

# Intergroup contact and team functioning among nursing students: the mediation role of intergroup anxiety

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**Abstract.** *Background and aim.* Background and aim of the work. The improvement of team effectivity is one of the main concerns for healthcare organizations. Moreover, healthcare organizations must cope with increasing multicultural composition of both workforce and patients. The intergroup contact theory suggests that frequent and positive face-to-face contact among professionals or students with different cultural heritage can help to reach both increasing team effectiveness and adequate care in a multicultural setting. The aim was then to verify whether intergroup contact during practical training would decrease intergroup anxiety and then increase team functioning. *Methods.* A cross-sectional design was used in which a questionnaire was delivered to 83 nursing students. *Results.* According to the intergroup contact theory, frequent and positive contact with non-native professionals decreased the intergroup anxiety which, in turn, increased prejudice and, more importantly, decreased team functioning. Moreover, intergroup anxiety showed a complete mediation effect on the relations between intergroup contact during practical training and both negative attitude toward immigrants and team functioning. *Conclusions.* Intergroup contact with non-native professionals or students during practical training is able to indirectly decrease prejudice and improve team functioning by lowering the anxiety that is aroused by encounter with non-native individuals.

**Key words:** Intergroup contact, nursing students, team functioning, improved care

## Introduction

Modern healthcare organizations are facing many organizational as well as procedural challenges. Indeed, along with increasing complexity of care delivery and increased technical and technological competences required for supply adequate care, healthcare organizations are facing also challenges which derive from changes in the cultural composition of society. This article focuses on the study of some processes that are implicated in the ways in which healthcare organizations deal with these challenges.

Interprofessional collaboration and effective interprofessional team functioning are recognized as two of the principal factors through which healthcare systems may effectively face the increased complexity of care process. Accordingly, research on interprofession-

al collaboration is constantly increasing (1), and it has been shown that better interprofessional collaboration improves clinical, organizational and individual health outcomes (2,3). Beside increased complexity of healthcare processes, health organizations are also facing an increasing in cultural diversity of society composition (4). This challenges health system in two ways at least: a) to take into account the role of cultural heritage of patients on the care processes (5); b) to consider that healthcare professionals may belong to different cultures so that teamwork are becoming intercultural and interprofessional groups. In the present paper, we are particularly committed with the latter point given that the increasing ethno-cultural difference inside the teamwork may limit collaboration and obstacle the achievement of care unit's goals. Indeed, prejudiced professionals may be reluctant, intentionally or not, to

interact and collaborate with colleagues from different cultures. In such a way, team functioning and quality of supplied care may be damaged (6,7). Moreover, it has been showed that anti-immigrant prejudice is a detectable phenomenon also in Italian hospitals (8).

In sum, healthcare systems are required to boost interprofessional collaboration and effective team functioning in order to face the increased complexity of care, but at the same time, increased cultural diversity in healthcare professionals may hinder collaboration and team functioning. Thus, is it possible to increase team functioning when professionals belong to different cultural or ethnic groups?

### **Intergroup contact and positive intergroup outcomes**

Some recent works have tried to apply theories from social psychology to the relationship between professionals in healthcare settings (6,9–11) showing promising results. Social psychology offers some theoretical accounts that may be useful for trying to increase collaboration among professionals in general (10,12), and from different cultural or ethnic groups in particular. Among those, intergroup contact is widely recognized as a way to reduce intergroup enmity and increase intergroup collaboration (13,14). According to intergroup contact theory (15), intergroup contact (that is to say face-to-face encounter between persons belonging to different groups) is able to decrease prejudice, intergroup hostility, intergroup anxiety and perception of threat when groups 1) are equal in status, 2) encounter in a cooperative context, 3) share common goals and 4) an institutional support exists. Subsequently research has shown that these four conditions may help, but are not necessary to allow intergroup contact to increase intergroup harmony and decreased conflict, stereotypes and prejudice (14). Nowadays, there is robust evidence that mere intergroup contact can improve intergroup relations (16,17), especially when contact is positive. Some of that evidence come also from work settings and, in particular, healthcare settings (6). For example, Voci and Hewstone (18) showed that, in a supermarket as well as in a hospital, intergroup contact reduced the prejudice against migrants in the workplace. Simi-

lar results has been supplied with sample of nurses (19,20). More recently, it has been shown that intergroup contact can extend its positive effect beyond prejudice and stereotyping. Indeed, it has been shown that, among healthcare professionals, frequent and positive contact with non-native colleagues decreased prejudice against immigrant in general, but also increased the perception of effective team functioning (21). This effect was mediated by the perception of ingroup threat: positive and frequent contact with non-native coworkers, decreased Italian professionals' perception of threat that, in turn, increased the perception of effective team functioning.

Accordingly, the aim of the present work was to investigated whether contact during practical training would lead nursing students to increase perception of team functioning and decrease prejudice against migrants in general. Practical training is a particular moment for healthcare students who begin to experience interaction with other professionals and enter actively into the care unit (i.e., teamwork) (22). In such a time, students have many opportunities to enter in contact with students, professionals or patients with other cultural or ethnical groups.

For prejudice, we expected that, according with literature and evidences discussed thus far, frequent and positive contact with non-native professionals during practical training would reduce prejudice against immigrants in general (hypothesis 1).

With respect to team functioning, our reasoning is that frequent and positive intergroup contact would help to improve relations between coworkers in terms of better communication, participation and collaboration among members. The aspects of groups dynamics have been linked to improved team functioning and effectiveness (23,24). Thus, positive and frequent contact would drive to better perception of team functioning (hypothesis 2).

Finally, we considered the mediating role of intergroup anxiety. Intergroup anxiety is considered one of the principal mediator of intergroup contact. Intergroup anxiety refers to a negative affective state experienced by people when are interacting, or when merely anticipating interaction, with members of different groups (25). This sense of anxiety determines avoidance of the outgroup members and increasing preju-

dice and stereotyping against the outgroup. Accordingly, Pettigrew and Tropp (17) meta-analyses showed that intergroup anxiety mediates the relationship between the contact and prejudice even more strongly than empathy and outgroup knowledge. More precisely, intergroup contact is able to reduce the anxiety often aroused by intergroup encounters (26,27), which in turn reduces prejudice and negative outcomes against outgroup (20,28). Thus, we expected to find that contact would reduce intergroup anxiety (hypothesis 3), which in turn should mediate the relations between intergroup contact and both prejudice and team functioning (hypothesis 4 and 5). Figure 1 shows the expected path model.

**Method**

**Participants and procedure**

The research enrolled 96 nursing students. Of those, 13 were excluded because had not Italian citizenship. The analyzed sample was then composed by 83 nursing students of whom 60 (72%) were women (mean age = 23.86, SD = 2.60). A cross-sectional survey design was used, and participants were asked to voluntarily complete a questionnaire.

**Measures**

**Quantity of contact with non-native healthcare professionals.** Quantity of contact was measured with two items (e.g. ‘In the CU in which you done your practical training, how often do you have contact with

migrant professionals?’) on a five-point Likert scale (0 = never to 4 = very often; Cronbach’s alpha = .89).

**Quality of contact with non-native healthcare professionals** Participants were asked to describe the kind of contact they had with migrant colleagues during the practical training using four semantically opposed adjectives (e.g. pleasant-unpleasant, natural-unnatural). Ratings were on a 5-point Likert-type scale (-2 = negative adjective, +2 = positive adjective; Cronbach’s alpha = .76).

In order to obtain one single score of intergroup contact, we followed the common procedure to multiply quantity of contact scores by quality of contact scores (18,20,21). In this way, a new score ranging from -8 (frequent negative contact) to +8 (frequent positive contact) was used as measure of intergroup contact.

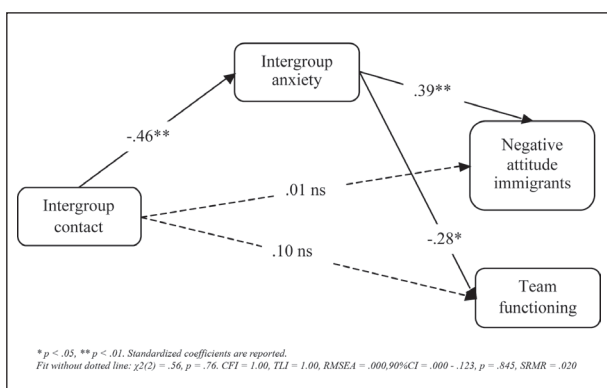
**Intergroup anxiety.** As suggested by Stephan and Stephan (25), intergroup anxiety was measured asking participants to imagine a hypothetical situation at work in which the majority of professionals was immigrants, and then indicate how they would feel using seven adjectives (e.g., happy, cautious, relaxed). Rates were on a 5-point Likert scale (1 = not at all; 5 = very much; Cronbach’s alpha = .79).

**Teamwork functioning.** Perception of team functioning was measured with 14 items from the Inter-professional Team Collaboration Scale (29). Participants were asked to think about the CU in which they done, or had done, their practical training and to express their agreement with statements (i.e., ‘Team members focus on understanding the perspectives of others rather than defending their own specific opinions’) on a five-point Likert-type scale (1 = completely disagree to 5 = completely agree; Cronbach’s  $\alpha$  = .90).

**Attitude against migrants.** This was measured by asking participants to indicate their general attitude toward immigrants on a thermometer ranging from 0 (extremely negative attitude) to 10 (extremely positive attitude). Scores were reversed so that higher score indicated more negative attitude toward immigrants.

In the last part of the questionnaire, participants were asked to indicate some socio-demographic characteristics such as gender and age.

All but prejudice measures were computed as the average values of the intended items so that higher scores indicate higher values of the measured construct.



**Figure 1.** Expected relations between variables and estimated coefficients.

## Results

### Correlation and descriptive statistics

Data inspection indicated that some individual scores were suspicious to be outliers (i.e., near of over 3ds of the mean score). In order to maintain as participants as possible and to be cautious about estimations, we choose to winsorize all measures at 5%. Table 1 shows descriptive statistics and zero-order correlations among measured constructs.

As one can see, according with hypothesis 1, intergroup contact was negatively related with prejudice, albeit this correlation was not significant at statistical level. According with hypotheses 2 and 3, instead, intergroup contact was significantly and positively correlated with team functioning and negatively and positively related with intergroup anxiety. This latter was positively correlated with negative attitude toward migrants and negatively related with team functioning, as expected.

### Model testing

The hypothesized relations among variables were tested through structural equation modelling approach with maximum likelihood estimation and robust standard error. Results are shown in figure 1. As expected from hypothesis 3, intergroup contact significantly decreased intergroup anxiety,  $b = -.16$ ,  $SE = .03$ ,  $Z = -4.88$ ,  $p < .001$ . Intergroup anxiety, in turn, significantly increased negative attitude toward immigrants,  $b = 1.18$ ,  $SE = .38$ ,  $Z = 3.09$ ,  $p = .002$  and decreased team functioning  $b = -.24$ ,  $SE = .11$ ,  $Z = -2.26$ ,  $p = .024$ . Moreover, contrary to the hypothesis 1 and 2 direct

effects of contact on both negative attitude toward immigrants,  $b = 0.01$ ,  $SE = 0.14$ ,  $Z = .08$ ,  $p = .94$ , and team functioning,  $b = .03$ ,  $SE = .03$ ,  $Z = .81$ ,  $p = .42$ , were not significant. This occurred because effects of contact were completely mediated by intergroup anxiety. Indeed, according with hypotheses 4 and 5, indirect effect of intergroup contact on negative attitude toward immigrants was significant,  $b = -0.18$ ,  $SE = .07$ ,  $Z = -2.60$ ,  $p = .009$  as well as the indirect effect of contact on team functioning,  $b = .04$ ,  $SE = .02$ ,  $Z = 2.00$ ,  $p = .045$ . The model without path between intergroup contact and both negative attitude toward migrants and team functioning had satisfactory fit,  $\chi^2(2) = .56$ ,  $p = .76$ . CFI = 1.00, TLI = 1.00, RMSEA = .000, 90%CI = .000 - .123,  $p = .845$ , SRMR = .020.

### Discussion and conclusion

The present research supplies further evidence that intergroup contact can extend its effect beyond the usual intergroup processes (i.e., prejudice) (13,14,21). Indeed, results indicated that nursing students who had frequent and positive contact with non-native professionals or students during their practical training perceived the teamwork in which training was done as more collaborative. This effect, however, was completely mediated by intergroup anxiety, that is to say a negative feeling that people may experience when meet people belonging to different cultural or ethnic group. This results is coherent with literature which shows that intergroup contact is able to reduce negative feeling toward immigrants (18,20,30), but represents one of the few available evidence that intergroup contact, by reducing intergroup anxiety, may help to

**Table 1.** Zero-order correlations and descriptive statistics among considered variables.

	Contact	Anxiety	Negative attitude toward migrants	<i>M</i>	<i>SD</i>	<i>M<sub>w</sub></i>	<i>SD<sub>w</sub></i>	range
Teamwork functioning	.23*	-.33**	-.07	3.23	0.60	3.22	0.53	1-5
Contact		-.46**	-.17	1.93	2.02	1.88	1.8	-8 +8
Anxiety			.38**	1.95	0.63	1.95	0.61	1-5
Negative attitude toward migrants				6.76	1.95	6.80	1.85	0-10

\*  $p < .05$ , \*\*  $p < .01$ . *M<sub>w</sub>* = winsorised mean; *SD<sub>w</sub>* = winsorised standard deviation.

improve healthcare and organizational outcomes such as team functioning.

Present research has some limitations of course. First, the cross-sectional design and the derived correlational nature of data do not permit to exclude other relations between variables. Moreover, this kind of design is affected by the common method bias (31) which can affect estimated relations among measures. Another shortcoming lies on the small sample size and on the fact that we considered nursing students only. As indicated by some research, nursing students and nurses represent an intermediate-status group (32,33) in the health profession hierarchy (34,35) which has some particular features with respect to other professions such as physicians and healthcare operators. These aspects may pose some limitations to the generalizability of present results. For this reason, further research is needed in order to deeper analyze the relationship between intergroup contact and organizational outcome (i.e., team functioning and collaboration) among other healthcare professions.

Despite these shortcomings, we believe that, from an applicative point of view, present results may be of interest for the management of healthcare and educational organizations. Indeed, findings indicate that frequent and positive contact may help future professionals to be more effective into teamwork, and that positive effect of contact may be detectable since educational time, at least in nursing students.

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