Learning of Social Skills

in nursing students according to the methodology in the classroom

Aprendizaje de Habilidades Sociales en estudiantes de enfermería según la metodología en el aula

David González Pando[1,7], Andrés Alexis Ramírez-Coronel[2,6,7], Pedro Carlos Martínez-Suárez[2,5,7], José Antonio Cernuda-Martínez[3], FernandoAlonso-Pérez[1], Edwin Alberto Maxi-Maxi[2,7]
[1]Oviedo University. Gijón School of Nursing. Spain.
[2]Laboratory of Psychometry, Comparative Psychology and Ethology of the Center for Research, Innovation and Technology Transfer (CIITT).
[3]Oviedo University. Gijón School of Nursing. Spain.
[4]PhD. in Psychology. Oviedo University. Gijón School of Nursing. Spain Orcid Registry:
[5]Faculty of Clinical Psychology of the Catholic University of Cuenca, Ecuador
[6]Nursing career at the Catholic University of Cuenca extension of Azogues, Ecuador.
[7]Health and Behavior Research Group (HBR)
Correspondence: Ramírez-Coronel AA. Email: andres.ramirez@ucacue.edu.ec
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Abstract

Social Skills (SS) represents an especially important set of competencies in for healthcare professionals. This work aimed to evaluate different methodologies available for the training of nursing students in SS. A quasi-experimental investigation was designed in which 189 university students participated divided into a control group and three training groups. The experimental groups were made up of students who took the subject of Social Skills. A behavioral approach was compared with two levels of implementation of the collaborative learning technique known as Aronson's puzzle. A pre-test and a post-test were performed using the Interpersonal Difficulties Questionnaire. The results showed greater effectiveness of training through cooperative learning, a superiority that was only verified when the technique was introduced systematically in the classroom, endorsing the relevance of using this methodology in university teaching when it comes to strengthening social interaction skills.

Keywords: Social Skills, *Nursing students, cooperative learning.*

Resumen

Las Habilidades Sociales (HS) representan un conjunto de competencias especialmente importantes en los profesionales de la salud. Este trabajo tuvo como objetivo evaluar diferentes metodologías disponibles para el entrenamiento de las habilidades sociales en estudiantes de enfermería. Se diseñó una investigación cuasi-experimental en la que participaron 189 estudiantes universitarios divididos en un grupo control y tres grupos de entrenamiento. Los grupos experimentales estaban formados por estudiantes que cursaron la asignatura de SS. Se comparó un enfoque conductual con dos niveles de aplicación de la técnica de aprendizaje colaborativo conocida como puzzle de Aronson. Se realizó un pre-test y un post-test utilizando el Cuestionario de Dificultades Interpersonales. Los resultados mostraron una mayor eficacia del entrenamiento a través del aprendizaje cooperativo, superioridad que sólo se verificó cuando la técnica se introdujo sistemáticamente en el aula, avalando la pertinencia de utilizar esta metodología en la enseñanza universitaria cuando se trata de potenciar las habilidades de interacción social.

Palabras clave: Habilidades sociales, estudiantes de enfermería, aprendizaje cooperativo.

Introduction

Social Skills (SS) are a set of competencies that have acquired great importance as an object of research in both clinical and educational contexts. The significant increase in the study of SS training in recent decades is understandable to the extent that its ultimate objective is none other than to improve people's quality of life and well-being[1] The SS are involved transversally in any field of intervention, and their absence is especially critical in professionals who work through interpersonal contact[2]. Thus, the fundamental role of interpersonal relationships in the nursing profession has been highlighted[3], something that is not surprising since care can only be practiced effectively in an interpersonal relationship[4]. In

this relationship, the mastery of demand reception strategies is of singular importance[5].

In nursing student education Professors maintain that a good nursing professional must be prepared to make interpersonal contact with others, provide welcome, and a relationship based on respect and reciprocity, much of the learning outcomes emphasize SS.[6]. Competences such as active listening, empathy, or teamwork are considered relevant to such an extent that the convenience of combining the teaching of Applied Psychology with the SS and communication in nursing has been raised[7].

However, a few decades ago the training of students predominated in the acquisition of technical skills, leaving aside the very skill most needed: the development of interpersonal bonds. This situation occurred even in those disciplines in which contact with others is essential, affecting the exercise and professional relationship[8]. According to De Miguel 2009, such technical conception of teaching has undergone a radical transformation with the adaptation to the European Higher Education Area (EHEA), a new context in which the focus of attention has shifted to the acquisition of skills[9].

The success of SS training in Spanish university students has been demonstrated[10-12]. SS training assumes that it is about behaviors learned in contexts of social interaction[13]. This assumption implies the possibility of teaching them, making it relevant how to do it. The classical SS training method emphasizes the importance of socially skilled behavior rehearsal[14]. However, there are alternatives of undoubted interest in the classroom such as the implementation of Collaborative Learning techniques (CL). In fact, common aspects have been pointed out between CL and SS training, so that some authors affirm that the factors responsible for the effectiveness of CL coincide with the factors responsible for the effectiveness of SS training[15].

The CL includes different teaching procedures through an organization of the classroom in small and interactive groups that enables a system of positive interdependencies and rewards that lead students to deepen their learning and develop their self-esteem[16]. CL has shown beneficial effects on different variables such as academic performance, motivation, perception of autonomy and competence, attitude towards learning or self-esteem[17]. Currendly, there is a growing interest in these methodologies that promote social interaction in the classroom, improving performance, understanding, retention, knowledge transfer, as well as different socio-emotional variables[18]. In addition, CL techniques for SS training are especially relevant in the field of nursing[19], which justifies investigating to what extent its use represents an advantage over classical or behavioral methodology.

Methodology and methods

Participants

189 second-year students from the Gijón University Campus participated; 25 students from the Polytechnic School of Engineering (control group) and 164 students from the Faculty of Nursing corresponding to 3 consecutive courses: 2015-16, 2016-17 y 2017-18. These courses made up the 3 experimental groups. The selection criteria were to be found taking the subject of SS and Communication and Information in Nursing. The sample was obtained incidentally (¿?), trying to access the largest possible number of second-year university students during the selection periods in order to reduce the possibility that the estimates of the results were due to differences between groups. (Cook y Campbell, 1986).

The distribution of the participants was 25 (13.2%) students at the Polytechnic School (control group), corresponding to the course 2015-16, y 164 from nursering (nursing?) (86,8%), divided in 3 academic courses: 52 del 2015-16; 47 del 2016-17 y 63 del 2017-18. The sample consisted of 142 women and 47 men with an age range between 18 and 53 (P=22: DT = 5,91).

Instruments

The Interpersonal Difficulties Questionnaire (IDQ) of Eceiza, Arrieta and Goñi was used[20]. The IDQ has been proposed as a suitable instrument to assess social or interpersonal skills. It is a self-applied 36-item tool that studies 11 types of behavior in different contexts: defending rights, rejecting requests, expressing opinions, expressing disagreement, formulating requests, expressing affection or liking, giving and receiving compliments, expressing discomfort or anger, initiating interactions with people who attract, interacting in social situations and counting interactions. The scale measures 5 factors: interaction with strangers and in consumer situations, interaction with people who attract, interaction with friends and colleagues, interaction with family members, and making / rejecting requests. Items are scored using a 5-point Likert scale from “no difficulty” to “very difficult”. The instrument shows adequate psychometric properties, with a reliability (alfa de Cronbach) of .89. As evidence of validity, the IDQ offers significant correlations with the Glass Self-Verbalizations in Social Interaction Test (SISST), Merluzzi, Biever and Larsen[21]. The percentage of variance explained by the five factors of the CDI ijjs similar to that of the factors identified in other instruments such as the EMES-M[22] or EHS[23]. The advantages of the IDQ include both its ease of application (10-15 minutes) and its ability to discriminate which interaction contexts are more problematic. A higher overall score on the IDQ indicates that the person has less SS.

A confirmatory factor analysis was carried out (AFC) on the sample data (189 subjects) to determine the validity of the factorial structure that defines each of the dimensions postulated in the Interpersonal Difficulties Questionnaire (IDQ). Three indices were used to evaluate the fit of the model to the data: CFI (*Comparative Fix Index*), RMSEA (*Root Mean Square Error of Approximation*) and SRMR (*Standardized Root Mean Square Residual*). Current standards were fol-

lowed to accept the indices: values close to or greater than 0.95 were considered adequate for the CFI, those close to or less than 0.08 for the SRMR index, and values less than 0.07 for RMSEA.

For the analysis of the confirmatory factor analysis (CFA) The maximum likelihood estimator was used on the data sample of 189 second-year students from the Gijón University Campus: 25 students of the Polytechnic School of Engineering (control group) and 164 students of the Faculty of Nursing and the results obtained were the following: p <0,001, CFI =0,96, RMSEA =0,09 (confidence interval among 0,08 y 0,11) and SRMR =0,03.

Design

A quasi-experimental design with a control group was used. As these were preformed groups, the assignment of the subjects to the groups was not random. The idea of having a control group was justified by the need to control the effect of the mere implementation of daily behaviors in contexts of social interaction by students in the period between pretest and posttest. A pretest measurement of the dependent variable was performed in all groups. Subsequently, the independent variable was applied (subject of SS and Communication and Information in Nursing) only the experimental courses. Each experimental group received a different treatment condition. Finally, the dependent variable was measured again in all groups.

Procedure

The ethical guidelines of the American Psychological Association were followed[24] and the Helsinki protocol regarding informed consent. The objectives of the research were exposed to the deans of both centers, requesting their permission to administer the measurement instrument collectively at the end of any of the lectures in the first and last week of the semester. After obtaining authorizations from both Deanships (Faculty of Nursing and Polytechnic School of Gijón), all second-year students were informed of the investigation. Their voluntary participation without incentives was requested, ensuring anonymity, confidentiality of the data and its exclusive restriction for the purposes of the study. Once their consent was obtained, the participants completed the questionnaire in the presence of the researcher after receiving the corresponding instructions. The procedure was developed in the following phases:

Phase 1. Pretest in control groups (Engineering course 2015-16) and experimental groups (Nursing courses 2015-16, 2016-17 and 2017-18) at the beginning of the first semester.

Phase 2. Intervention. While engineering students received no deliberate intervention to improve their HHSS, nursing students took HHSS and Communication and Information. This course is developed throughout the first semester, addresses basic principles of interpersonal relationships, and provides HHSS training. It includes 39 hours of lectures, 12 hours of classroom practices (CP) and 4 hours of laboratory practices (LP). The theoretical contents of the lectures, as well as the topics of CP, LP and non-contact work were constant in the 3 experimental groups. The subject was taught in its entirety and at all times by the same teacher. The 3 treatment conditions were:

Course 2015-16: The classic SS training method for CP and LP was used through behavioral procedures for the development of behaviors (verbal instruction, modeling, shaping, performance feedback, positive reinforcement and guided practice). The students carried out in the classroom multiple tests of behaviors involved in different SS such as presenting themselves, formulating and rejecting requests, making and receiving praise or criticism, etc. The evaluation of the students in these activities was individual.

2016-17 academic year: Students completed their 12 CP following a CL methodology, specifically the Aronson puzzle[25]. This dynamic consisted of dividing the class into heterogeneous groups of 4 members with the assignment of differentiated and complementary roles that were informed verbally and in writing to all participants (Chart 1). Special attention was paid to the design of the different CP, identifying in detail objectives, guidelines and expected results. All the practices were developed in a classroom with individual movable chairs. Before each CP, the activity to be carried out was explained, remembering the distribution of functions and responsibilities of each role. The groups remained stable throughout the subject, while the roles were rotating in each CP. In periods enabled for this purpose, the communicators of the groups could move freely around the classroom and meet to exchange findings. The evaluation was group, with all the members of each team sharing the same qualification. Group work was done freely.

Academic year 2017-18: The Aronson puzzle[25] was used throughout the course in a systematic way, both for CP and LP and the performance of group work.

Phase 3. Posttest. At the end of the first semester, the questionnaire was administered again in all groups, coinciding with the completion of the subject of SS.

Data analysis

To check intragroup changes, the comparison t-test of 2 means was used in a repeated measures design. A confirmatory factor analysis was carried out – AFC[24] on the sample data (189 students) to determine the validity of the factorial structure that defines each of the dimensions postulated in the Interpersonal Difficulties Questionnaire (IDQ). Statistical analyzes were performed with the statistical program R. Three indices were used to evaluate the fit of the model to the data: CFI (*Comparative Fix Index*), RMSEA (*Root Mean Square Error of Approximation*) and SRMR (*Standardized Root Mean Square Residual*). Current standards were followed to accept the indices: values close to or greater than 0.95 were considered adequate for the CFI, those close to or less than 0.08 for the SRMR index, and values less than 0.07 for RMSEA (see, in the instruments section).

Results

In the first place, in order to study possible relationships between SS and gender, a mean difference was made using Student's t-test for independent groups. Greater difficulties in interpersonal relationships were found in men than in women. In addition, it was found that male students benefited less from the educational intervention than women (only for the 2017-2018 academic year).

In the comparison between the different training conditions, the results showed the superiority of the CL with respect to the behavioral methodology, but only when the technique was used systematically in all group activities. In the training group with classical / behavioral methodology, statistically significant pre-post changes ($p < .05$) were found in two factors of the CDI: interactions with strangers ($p = .003$) and interactions with friends and colleagues ($p = .047$). Meanwhile, in the group in which the Aronson[25] technique was implemented transversely, changes were obtained in all the factors, with the exception of the interaction with family members, these changes being greater than with the behavioral methodology. No statistically significant pre-post changes were obtained in the first group of CA (2016-17 academic year). This finding is discussed in the discussion. However, the Polytechnic School students, without having received any deliberate intervention, improved their SS or interpersonal skills in three forms of interaction that are common in the classroom: interaction with strangers ($p = .005$), interaction with friends and classmates ($p = .001$) and make / reject requests ($p = .01$).

Chart 1. Roles / functions based on the Aronson[25] puzzle described in the first person to be performed by the members of each cooperative group.

COMMUNICATOR I write down the decisions, agreements and distribute the tasks. I am in charge of communicating with other groups. I am in charge of communicating with the teacher.	**SUPERVISOR** I supervise that pending tasks are clear. I supervise that homework has been done.
COORDINATOR I distribute the turn to speak. I indicate the tasks that the group will carry out at all times. I report that we have completed the task. I lead the group evaluation.	**RESPONSIBLE FOR THE ENVIRONMENT** I am attentive to the level of noise produced. I remind my colleagues to have the necessary material. I am aware of the order and I encourage you to collect or place the material at the end.

Discussion

The purpose of this work was to test the effects of different SS training approaches in nursing students. The study implies considering the opportunity to take advantage of the new paradigm offered by the EEES, including new methods to develop decisive competencies for professional performance. Despite the fact that, according to a vocational profile, some students may show a high willingness to help, it is naive to expect them to spontaneously present adequate SS without the need for prior training. In fact, some studies have found a low baseline of SS levels in Health Sciences students[26].

The results of our study show an advantage of CL in SS training when it is introduced in the classroom in a systematic way. They suggest that they increase and strengthen them at the same time as cooperative processes between equals, through which students face situations and problems together, communicate, help each other, or make decisions assuming complementary roles. These roles, according to Aronson's[25] puzzle technique, bring into play different facets of SS such as assertiveness (more evident in the role of coordinator and supervisor), addressing others in public (communicator), requesting changes in the behavior of another (coordinator, responsible for the environment), etc. Expressing and discussing opinions, admitting ignorance or apologizing, making and receiving criticism, showing empathy, providing or demanding help, respecting the rights of others and defending one's own, remembering existing norms; all are SS that, to a greater or lesser extent, depending on the role that is developed at each moment, are rehearsed in a CL context. These interactions, linked with greater or lesser force to each of the roles, bring into play aspects of verbal and non-verbal communication that implicitly work on the cognitive and social components of the SS. Introducing CL techniques in the classroom is therefore effective for training SS, and their facilitating role is also relevant in order to learn to work as a team, a very important aspect in the health professions. Using cooperative groups not only improves interpersonal and communication skills essential for the planning, coordination and development of the activity in progress, but also improves the capacity for teamwork, ultimately one of the SS most valued by companies.

In the present study, the types of SS (reflected in the different factors of the CDI) that obtained the best results were those that corresponded to a greater extent with the classroom situation, being carried out with high frequency ("interaction with strangers", "with friends and companions", or "make / decline requests"). In the same way, it is reasonable to think that, even without receiving specific training, the students of the Polytechnic School improved their SS in the facets "making / receiving requests" and "interaction with strangers" because these behaviors are rehearsed spontaneously in the many interactions that usually occur in the classroom, and especially in the first half of the course (requesting notes, communicating with new classmates, etc.). Accordingly, the improvement in SS in this group of students should not be surprising. It is, however, the absence of statistically significant changes in the SS of the experimental group corresponding to a low level of implementation of CL techniques (2016-17 academic

year). This data deserves an in-depth explanation. To begin with, the effect sizes found in educational research tend to be lower compared to other disciplines, especially when it comes to evaluating innovative methodologies[28].

It is also important to consider some contextual data. In the first place, the teacher, after receiving specific training on CL in the context of their continuing education, develops this ad hoc methodology for the first time in the study. For this reason, it cannot be ruled out that the teacher's lack of competence and experience, on the one hand, and the possible relaxation of certain behavioral practices in which he had been emphasizing in previous courses, on the other, could have negatively influenced the results. In any case, the need for adequate training and experience in CL methodology is evident. Nor can we ignore the difficulties that some students show when accepting formats that are incompatible with passivity in the classroom, such as CL by nature, a circumstance that is probably reduced with massive practice. Another factor would have to do with the inappropriate conditions in which teaching is sometimes carried out (classrooms with many students, high noise, interference, etc.).

The limitations of this study are evident, beyond those that concern any quasi-experimental study or those derived from using psychological tests as a measurement instrument. To start, it would be advisable to use complementary measures of the dependent variable, as well as to introduce greater control over extraneous variables that could affect the results. Since random assignment is not feasible, it would be convenient to identify students who have received previous training in SS, as well as those who present high levels of social anxiety, taking into account an inverse linear relationship between socially skilled behavior and social anxiety[12].

Another important limitation is given by the imbalance between the samples of the experimental groups and the control group, both in size and in distribution by sex. The sample of nursing students is predominantly female (82%), while the opposite is true in the sample of engineering students (32%). This fact makes it difficult to generalize the results. As if that was not enough, long-term data are not available to evaluate the generalization and stability of the changes, although it is reasonable to consider that these are maintained over time as the behaviors trained are present in the training contexts where they are functional, with special attention to clinical practices and group activities of other subjects. We understand that there is nothing better than live practice in natural settings to help transfer trained SS into everyday life. After all, the availability and likelihood of socially adept behavior fundamentally depends on past training and how and to what extent it continues to be reinforced in the present.

In our opinion, comparing the effectiveness of classical training and CL should not imply the image of two opposing methods (behavioral versus CL). In fact, well-known behavioral procedures are easily identifiable in CL dynamics. Thus, among others, in CL students observe the performance of others in different roles (modeling), use their own resources and SS to perform tasks (behavior rehearsal), receive immediate feedback from their classmates in the classroom and transfer what they have learned to other situations (generalization)[12]. It is meant that the CL serves as a context for the strengthening of SS, but perhaps what is decisive is that it incorporates a more natural reinforcement than that probably used by the teacher in the classroom. In this sense, in the interaction between students, certain facial expressions such as the smile, gestures or looks of approval, the attention received, even an applause or a laugh, can function as powerful social reinforcers without prejudice to introducing a stimulating learning dynamic. As if that were not enough, the use of social reinforcers, which are inherent to the situation of communicating, would facilitate the generalization of results beyond the training received.

Controversy exists regarding sex differences in SS. Our study reveals that women score better on SS while men score worse. This finding is consistent with research suggesting better HHSS outcomes in women[11]. However, other studies point in the opposite direction (Caballo, Salazar, Olivares, Irurtia, Olivares y Toledo, 2014; Caballo, Salazar and reasearch team CISO-A, 2017). In any case, these differences could be related to the performance context of each sex.

Future research should be oriented, beyond evaluating large groups of students who receive training in SS administered indiscriminately, to the study of specific trainings that allow the introduction of adaptations to certain needs that are not uncommon in students, such as presenting levels elevated social anxiety.

Finally, as learning emerges from human interaction and communication, we consider that university teachers must create a cooperative culture in the classroom, which implies training on their part and an interest in assuming a catalytic role in interactions between students. The CL not only constitutes an effective methodology for training in SS, but also facilitates the development of behaviors of tolerance, solidarity and respect for others that transcend the strictly academic and allow the personal, social and emotional growth of students. After all, cooperation, the provision of mutual help, is a characteristic of our species and one of the constitutive features of the human being.

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Conflicts of interest
None.

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