the scenario in front of their peers (p > 0.05).

The form of presentation of the seminar (streaming vs. live) produced no significant differences between the groups (p = 0.75; CI = −0.35, 0.49).

The questions related to the students' satisfaction with the activities in general produced a mean score of over 4 out of 5 and those regarding overall satisfaction, a mean score of 8.43 (SD 1.25) out of 10 (see Table 2).

According to the students' responses, the simulation methods applied represent useful preparation for clinical practice and make a positive contribution to the learning process. The participation of an expert and assessment by their peers were also considered to be very rewarding.

In general, the students did not find the seminar evaluation procedure very complicated. Satisfaction with the activity was directly correlated with the students' self-assessment of their performance (r = 0.65; p < 0.001). Furthermore, the lower the degree of perceived anxiety during the simulated clinical scenario, the higher the overall level of satisfaction with the activity (r = −0.28; p = 0.001). The degree of difficulty encountered in the self-assessment process was directly related to the difficulty involved in performing the simulation (r = 0.42; p < 0.001).

The order in which the scenarios were presented did not make any significant difference in terms of overall satisfaction with the activity or with the difficulty of self-assessment (p > 0.05).

In the final seminar, the students who reviewed the first clinical case considered had a stronger perception of having learned from the simulation than those who reviewed the second scenario (0.18; SD 0.08; CI 0.01, 0.34; p = 0.02).

Finally, a multivariate analysis was performed, using linear regression, to determine which independent factors most strongly influenced the students' overall satisfaction with the simulation (R square 0.485) (see Table 3).

The model derived from our analyses shows that the overall satisfaction with the clinical simulation activity is determined, above all, by

Table 1
Characteristics of study participants.

Demographics N = 138	Frequency (%)
Gender	
Male	(19.57%)
Female	(80.43%)
Type of intervention	
Streaming	67 (48.55%)
Live in the laboratory	71 (51.45%)
	Mean ± SD
Age (years)	22.42 ± 5.05

Table 2
Mean scores for the questionnaire items.

Item	Mean score (SD)	p value
Performing simulated cases in seminars helped me learn.	4.72 (0.50)	0.750
I enjoyed performing the simulation.	3.69 (0.93)	0.103
I think my participation in the seminars will help me with the exam.	4.16 (0.82)	0.112
During my intervention I remembered and applied the knowledge previously acquired in class.	3.80 (0.86)	0.678
We should perform more simulated clinical cases during the degree course.	4.42 (0.81)	0.973
The seminars motivated me to study more even though some time remains until the exam	3.85 (1.10)	0.518
The debriefing seminar helped improve my professional skills.	4.38 (0.72)	0.859
Having performed these seminars will later be useful in clinical practice.	4.78 (0.45)	0.442
The participation of qualified nurses enriched the simulation experience.	4.72 (0.60)	0.877
Knowing that I was being evaluated made my intervention stressful.	3.73 (1.13)	0.134
Conducting the follow-up seminar in streaming helped me control my nerves (answer only if the seminar was carried out in streaming)[a].	3.88 (1.02)	1.0
I found it difficult to evaluate my classmates' performance.	3.12 (1.17)	0.746
It was very helpful to see my self-assessment during debriefing.	4.28 (0.76)	0.920
Listening to the opinions of my classmates during debriefing was enriching and constructive.	4.54 (0.64)	0.709
What degree of anxiety did you experience in your intervention, in front of your classmates (on a scale from 1 to 10)?	6.43 (2.23)	0.741
What degree of difficulty did you experience in the self-evaluation system during the seminars (on a scale from 1 to 10)?	5.43 (2.13)	0.671
Overall, how satisfied are you with the simulation experience (on a scale from 1 to 10)?	8.43 (1.25)	0.751

[a] Only the students who participated in the streaming sessions answered this question, so there are no comparable groups.

the students' enjoyment of the experience. The presence and participation of experts in the field also had a positive influence on the students' overall satisfaction with the activity.

5. Discussion

The aim of this study was to determine and analyse nursing students' perceptions of the use of OSCEs to develop specific practical skills in mental health care. This type of teaching methodology has traditionally been used to evaluate the performance of medical students in certain potentially-real situations (Patrício et al., 2009). However, in recent years its use has increased considerably, not only with these students, but also in other areas of health care such as nursing (Aronowitz et al., 2017), and the goals addressed now go beyond the mere evaluation of the students' performance (Patrício et al., 2009).

Nevertheless, few studies have been undertaken to consider the use of OSCEs in subjects such as nursing care for mental health and psychiatry patients, and therefore relatively little is known about students'

perceptions of this experience.

Confirming the results that have been obtained in previous research (Elbilgahy et al., 2020; Soni et al., 2017), the participants in our study reported a high degree of satisfaction with the OSCEs and the belief that this methodology should be employed more frequently, both for the clinical subject in question and in other areas.

5.1. Perceptions of the learning process

In our study, two of the most highly-scored questionnaire items concerning the simulations were that they contributed to the learning process and that this approach was useful preparation for clinical practice. The students also reported that the activity might enhance their performance in the final test. On the other hand, after performing the simulations, some students had difficulty remembering and applying the knowledge previously acquired in class and in becoming sufficiently motivated to study for the exam. The influence of studying on OSCE performances has been explored in previous research (Mavis, 2000), but to our knowledge its impact on the motivation to study for the final exams has not previously been considered.

In the present study, the students reported having enjoyed the simulation experience. This corroborates earlier investigations with nursing students, which have also reported their enthusiasm and enjoyment of simulation experiences. Moreover, simulation is believed to enhance the ability to function in clinical settings (Warren et al., 2016).

5.2. Performance-related anxiety

Regarding their participation in the simulation scenarios, the students reported that doing so in view of their classmates produced some anxiety (mean score: 6.43 out of 10). In this respect, there were no significant differences between those who were alone in the classroom while their classmates watched via streaming and those who performed the simulation in the presence of their classmates. It seems that simply knowing you are being watched is a stressor for some students, in a phenomenon that has been termed the Hawthorne Effect (McCambridge et al., 2014).

Probably related to this significant degree of nervousness, and despite their satisfaction with the dynamics, in general the students did not enjoy their intervention. Our study model shows that overall satisfaction is largely determined by enjoyment of the experience during the intervention. However, when they were asked if the sensation of being observed had made their intervention more difficult, the students scored this item with 3.73 out of 5.

On the other hand, the opportunity to observe a classmate performing the simulation could be of great benefit in the learning process and might even alleviate problems of stress and anxiety (Delisle et al., 2019).

Table 3
Factors influencing overall satisfaction with the simulation activity.

	Non-standardised coefficients	Standardised coefficients	Sig.	95.0% confidence interval for B		Collinearity statistics	
	B	Beta		Lower bound	Upper bound	Tolerance	VIF
(Constant)	3.777		0	2.347	5.206		
I enjoyed performing the simulation.	0.805	0.594	0	0.637	0.973	0.953	1.05
The participation of qualified nurses enriched the simulation experience.	0.452	0.216	0.001	0.192	0.711	0.952	1.05

5.3. Students' perceptions of the components of the simulation methodology: experts, peer review, debriefing and recording of the scenarios

Regarding the methodology itself, the students valued very positively the fact that experts in the field participated in the development of the scenarios. The participation of qualified instructors in both training and debriefing is associated with better outcomes and greater student satisfaction (Roh et al., 2016).

Debriefing is considered a key component in learning via simulated scenarios (Shinnick et al., 2011). The aim of this element is to promote the reasoning process in the student, providing the possibility for mistakes to be corrected and guaranteeing feedback, thus enriching the experience and improving learning outcomes (Lee et al., 2020). In our study, the students reported that the debriefing seminar helped improve their professional skills.

Two different forms of debriefing were used: one structured debriefing was conducted immediately after the performance, followed by another when the recorded scenes were viewed. This second component increases the quality of the debriefing, providing greater satisfaction and knowledge in comparison with verbal discussion alone, thus enhancing learning outcomes (Lee et al., 2020). In the present study, the students had the perception of learning more effectively when they reviewed the first of their simulations, possibly because with the experience acquired, they felt more confident about their current performance. Not being able to compare the two interventions could have produced a false sense of control and an underestimation of the learning outcome. This hypothesis requires further analysis in the future, in order to improve the use of structured debriefing by means of video replays.

In addition to self-observation and analysis, it is important to realise that observing other students also improves learning outcomes; indeed, this aspect may be more important than the intervention itself (Delisle et al., 2019). Although the active participant usually benefits more from the process than the mere observer, a directed observation as was performed in our study could lead to similar results, and so this should be considered a useful resource, complementing active participation (Roussin and Weinstock, 2017; Delisle et al., 2019).

In addition to the benefits obtained from the observation of videos, the students found it enriching and constructive to hear the opinions of their peers during debriefing. Previous studies have shown that satisfaction and outcomes could be mediated by the participation of a skilled instructor leading the video debriefing (Lee et al., 2020). An important point is that in our case the debriefing was structured; although the classmates participated in each case, it was the instructor who guided the process, and this fact might account for the students' satisfaction with the outcomes.

With respect to the evaluation system used, the students had no difficulty in evaluating their classmates, scoring the degree of difficulty of the evaluation at 5.43 out of 10.

One of the most interesting aspects of the simulation was the opportunity to conduct a self-assessment during the final debriefing, an option that was considered very helpful. A previous study had examined the impact made by watching a video of the simulation on the student's self-assessment and on its use in self-guiding the debriefing (Scaffidi et al., 2019), but the impact of the report itself on students' perceptions and satisfaction remains unclear.

5.4. Study strengths and limitations

This study enabled us to detect factors that may be related to nursing students' perceptions of the value of OSCEs. However, the comparison of simulation vs. traditional seminars was not possible as there was no control group. Useful results were obtained, especially the fact that the participants' satisfaction and perceptions may be modulated by certain factors, including experience.

Despite the fact that the questionnaire was answered after completing all the academic activity and the answers were anonymous, we do not know if the students could have felt subtle pressure to complete it.

The study also aimed to identify barriers to the development of clinical simulation or difficulties that might be encountered. However, for this purpose, mixed methods could be more appropriate, since the students' responses to the questionnaire items would be more informative with the inclusion of short-answer questions.

Further study is necessary to evaluate the mediating role of anxiety in these settings and to determine the levels of stress and anxiety experienced according to whether the scenario is carried out live or via streaming, using standardised tools. This question is important because the participants' mental response to the situation could be an important determinant of the effectiveness of non-technical skills training, as is the case of the communication skills examined in the simulations described (Delisle et al., 2019).

6. Conclusions

According to our study results, the participants had a generally high degree of satisfaction with the OSCEs but were of the opinion that this methodology should be implemented more frequently. Debriefing was considered to be a crucial element of the process, greatly contributing to the learning process and the participants' satisfaction. However, the students reported suffering anxiety when acting in front of their classmates. Further research is needed to determine the impact of stress and anxiety when OSCEs are used for the acquisition of professional skills.

CRediT authorship contribution statement

Silvia García-Mayor: Conceptualization, Methodology, **Casta Quemada-González**: Visualization, Investigation., **Álvaro León-Campos:** Statistic análisis, Writing, Supervision. **Shakira Kaknani-Uttumchandani**: Supervision. **Ada del Mar Carmona-Segovia** Software. **Laura Gutiérrez Rodríguez:** Software- Reviewing and Editing. **Celia Martí-García**: Conceptualization, Methodology, Writing- Original draft preparation.

Declaration of competing interest

None.

References

Aronowitz, T., Aronowitz, S., Mardin-Small, J., Kim, B., 2017. Using objective structured clinical examination (OSCE) as education in advanced practice registered nursing education. J. Prof. Nurs. 33 (2), 119–125. https://doi.org/10.1016/j.profnurs.2016.06.003.

Cant, R.P., Cooper, S.J., 2017. Use of simulation-based learning in undergraduate nurse education: an umbrella systematic review. Nurse Educ. Today 49, 63–71. https://doi.org/10.1016/j.nedt.2016.11.015.

Cantrell, M.L., Meyer, S.L., Mosack, V., 2017. Effects of simulation on nursing student stress: an integrative review. Journal of Nursing Education; Thorofare 56 (3), 139–144. https://doi.org/10.3928/01484834-20170222-04.

Cayuela, A., Cayuela, L., Gayango, A.S., Rodríguez-Domínguez, S., Uceda, F.J.P., Quiles, A.A.V., 2018. Tendencias de la mortalidad por suicidio en España, 1980–2016. Revista de Psiquiatría y Salud Mental. https://doi.org/10.1016/j.rpsm.2018.07.002.

De Montagut López-Sáez, S.S., Márquez, J.R., 2016. Evolución y situación actual del consumo de antidepresivos en España. Doctoral dissertation, Universidad Complutense, Madrid.

Delisle, M., Ward, M.A., Pradarelli, J.C., Panda, N., Howard, J.D., Hannenberg, A.A., 2019. Comparing the learning effectiveness of healthcare simulation in the observer versus active role: systematic review and meta-analysis. Simul. Healthc. 14 (5), 318–332. https://doi.org/10.1097/SIH.0000000000000377.

Demir, Sati, Ercan, Feride, 2018. The first clinical practice experiences of psychiatric nursing students: a phenomenological study. Nurse Educ. Today 61, 146–152. https://doi.org/10.1016/j.nedt.2017.11.019.

Elbilgahy, A.A., Eltaib, F.A., Mohamed, R.K., 2020. Implementation of objective structured clinical examination (OSCE): perceiving nursing students' and teachers' attitude & satisfaction. American Journal of Nursing 8 (2), 220–226. https://doi.org/10.12691/AJNR-8-2-11.

Grant, J.S., Moss, J., Epps, C., Watts, P., 2010. Using video-facilitated feedback to improve student performance following high-fidelity simulation. Clinical Simulation in Nursing 6 (5), e177–e184. https://doi.org/10.1016/j.ecns.2009.09.001.

Hewlett, E., Moran, V., 2014. Making Mental Health Count: The Social and Economic Costs of Neglecting Mental Health Care. OECD Publishing, Paris, OECD Health Policy Studies. https://doi.org/10.1787/2074319x.

Kim, K.J., Kim, G., 2020. The efficacy of peer assessment in objective structured clinical examinations for formative feedback: a preliminary study. Korean journal of medical education 32 (1), 59. https://doi.org/10.3946/kjme.2020.153.

Koetting, C., Freed, P., 2017. Educating undergraduate psychiatric mental health nursing students in screening, brief intervention, referral to treatment (SBIRT) using an online, interactive simulation. Arch. Psychiatr. Nurs. 31 (3), 241–247. https://doi.org/10.1016/j.apnu.2016.11.004.

Kunst, E.L., Mitchell, M., Johnston, A.N., 2016. Manikin simulation in mental health nursing education: an integrative review. Clinical Simulation in Nursing 12 (11), 484–495. https://doi.org/10.1016/j.ecns.2016.07.010.

Lee, J., Lee, H., Kim, S., Choi, M., Ko, I.S., Bae, J., Kim, S.H., 2020. Debriefing methods and learning outcomes in simulation nursing education: a systematic review and meta-analysis. Nurse Educ. Today 87, 104345. https://doi.org/10.1016/j.nedt.2020.104345.

Ley 14/1986, de 25 de abril, General de Sanidad. Boletín Oficial del Estado, 102, de 29 de abril de 1986, 15207 a 15224. Retrived from: https://www.boe.es/boe/dias/1986/04/29/pdfs/A15207-15224.pdf.

Lopreiato, J. O. (Ed.), Downing, D., Gammon, W., Lioce, L., Sittner, B., Slot, V., Spain, A. E. (Assoc. Eds.), and the Terminology & Concepts Working Group. (2016). Healthcare Simulation Dictionary. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. AHRQ Publication No. 16(17)-0043.

Mavis, B.E., 2000. Does studying for an objective structured clinical examination make a difference? Med. Educ. 34 (10), 808–812. https://doi.org/10.1046/j.1365-2923.2000.00687.x.

McCambridge, J., Witton, J., Elbourne, D.R., 2014. Systematic review of the Hawthorne effect: new concepts are needed to study research participation effects. J. Clin. Epidemiol. 67 (3), 267–277. https://doi.org/10.1016/j.jclinepi.2013.08.015.

Patrício, M., Julião, M., Fareleira, F., Young, M., Norman, G., Vaz Carneiro, A., 2009. A comprehensive checklist for reporting the use of OSCEs. Medical Teacher 31 (2), 112–124. https://doi.org/10.1080/01421590802578277.

Ritchie, H., Roser, M., 2018. Mental Health. Published online at. OurWorldInData.org. Retrieved from: https://ourworldindata.org/mental-health (Online Resource).

Roberts, K.T., Robinson, K.M., Stewart, C., Smith, F., 2009. An integrated mental health clinical rotation. J. Nurs. Educ. 48 (8), 454–459. https://doi.org/10.3928/01484834-20090518-06.

Robinson-Smith, G., Bradley, P.K., Meakim, C., 2009. Evaluating the use of standardized patients in undergraduate psychiatric nursing experiences. Clinical Simulation in Nursing 5 (6), e203–e211. https://doi.org/10.1016/j.ecns.2009.07.001.

Rodrigues, J., Lazzari, D.D., Martini, J.G., Testoni, A.K., 2019. Professors' perception of mental health teaching in nursing. Texto & Contexto-Enfermagem 28. https://doi.org/10.1590/1980-265x-tce-2017-0012.

Roh, Y.S., Kelly, M., Ha, E.H., 2016. Comparison of instructor-led versus peer-led debriefing in nursing students. Nursing & Health Sciences 18 (2), 238–245. https://doi.org/10.1111/nhs.12259.

Rössler, W. (2016). The stigma of mental disorders: A millennia-long history of social exclusion and prejudices. EMBO Reports, 17(9), 1250–1253. doi: doi:10.15252/embr.201643041.

Roussin, C.J., Weinstock, P., 2017. SimZones: an organizational innovation for simulation programs and centers. Acad. Med. 92 (8), 1114–1120. https://doi.org/10.1097/ACM.0000000000001746.

Samari, E., Seow, E., Chua, B.Y., Ong, H.L., Lau, Y.W., Mahendran, R., Subramaniam, M., 2019. Attitudes towards psychiatry amongst medical and nursing students in Singapore. BMC Medical Education 19 (1), 91. https://doi.org/10.1186/s12909-019-1518-x.

Scaffidi, M.A., Walsh, C.M., Khan, R., Parker, C.H., Al-Mazroui, A., Abunassar, M., Grover, S.C., 2019. Influence of video-based feedback on self-assessment accuracy of endoscopic skills: a randomized controlled trial. Endoscopy International Open 7 (5), E678. https://doi.org/10.1055/a-0867-9626.

Setyonugroho, W., Kennedy, K.M., Kropmans, T.J.B., 2015. Reliability and validity of OSCE checklists used to assess the communication skills of undergraduate medical students: a systematic review. Patient Educ. Couns. https://doi.org/10.1016/j.pec.2015.06.004.

Setyonugroho, W., Kropmans, T., Kennedy, K.M., Stewart, B., van Dalen, J., 2016. Calibration of communication skills items in OSCE checklists according to the MAAS-Global. Patient Educ. Couns. 99 (1), 139–146. https://doi.org/10.1016/j.pec.201.

Shinnick, M.A., Woo, M., Horwich, T.B., Steadman, R., 2011. Debriefing: the most important component in simulation? Clinical Simulation in Nursing 7 (3), e105–e111. https://doi.org/10.1016/j.ecns.2010.11.005.

Soni, R., Rani, S., Thokchom, S., Sarkar, S., 2017. A comparative study to assess the opinion and level of satisfaction of the student nurses regarding objective structured clinical examination (OSCE) and traditional method of clinical skills assessment related to antenatal examination. Int J Nurs Midwif Res 4 (2), 9–12. https://doi.org/10.24321/2455.9318.201711.

Stuhlmiller, C., Tolchard, B., 2019. Understanding the impact of mental health placements on student nurses' attitudes towards mental illness. Nurse Educ. Pract. 34, 25–30. https://doi.org/10.1016/j.nepr.2018.06.004.

Vandyk, A.D., Lalonde, M., Merali, S., Wright, E., Bajnok, I., Davies, B., 2018. The use of psychiatry-focused simulation in undergraduate nursing education: a systematic search and review. Int. J. Ment. Health Nurs. 27 (2), 514–535. https://doi.org/10.1111/inm.12419.

Warren, J.N., Luctkar-Flude, M., Godfrey, C., Lukewich, J., 2016. A systematic review of the effectiveness of simulation-based education on satisfaction and learning outcomes in nurse practitioner programs. Nurse Educ. Today 46, 99–108. https://doi.org/10.1016/j.nedt.2016.08.023.

Williams, B., Reddy, P., Marshall, S., Beovich, B., McKarney, L., 2017. Simulation and mental health outcomes: a scoping review. Adv. Simul. 2 (1), 1–8. https://doi.org/10.1186/s41077-016-0035-9.

World Health Organization, 2017. Depression and Other Common Mental Disorders: Global Health Estimates. Geneva. Retrieved from. https://apps.who.int/iris/bitstream/handle/10665/254610/WHO-MSD-MER-2017.2-eng.pdf.