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Attitudes towards Interprofessional Education among Medical and Nursing Students: the Role of Professional Identification and Intergroup Contact

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15 July 2023

Introduction

Interprofessional collaboration (IPC) between nurses and physicians is one of the most important concerns in modern healthcare organisations. Indeed, the complexity of the healthcare delivery process requires the collaboration of several professionals in order to achieve the best care and cure for patients. A good deal of research indicates that better interprofessional collaboration improves many outcomes, at both the clinical (i.e. mortality), organisational (i.e. turnover and climate) and individual (i.e. job satisfaction) levels (e.g., Hughes and Fitzpatrick 2010). Unfortunately, there is still a lot of evidence that interprofessional collaboration between nurses and physicians is far from effective. Indeed, several scholars have provided evidence that nurses and physicians often disagree about the meaning of IPC, and report different views and attitudes about the extent to which professionals actually engage in IPC (Nelson, King and Brodine 2008; Ardahan, Akçasu and Engin 2010; Caricati et al. 2016). For example, a recent meta-analysis showed that nurses displayed a more positive attitude towards IPC (i.e., they expressed more desire to collaborate with physicians than physicians were willing to collaborate with nurses), while physicians reported that IPC was already in place in their care unit more than nurses (Sollami, Caricati and Sarli 2014).

Many factors have been found to improve interprofessional effectiveness, such as healthcare team designs, functions, and desired outcomes (see Lemieux-Charles and McGuire 2006 for review). One of these factors is interprofessional education (IPE) - that is to say a context in which "members or students of two or more professions associated with health or social care, engaged in learning with, from, and about each other" (Barr, Koppel, Reeves, Hammick and Freeth 2005 p. XXIII). In an attempt to improve nurse-physician collaboration, many scholars have suggested that it would be useful for students from different healthcare disciplines to learn together while doing their undergraduate courses. IPE not only seems to increase interprofessional relations during the academic education process, but the effects are detectable after the students have entered their professional roles in healthcare organisations. Indeed, students trained using an IPE approach are

more likely to become collaborative team members and to recognise the autonomy and role of their and others' professions (Reeves et al. 2008; see also Baker, Egan-Lee, Martimianakis and Reeves 2011).

However, as lamented by Oandasan and Reeves (2005), and confirmed by Olson and Bialocerkowski's (2014) meta-analysis, the variables that affect the extent to which students want engage in IPE are largely unknown. IPE effectiveness may be affected by many factors at different levels, such as the individual learner, the teaching environment and the institutional environment (Oandasan and Reeves 2005). At an individual level, a very important variable is the attitude towards IPE, that is to say the learners' readiness to learn together with students from other professions. This is also acknowledged by the modified Kirkpatrick's Model of Educational Outcomes (Freeth et al. 2002) which specifies that the learner's reaction – i.e. the learner's view about interprofessional learning experience – is the first key point to be addressed in order to make IPE effective.

Thus, if students' favourable attitude is important in order to improve IPE, what variables may in turn affect student's attitude towards IPE? In order to try to answer to this question, in the present paper we adopt an intergroup perspective and investigate whether some of the variables related to the intergroup processes, namely ingroup identification and intergroup contact, can affect healthcare students' attitudes towards IPE. To our knowledge, this is one of the first papers to apply intergroup theories to the analysis of inter-professional dynamics among students of different healthcare disciplines.

Nurse-physician collaboration as an intergroup relationship

Our approach implies that we ought to consider the nurse-physician relationship and the corresponding relationship between students as an intergroup relationship in which members of different groups – nurses and physicians as well as nursing and medicine students – interact. In this case, IPE can be seen as the outcome of an intergroup relation in which specific professional groups have different status: the professional group of physicians represents the high-status group and

professional group of nurses represents the low-status group. In such a framework, a positive attitude towards IPE may be considered as reflecting a co-operative relationship among groups, while a negative attitude towards IPE reflects competitive relation among groups.

Based on these premises, psychosocial theories of intergroup relations can be useful for understanding the processes that affect interprofessional education. We refer to Social Identity Theory (SIT, Tajfel and Turner 1979) and intergroup contact theory (Allport 1954). The basic premise of SIT is that people derive part of their self-knowledge – that is, their social identity – from the groups to which they belong and that the evaluation of this social identity affects their self-esteem. People are motivated to belong to groups that are positively evaluated and to behave in ways that enhance the value of the ingroup over the outgroup. The key psychosocial construct that links self-interest to group-interest is ingroup identification, that is to say the extent to which people feel tied to their group. The more people are identified with a particular group, the more they are oriented to maintain or enhance the value and prestige of that group, and act in a way that favours the ingroup. Different studies have shown that the identification with a professional group is also an essential component of a person's professional identity (Crocetti, Avanzi, Hawk, Fraccaroli and Meeus, 2014; Marletta et al. 2014) for university students (Mancini and Tonarelli 2013; Mancini, Caricati, Panari and Tonarelli, 2015). Accordingly, in healthcare settings, it has been shown that professional identification increases the group differentiation among healthcare professions (Hean, Clark, Adams and Humphris 2006) and students (e.g., Barnes et al. 2000).

Another important variable in SIT is group status, which represents an element of the evaluation of the ingroup and, accordingly, of a person's social identity. Thus, people prefer to belong to groups with high status because this assures a relative positive ingroup evaluation. Accordingly, it has been shown that members of high-status group are more inclined to stay in the group, while members of low-status group are more likely to leave, or desire to leave, the ingroup (e.g. Doosje, Spears and Ellemers 2002; Ellemers, Spears and Doosje 1999; 2002). Moreover, high-status group members are more likely to try to maintain their advantaged position by discriminating

against low-status groups, while low-status group members are more likely to try to improve the position of their ingroup, depending on the actual perception of status differences between high- and low-status groups (e.g. Ellemers et al. 2002). For example, low-status group members are more likely to question their disadvantaged position when they believe that the social stratification is illegitimate or unstable (e.g. Bettencourt, Dorr, Charlton and Hume 2001; Caricati & Sollami, 2016).

Applying SIT to the nurse-physician relationship, some studies (Bartunek 2011; Caricati et al. 2015; 2016; Mitchell, Parker and Giles 2011) have depicted physicians and nurses as two groups with different statuses that are embedded in co-operative or conflicting relationships. The same kind of intergroup relation can be applied to medical and nursing students. For example, during their socialisation, medical students learn that they must be influential in professional and interprofessional situations (Haas and Shaffir 1991; Headrick, Wilcock and Batalden 1998). Nevertheless, separate socialisation and learning processes build a professional culture that strongly affects the professional identity formation of each healthcare profession (e.g., Drinka and Clark 2000).

Within this intergroup framework, how can IPE be analysed? IPE challenges the traditional social and functional hierarchy between professions, enhancing the autonomy of nursing students, and putting both professions on a similar level of responsibility and power (Barr et al. 2005; Oandasan and Reeves 2005). Accordingly, one of the desired outcomes of the IPE is the reduction or removal of the professional cultures to which students are exposed and encouraged to comply with through socialisation processes (Oandasan and Reeves 2005). In such a context, IPE is a desirable outcome for nursing students because it would increase the value of their professional group, while it could be somewhat threatening to the status of medical students because it would reduce the traditional power and dominance of their professional group. In other words, IPE seems to serve different interests for nursing and medical students. Thus, one can expect that ingroup identification would affect the extent to which nursing students and medicine students would be

favourable to engage in IPE. This expectation has received some indirect support from studies on nurse-physician collaboration. More precisely, some recent research have shown that professional identification has a different effect on attitudes towards IPC depending on the profession: the more nurses identified with their professional group the more they favoured collaboration with physicians, while the opposite occurred for physicians (see Caricati et al. 2015; 2016).

Generalising these results to IPE, in the present study it was expected that (hypothesis 1) the more nursing students identified with the ingroup – i.e. with nurses as a professional category – the more they were likely to engage in shared education with students from other professions. In contrast (hypothesis 2), the more medical students identified with physicians as a professional category, the less they would be oriented to shared education with students from other professions.

Another relevant psychosocial theory of intergroup relations is Intergroup Contact Theory (ICT) (Allport 1954), which is rooted in the idea that contact with outgroup members will increase the positive view of, and reduce prejudices and discrimination against, the outgroup. According to Allport's contact hypothesis, the positive effect of contact is at its maximum when four conditions are met: 1) equal status between groups, 2) common goals, 3) co-operation, and 4) existing support of authorities and law. Given that the academic curricula require students to attend several practical trainings in healthcare settings and thus come into contact with different healthcare professionals, intergroup contact theory seems to be well fitted to education in healthcare. Accordingly, the contact in healthcare settings is recognised as a way that can improve inter-professional attitude and reduce inter-professional stereotypes, not only among healthcare professionals, but also among health professional students (Ateah et al. 2011; Mohaupt et al. 2012; Wakefield et al. 2006). For example, in line with more recent evidence about imagined contact (Crisp and Turner 2009), Mohaupt et al. (2012) showed that simulation exercises with inter-professional contact opportunities stimulated students' positive attitude towards IPE. When healthcare students start their practical trainings in care units, they have several opportunities to be in contact with students or people from other professions. At that moment, students begin to learn how to interact with other professionals

and how care units work. Furthermore, students are required to provide care to patients (under the supervision of their tutors) and enter actively into the teamwork. Moreover, students are required to attend many hours of practical training in different care units, so that the more hours of training a student has done, the higher the interactions that he/she has with other professionals. In this sense, the numbers of hours of training may be seen as an indicator of the extent to which students of one professions has entered in contact with practitioners from other professions. Accordingly, we expected that (hypothesis 3) the more nursing and medical students have spent hours together in practical training (i.e., high contact), the more they should show a positive attitude towards IPE.

Method

Participants

Three hundred and eighty-three questionnaires were compiled and returned. However, questionnaires with missing values on the relevant variables were excluded. This left a sample of 348 participants, of whom 205 (59%) were nursing students and 143 were medicine students (221 women and 127 men; mean age = 23.20 years, SD = 4.59).

Procedure

We first obtained the consent to conduct the present research by asking the directors of the medical and nursing courses to contact the students using their institutional email. An email inviting students were to participate in an on-line survey about the images of health professions was sent. It was stressed that participation was voluntary and completely anonymous and that participants could leave the questionnaire at any time. Informed consent was obtained from all individual participants included in the study.

Measure

Attitude towards IPE was measured with the adaptation of the Readiness for Inter-professional Learning Scale (RIPLS) (Parsell and Bligh 1999). This instrument is largely used to measure readiness of healthcare students to engage in interprofessional learning. Items ask the

student to indicate the extent to which they agree or disagree with statements concerning learning with students from other professions (i.e., "Learning with other student professionals will make me a more effective member of a health and social care team"). The original version of the RIPLS is composed of 19 items, and measures three dimensions, namely teamwork and collaboration, professional identity, and role and responsibilities (Parsell and Bligh 1999; see also Lie, Fung, Trial and Lohenry 2013). More recently, the RIPLS has been enlarged to 29 items also measuring the Patient-centredness dimension (e.g., El-Zubeir, Rizk and Al-Khalil 2006; Reid, Bruce, Allstaff and McLernon 2006). This factor structure, however, has been criticised for a lack of robustness and some dimensions have very low internal reliability (see Lie et al. 2013; Parsell and Bligh 1999). Perhaps for these reasons, RIPLS is usually used as single-dimension measure, consisting of the total score from all items.

In this study we choose to use the El-Zubier et al.'s (2006) version of the RIPLS. Since this scale has not yet been translated into Italian, the original items were translated following a team-based iterative approach (Douglas and Craig 2007). Judges who formed the team selected only items that were applicable to the Italian context. In this way, the dimension regarding the patient-centredness was not considered given that, in Italy, healthcare students do not have the opportunity to work autonomously with patients. This process left 14 items on a 5-point Likert scale (1 = completely disagree, 5 = completely agree).

As expected, the explorative factor analysis performed on a random subsample of 100 participants indicated the presence of one single factor accounting for about 53% of the total variance. A confirmatory factor analysis with one latent dimension (and one method dimension grouping negative worded items) was the done on the remaining sample. Results indicated that the one-factor solution had good fit ($\chi^2(71) = 118.07$, $p < .001$, CFI = .967, TLI = .957, RMSEA = .052 95%CI = .04 - .07, $p = .41$. SRMR = .03), and that all the items had a significant effect on the latent dimension (all ps < .001). Thus, RIPLS can be said to be unidimensional. Accordingly, the reliability in this study for the whole sample was excellent (a = .92).

Professional identification was measured with six items on a 5-point Likert-type scale (1 = completely disagree, 5 = completely agree) taken from the Professional Identity Status Questionnaire (PISQ-5d, Marletta et al. 2014) adapted for students (Mancini et al., 2015). Sample items are "It is important for me to become a nurse/physician, and "I am proud of becoming a nurse/physician". The reliability was satisfactory (Cronbach's alpha = .84).

Intergroup contact was operationalised as the amount of hours of practical training that students had already done. A higher number of training hours were understood as an indicator of higher levels of intergroup contacts.

Perceived professional status served as control measure and was measured by asking participants to rank six professions (physicians, nurses, physiotherapists, obstetricians, laboratory technicians and radiology technicians) according with their social prestige (1 = more prestigious profession; 6 = less prestigious profession).

Results

Check of status differences

The ranks assigned to nurses and physicians were entered as a repeated measure into an ANOVA in which course was the independent factor. Results indicated that both nursing and medicine students (interaction effect: $F(1, 342) = 2.21$, $p = 0.14$, $\eta^2 = .005$) perceived physicians as higher in status ($M = 1.69$, $SD = 1.63$) than nurses ($M = 2.96$, $SD = 1.44$, $F(1, 342) = 163.65$, $p < .001$, $\eta^2 = .324$). Thus, all students believed that physicians hold more prestige than nurses, as expected.

Preliminary analysis

As indicated in Table 1, nursing students scored higher on RIPLS and attained many more hours of training than medical students. This was due to the different organisation of courses, which plan more practical training time for nursing students. Medical students showed higher professional identification than the nursing students. This latter result is consistent with previous evidence

showing that high-status group members tend to have a greater level of identification with the

ingroup than low-status group members (Bettencourt et al., 2001; Verkuyten, 2005).

The correlation between RIPSL and professional identification was significant and negative

for medical students, and significant and positive for nursing students. Finally, hours of training did

not correlate significantly with other variables.

Insert table 1 about here

Effect of professional identification and training on attitude towards IPE

In order to test the research hypotheses we used a linear regression model approach in which

RIPLS scores were the dependent variable, and professional identification, hours of training, course,

as well as interactions were the predictors. Professional identification and hours of training were

grand-mean centred and course was dummy coded (0 = nursing students). Moreover, given that

gender was not equally distributed between the courses ($\chi^2(1) = 12.81$, $p < .001$, 71% and 52% of

women in the nursing and medical student samples respectively), and that women scored higher on

IPE ($M = 4.05$, $SD = 0.67$) than men ($M = 3.84$, $SD = 0.81$; $F(1,346) = 6.93$, $p = .01$, $\eta^2 = .02$),

gender was used as covariate in the model.

Table 2 shows the results of the analysis. Controlling for other variables, nursing students

still scored higher on RIPLS than medical students ($b = -0.26$, $SE = 0.11$; $t(341) = 2.29$, $p = .02$, η^2

$= .015$). Moreover, professional identification had a significant and positive effect on RIPLS ($b =$

0.13, $SE = 0.06$; $t(341) = 2.04$, $p = .04$, $\eta^2 = .01$). This effect was, however, qualified by a

significant interaction with the course ($F(1,341) = 9.09$, $p = .003$, $\eta^2 = .03$). Simple slope analysis

revealed that, as expected from hypothesis 1 and 2, professional identification had a positive and

significant effect on RIPLS for nursing students ($b = 0.13$, $SE = 0.06$, $p = .02$), while it had a

significant but negative effect for medical students ($b = -0.28$, $SE = 0.13$, $p = .03$). Figure 1 depicts

this interaction. Finally, contrary to hypothesis 3, hours of training had no significant effect, either as a main effect or as an interaction effect.

Insert table 2 and figure 1 about here

Discussion

The present research aimed to analyse the effect of professional identification and the extent of intergroup contact on attitudes towards interprofessional education among nursing and medicine students. Some recent theoretical papers from medical education and ethics have stressed the importance of considering the effect of processes linked to group membership on interprofessional education and collaboration (see e.g. Burford 2012; Pecukonis 2014). Accordingly, the present research tried to address this issue, as one of the first works to systematically apply psychosocial theory to students' attitudes towards IPE.

The present results indicate that professional identification has an effect on students' attitudes towards IPE that was moderated by the type of university course students were attending. More precisely, nursing students were more favourably disposed towards IPE to the extent that they felt tied to their future professional category. In contrast, professional identification had a negative impact on IPE attitudes among medicine students. These results confirm the results of previous studies conducted with professionals (e.g. Caricati et al. 2015; 2016) and are clearly in line with SIT's expectations, indicating that ingroup identification works differently depending on the social position of the ingroup. For low-status group members (i.e. nursing students), the feeling of ingroup belonging bolsters their attitude towards a practice that may enhance the status and the value of the ingroup. For high-status group members (i.e. medicine students), in contrast, the same feeling of ingroup commitment has a negative effect on their attitude towards collaboration with the low-status group of nursing students. In this case, we can suppose that some contextual variables, such

as commitment with the care unit, can positively influence attitudes about collaboration, as some research on practitioners have shown (Caricati et al., 2015; 2016).

The present results also indicate that the extent to which students enter into contact with students from other disciplines has no effect on their attitude towards inter-professional education. This evidence is unsupportive for intergroup contact theory (Allport 1954) since the students' attitudes towards IPE seem to be unrelated to the hours they spent in practical training that is characterised by continuous interprofessional contact. In general terms, this evidence contradicts the idea that mere exposure to outgroup members would enhance the positive perception of that group, even when this exposure is related to common goals, co-operation, and the existing support of authorities and law. These results also suggest that it could be the case that practical trainings occur too late in the learning process. Students may enter job environment with already established professional stereotypes that may influence their interprofessional relations. Perhaps students should start to learn with students from other disciplines at the beginning of their formative process. In this case, the jigsaw teaching technique (e.g., Aronson, Blaney, Stephan, Sikes and Snapp 1978), in which a class is divided in subgroups composed by students from different disciplines who must co-operate in order to reach the final goal (i.e., recompose the puzzle), may be helpful as a way to improve students' attitude towards IPE and other professionals.

However, it is worth noting that an important aspect of intergroup contact is the valence of the intergroup contact (i.e. pleasant or unpleasant contact), which was not taken into account in the present work. Moreover, we did not consider the perception of the outgroup, but rather the attitude towards intergroup collaboration. Thus, we cannot exclude the possibility that intergroup contact may have changed intergroup perceptions, perhaps in a positive way, without enhancing the attitude towards inter-professional collaboration. Further research should investigate the effect of the quality of intergroup contact among healthcare students and the boundaries of contact effectiveness.

Limitations

Given the correlational nature of the present research, causal relationship between ingroup identification and students' attitudes towards IPE is questionable. Related to the previous point, we must recognise that the common method bias (Podsakoff, MacKenzie, Lee and Podsakoff 2003) may have affected the results. Moreover, students rather than professionals were analysed, and the present results may not be generalisable to seasoned practitioners. However, the strong theoretical anchorage of the hypotheses, the clear effect of moderation, and the consistency of results with results from studies on professionals seems to mitigate these problems, sustaining the robustness and generalisability of the present results.

Conclusion

The present research has some important theoretical and applicative implications. From a theoretical point of view, the results sustain the idea that intergroup processes related to SIT are important aspects also in the kind of complex and particular settings that healthcare organizations represent (e.g. Bartunek 2011; Caricati et al. 2015; 2016). Accordingly, the relationship between nurses and physicians and between nursing and medical students can be framed as a "genuine" intergroup context in which professional identification can produce conflict or cooperation depending on the status of the considered groups. Linked to this aspect, the present research suggests that in order to improve inter-professional collaboration and manage inter-professional conflict, it is important to acknowledge that professionals occupy a different position in the professional hierarchy and that cooperation and collaboration may activate intergroup processes which can hinder, more than enhance, positive inter-professional relationships.

Ethical approval: "All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards."

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Table 1. Means, standard deviations and zero-order correlations among considered variables depending on course.

	Medicine students		Nursing students			Correlations		
	M	*SD*	*M*	*SD*	*F*(1,349)	1.	2.	3.
1.RIPLS	3.80	0.82	4.09	0.63	14.18**	-	-.15^	-.03
2.Professional identification	4.37	0.53	4.11	0.80	12.27**	.16*	-	-.05
3.Hours of training	97.16	236.97	624.02	535.34	121.77**	.01	.09	-

^ *p* = .06; * *p* < .05. For correlations: entries above the diagonal refers to medicine students (N = 143) and entries below the diagonal refers to nursing students (N = 205).

Table 2. Results from regression model on RIPLS

	B	SE	t
Intercept	4.16	0.06	70.93**
Course (0 = nursing students)	-0.26	0.11	-2.28*
Professional identification	0.13	0.06	2.04*
Hours of training	0.00	0.00	-0.08
Sex (0 = female)	-0.17	0.08	-2.08*
Courses X professional identification	-0.39	0.13	-3.02**
Courses X hours of training	0.00	0.00	-0.29

Unstandardized coefficients are reported.

* $p < .05$, ** $p < .01$

Figure captions

Figure 1. Interaction between course and professional identification on attitude toward IPE

Figure 1.