

Ambivalent stereotypes of nurses and physicians: impact on students' attitude toward interprofessional education

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Abstract. *Background and aim of the work.* Nurse-physician stereotypes have been proposed as a factor hindering interprofessional collaboration among practitioners and interprofessional learning among nursing and medical students. Using socio-psychological theories about ambivalent stereotypes, the present work aimed to analyse: a) the content of nurse and physician stereotypes held by nursing and medical students and b) the role of auto-stereotype on students' attitude toward interprofessional education (IPE). *Methods.* A cross-sectional on-line survey was adopted and a questionnaire was emailed to 205 nursing students and 151 medical students attending an Italian university. *Results.* Nursing and medical students shared the stereotypical belief that nurses are warmer but less competent than physicians. Nurses and physicians were basically depicted with ambivalent stereotypes: nurses were seen as communal, socially competent and caring but less competent, not agentic and less autonomous, while physicians were seen as agentic, competent and autonomous, but less communal, less collectivist and less socially competent. Moreover, a professional stereotypical image impacted the students' attitude toward IPE. More precisely, when nurses and physicians were seen with classic ambivalent stereotypes, both nursing and medical students were less favourable towards interprofessional education programmes. *Conclusions.* The content of professional stereotypes of healthcare students was still linked to classical views of nurses as caring and physicians as curing. This seemed to limit students' attitude and intention to be engaged in IPE.

Key words: professional stereotypes, interprofessional education, nurse-physician collaboration, nursing and medical students

Introduction

Stereotypes can be defined as simplified images of the characteristics of a group and its members. Nurses and physicians hold stereotypes about their own profession and the other's profession. Accordingly, since the seminal work by Carpenter (1), research has shown that nurses are seen, and see themselves, as having more warmth, being more caring and communal, while physicians are seen, and see themselves, as more skilled, individualistic and agentic (2-4).

The difference in stereotypes of nurses and physicians has been advocated as evidence of prejudice

against nurses favouring physicians, since this kind of stereotype partially neglects competence and autonomy of nurses (5). Stereotyping was also particularly evident in undergraduate students who appeared to endorse traditional stereotype of nurses as more caring and physicians as more competent and leadership-oriented (1, 2-4).

Accordingly, in trying to eliminate this prejudice, many efforts have been made to implement interprofessional educational (IPE) programmes aimed at weakening students' stereotypes of professionals and to reduce the difference among perceived professionals' characteristics (2-4). Albeit some research high-

lighted that students' stereotyped view of professionals was reduced after IPE programmes, nurses and physicians were still targeted with different stereotypes and believed to be differently competent and autonomous. Some research has been done on interprofessional stereotyping, but little is still known about: a) the content of nurses' and physicians' stereotypes endorsed by students and b) the role of auto-stereotype on students' attitude towards IPE.

Ambivalence of stereotypes

Most research in the field of nurse-physician relations have highlighted that nurses are generally targeted with 'less positive' stereotypes (i.e. communal and caring) than physicians (i.e. competent and agentic). These differences can also lead to high interprofessional conflict and low job satisfaction (6, 7). One criticism that can be raised against this view is that these stereotypes do not actually fall into positive or negative domains, but rather in the domains of status and power between nurses and physicians. Several psycho-social studies have indeed shown that stereotypes of groups are seldom polarised, tending instead to be ambivalent (8, 9). Indeed, many groups are targeted with some negative attributes (e.g. lazy) but also with some positive attributes (e.g. pleasant). According with the Stereotype Content Model (SCM), stereotypes are neither univalent nor one-dimensional. The SCM (8, 9) proposes in fact two core and orthogonal dimensions of general stereotype content: warm (e.g. friendly, good-natured, secure and warm) and competence (capable, confident, and skilful). According to this theoretical model, every group is targeted with different stereotypes depending by the relation with other groups and by the group status. Thus, a group is perceived as warm if it does not compete for resources with the in-group. The competence of a group is defined, instead, by the status of that group: high-status groups are perceived as more competent than low-status groups. Thus, high-competence vs. low competence and high warmth vs. low warmth dimensions form a bi-dimensional space in which it is possible to detect four types of stereotypes resulting from combinations of perceived warmth and competence. Two types of stereotypes are ambivalent: high competence and low warmth and high warmth and low competence. The remaining types of stereotypes are univalent: high competence and

high warmth (completely positive stereotypes) and low competence and low warmth (completely negative stereotype). According to the SCM, stereotypes are usually complementary: a great deal of research has shown, indeed, that many groups are targeted with ambivalent more than univalent stereotypes (8, 9). For example, Blacks, Latinos and the poor are perceived as less intelligent and lazy, but also as more happy and communal (10, 11). Moreover, women are perceived as less competent but more nurturing and socially-competent than men (11).

Consequences of stereotypes

Stereotypes are particularly important because, according to SCM, the way in which a group is portrayed determines the way in which members will behave with other groups and how other groups behave with that group (8, 12). As social psychology research has shown, stereotypes are more than a list of adjectives of a group; stereotypes also contain an explanation of the motive for why this group has these characteristics and the expectation about the behaviour of members of that group, especially when groups have different statuses (12) and when there are more than two groups (13). The perception of the in-group and out-group as competent and/or warm determines, in fact, the kind of intergroup behaviours that will be more likely activated. Thus, if members perceive the in-group as competent, they would limit the collaboration with out-group which is perceived as less competent (see the BIAS map in 12). In this case, 'passive harm' behaviour is predicted in which more competent groups would limit interaction with less competent out-groups (e.g. neglecting). In the same way, if members believe that the in-group is less competent than another group, it is unlikely they would question the superiority of the out-group and more likely that they would behave in a subordinate way. The SCM model predicts, in this case, that subordinate groups will show the so-called passive facilitation behaviour, that is 'accepts obligatory association or convenient cooperation with a target' (8, p. 109).

The consequences of an ambivalent view of groups (i.e. competent but not warm) may be that differences between these groups became acceptable and then justified and maintained by members of both groups. Tajfel (14) had already stated that social stereotypes help

people to justify the existing social differences between groups. Accordingly, as SCM scholars argued, ambivalent stereotypes help people to rationalise and accept the current status quo. In other words, members who believe that their low status in-group is less competent but more warm than another high status out-group can balance negative and positive in-group traits and then actively accept their disadvantaged position. For example, it has been shown that people exposed to ambivalent stereotypes such as 'poor but happy' or 'rich but dishonest' are more supportive of the status quo than people exposed to non-ambivalent stereotypes (11, 15). Ambivalent stereotypes and their effect on intergroup relations are particularly important for nurse-physician relations especially for nursing and medical students (16). In the case of health professions and students, ambivalence of stereotypes means that each professional group is believed to have some set of strengths that balances its weaknesses making interprofessional differences highly acceptable to nurses as well as physicians. In this way, nurses and physicians as well as nursing and medical students may perceive the difference between professions as justified and then they may be prevented from requesting modification such as improving interprofessional collaboration of IPE.

An especially important outcome for healthcare educational programmes is the students' attitudes toward interprofessional learning and practice (17-19). Indeed, many scholars have argued that interprofessional work (i.e. effective collaboration between different professionals) is a core target to meet in order to improve the efficacy of health care delivery (20-24). Unfortunately, professionals are usually socialised only after they have concluded their education and they have entered hospitals. This lack of interprofessional socialisation may contribute to maintaining nurse-physician conflict and hinder nurse-physician collaboration (25). Thus, it is important that healthcare students are willing to engage in IPE programmes (3) aiming to increase interprofessional understanding and knowledge (25, 27). As several studies have shown, stereotypes affect the extent to which both nurses and physicians collaborate and behave with each other and the way in which students are inclined to engage in IPE (28). IPE can be seen as an education which challenges traditional boundaries between nurses and physicians, trying to overcome in-

terprofessional differences and favouring effective collaborative learning and practice. In this sense, IPE requires a change in the traditional hierarchical image of nurse-physician relations toward a horizontal and equal professional relation. Nevertheless no studies have been conducted on the effects that stereotyping and auto-stereotyping have on students' attitude towards IPE.

The present work

In order to increase knowledge about the content of stereotypes of nurses and physicians and the effect of auto-stereotyping on students' attitude toward IPE, the aim of the present work was twofold. Firstly, the present study aimed to analyse the content of stereotypes, in terms of warmth and competence, that nursing and medical students endorse about both their and the other's future professional groups. Secondly, the present work aimed to investigate the effect of auto-stereotypes on the students' attitude toward IPE.

Concerning the first aim, based on the SCM, we expected that both nursing and medical students would share the stereotypical view of nurses as warm and physicians as competent. For auto-stereotyping, it was expected that (hypothesis 1) nursing students would rate nurses as more warm and less competent than physicians, while medical students would rate physicians as more competent and less warm (hypothesis 2). Regarding out-group stereotyping (hetero-stereotyping) it was expected that nursing students would rate physicians as more competent and less warm (hypothesis 3), while medical students would rate nurses as more warm and less competent (hypothesis 4).

The last set of hypotheses concerns the relation between auto-stereotypes and attitude toward IPE. Given that IPE challenges traditional professional stereotypes, it was expected that the kind of stereotypes nursing and medical students endorse about their future professional group would be linked to their willingness to attend or request IPE. More precisely, it was expected that nursing students who believe that nurses are high in warmth but low in competence (i.e. traditional ambivalent stereotype) would also agree with a traditional education in which nursing and medical students are educated separately. In other words, nursing students who endorse classical ambivalent stereotype about their future profession would be less orient-

ed to IPE programmes (hypothesis 5). On the contrary, nursing students perceiving nurses as both warm and competent would be more oriented to challenge the traditional nurse-physician relation requesting more equal treatment and thus they should be positively oriented toward IPE programmes (hypothesis 6).

Similar expectations can be drawn for medical students. In this case, students endorsing traditional ambivalent stereotype about physicians (i.e. highly competent but less warm) would be more oriented to also endorse the actual professional difference and then to be less favourable toward IPE (hypothesis 7). The same results may be expected when medical students believe that physicians are both competent and warm. In this case, indeed, they would have a completely positive image of physicians as both competent and communal, and able to supply efficacious care/cure; thus they have no motive to request IPE. On the contrary, medical students holding counter-stereotypical image of physicians (i.e. more warm but less competent) would be more oriented to disagree with the traditional nurse-physician job relationship and to share learning with nursing students; thus, they should be more favourable toward IPE (hypothesis 8).

Method

Participants

Three hundred and fifty-six students were enrolled in this research. 205 (57.6%) were nursing students, while 151 (42.45) were medical students. 227 (63.8%) students were women and the mean age of the sample was 23.20 years ($SD = 4.25$, range = 18-46). 98 students (28%) were in their first year, 75 (21%) the second year, 129 (36%) the third year while the remaining 15% of students were in their fourth, fifth and sixth year. Women were more frequent among nursing students (70%) than among medical students (55%, $\chi^2(1) = 8.78$, $p = 0.003$). Finally, nursing and medical students had similar ages ($t(354) = 0.648$, $p = 0.52$).

Procedure

Students were contacted by institutional mail and invited to participate in an on-line survey about the image of health professions. It was stressed that partic-

ipation was voluntary with no reward. Moreover, it was stressed that participants could leave the questionnaire at any time and that collected data would be completely anonymous and used for research purposes only.

Measures

The on-line survey contained several measures aiming to measure different constructs.

Professional stereotypes were measured with seven adjectives taken from the Student Stereotypes Rating Questionnaire (SSRQ) (3, 29). Three adjectives were agentic ('leadership', 'decision-making' and 'being an independent worker') and four were communal ('interpersonal skills', 'being a team player', 'collaborative' and 'sharing information'). Participants were asked to rate both nurses and physicians on each of the seven adjectives using a 5-point Likert-type scale (1 = very low, 5 = very much). Confirmative factor analysis with robust standard estimation confirmed the expected 4-factor solution, $\chi^2(71) = 142.93$, $p < .001$, CFI = 0.956, TLI = 0.944, RMSEA = 0.054, 90%CI = 0.042-0.066, $p = 0.29$, SRMR = 0.043, and that each item was significantly measured by the intended dimension ($ps < 0.001$). Thus, 4 scores were computed: nurses' agency ($\alpha = .79$), nurses' communality ($\alpha = .83$), physicians' agency ($\alpha = .70$), and physicians' communality ($\alpha = .85$).

Attitude toward interprofessional education was measured with ten items from the Readiness for Interprofessional Learning Scale (RIPLS) (30). Items asked participants to express their attitude toward statements about interprofessional learning (i.e. 'Shared learning with other healthcare students will increase my ability to understand clinical problems', 'Shared learning will help me to understand my own limitations') on a 5-point Likert-type scale (1 = completely disagree, 5 = completely agree). The reliability of the scale was good (Cronbach's $\alpha = .92$) and the total score was computed as the mean of the item scores.

Results

Preliminary analysis

Table 1 shows descriptive statistics and correlations of the main variables. As one can see, agentic and communal ratings of the in-group were only

Table 1. Descriptive statistics and zero-order correlations of the measured variables

	Competence Ingroup	Warmth Ingroup	Competence Outgroup	Warmth Outgroup	RIPLS
Competence Ingroup	1.00	0.24**	-0.07	0.43**	-0.03
Warmth Ingroup		1.00	0.48**	-0.07	0.15*
Competence Outgroup			1.00	0.06	0.36**
Warmth Outgroup				1.00	0.02
RIPLS					1.00
M	3.97	3.85	3.77	3.19	3.85
SD	0.75	0.91	0.91	0.96	0.82

weakly correlated, while ratings of the out-group were not correlated. Therefore, the competence and warmth dimensions can be considered relatively independent, albeit related, dimensions.

Auto-stereotypes

In order to assess how nursing and medical students rated the future professional in-group (i.e. nurses and physicians), a multivariate analysis of variance (MANOVA) was performed with competence and warmth ratings of the in-group (auto-stereotypes) as dependent variables and the course attended (nursing vs. medicine) as the independent variable. Results yielded a significant multivariate effect (Wilks' $\lambda = 0.46, F(2,345) = 198.18, p < .001, \eta^2 = 0.54$). In accordance with hypotheses 1 and 2, nursing students evaluated the in-group (nurses) as more warm ($M = 4.25$)

than medical students evaluated physicians ($M = 3.30, F(1,346) = 126.13, p < .001, \eta^2 = 0.27$), while nursing students evaluated the in-group as less competent ($M = 3.73$) than medical students evaluated physicians ($M = 4.30, F(1,346) = 57.46, p < .001, \eta^2 = 0.14$, see the left side of Figure 1).

Out-group stereotypes

Analysing how nursing and medical students rated the out-group, a MANOVA was performed using competence and warmth ratings of the out-group as dependent variables. Results yielded a significant multivariate effect (Wilks' $\lambda = 0.45, F(2,345) = 207.96, p < .001, \eta^2 = 0.55$). In accordance with hypotheses, nurses were evaluated as more warm ($M = 3.77$) than physicians ($M = 2.80, F(1,346) = 116.56, p < .001, \eta^2 = 0.25$), while physicians were rated as more competent

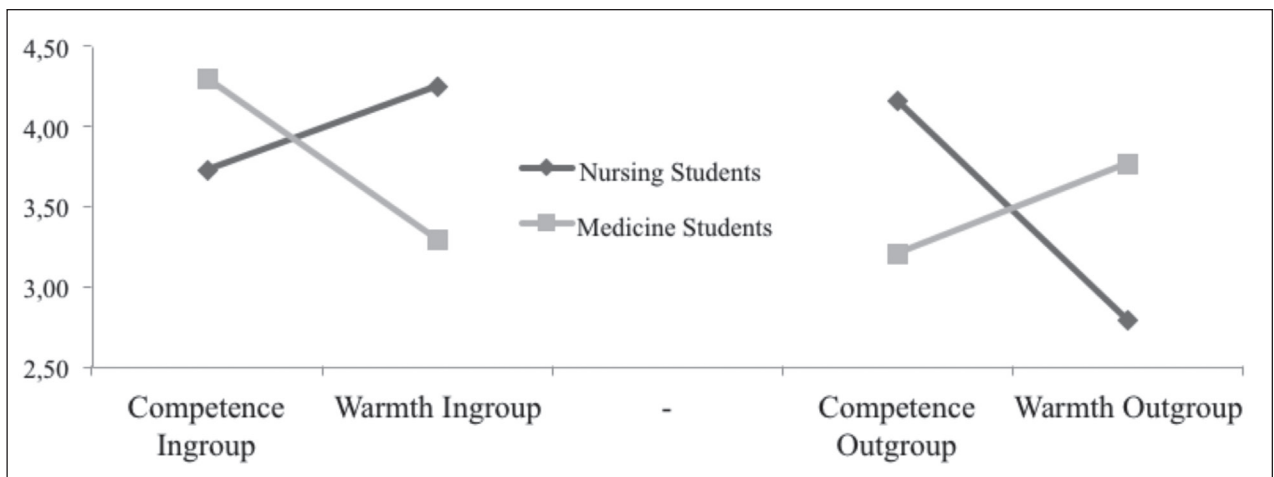


Figure 1. Ratings of ingroup and outgroup competence and warmth for nursing and medicine students

($M = 4.16$) than nurses ($M = 3.21$, $F(1,346) = 123.53$, $p < .001$, $\eta^2 = 0.26$, see right side of Figure 1).

Auto-stereotypes and RIPLS

In order to analyse the effect of auto-stereotypes on RIPLS of both nursing and medical students, a multiple regression analysis was performed on RIPLS score. More precisely, the predictors were competence and warmth in-group ratings, course (dummy coded, 0 = nursing students) and all interactions. Given that, as demonstrated above, students differed in the stereotypical ratings, warmth and competence scores were centred at the mean of each group, in order to avoid masking the course effect. Results are shown in Table 2.

As one can see, course had a significant effect indicating that medical students had less positive attitudes toward IPE than nursing students. As expected,

a significant interaction between perceived warmth and perceived competence appeared. In order to understand this interaction, scores of warmth and competence were plotted at one standard deviation above and below the grand mean (31). As illustrated in Figure 2, attitude toward IPE was more favourable when the in-group was perceived to be both warm and competent.

As expected, however, this effect was qualified by a significant 3-way interaction. As one can see in Figure 3, the previous trend was true for nursing students. More precisely, as expected by hypothesis 6, nursing students were more oriented toward IPE when they perceived the in-group as both warm and competent. It is worth noting that when nursing students perceived nurses as high on warmth but low on competence (i.e. traditional ambivalent stereotype), they were less oriented to IPE.

Table 2. Multiple regression analysis on RIPLS scores

	B	SE	t	β
Intercept	3.94	0.06	64.50**	
Course (0 = nursing)	-0.23	0.10	-2.38*	-0.14
Competence	0.11	0.10	1.67	0.10
Warmth	0.15	0.11	1.33	0.14
Course X Competence	-0.25	0.16	1.52	-0.12
Course X Warmth	-0.11	0.14	-0.76	-0.08
Competence X Warmth	0.20	0.08	2.41*	0.17
Course X Competence X Warmth	0.40	0.15	-2.72**	-0.19

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

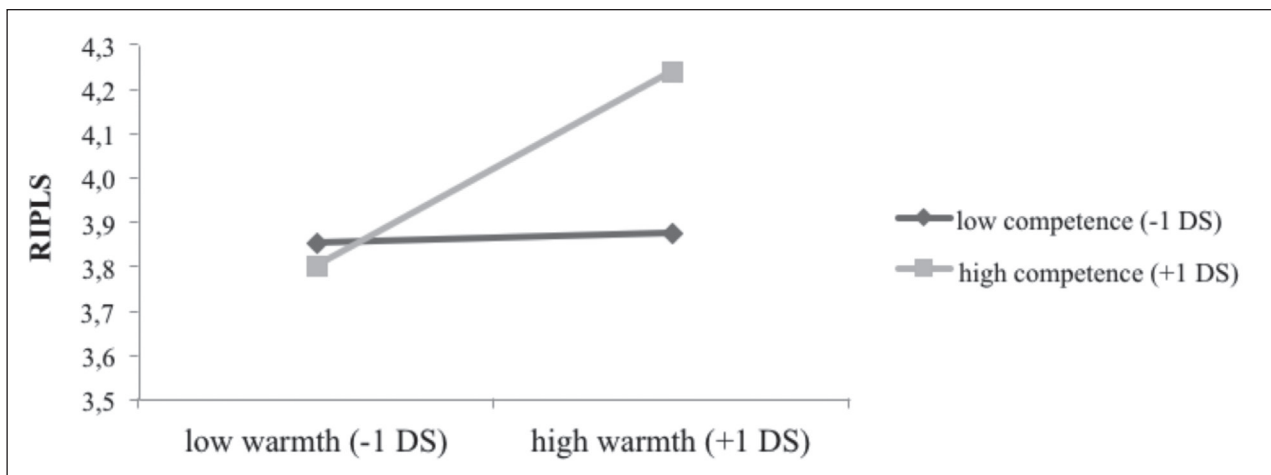


Figure 2. RIPLS scores at one standard deviation over and below the mean of competence and warmth of the ingroup

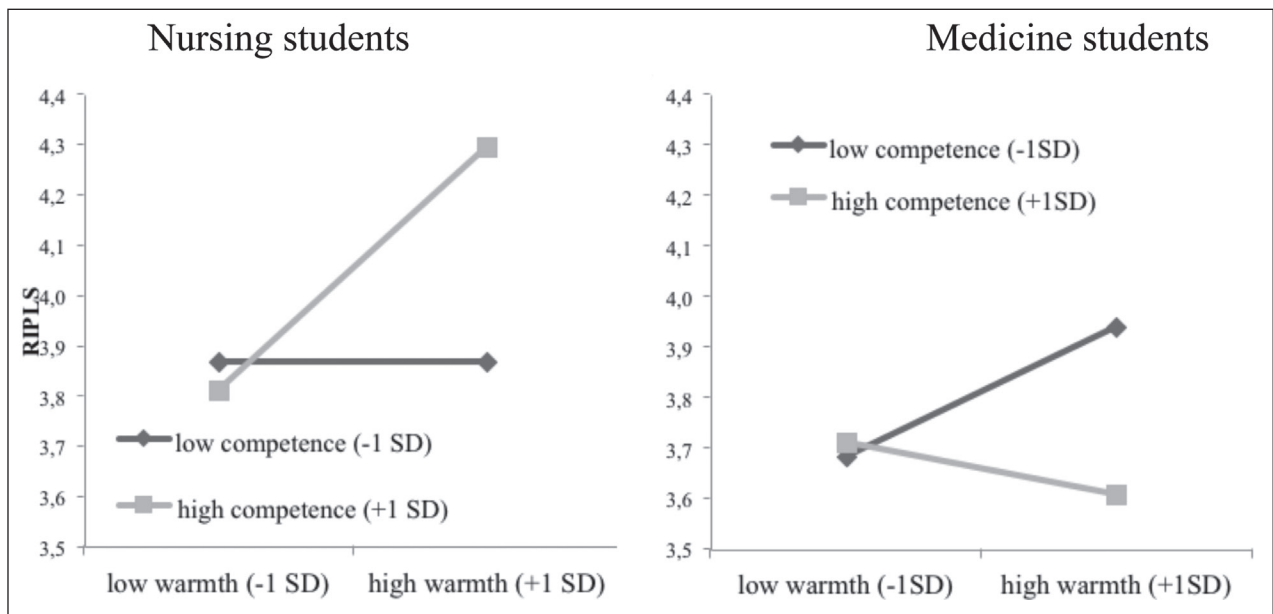


Figure 2. RIPLS score for nursing and medicine students depending on perceived warmth and competence of the ingroup

Medical students, instead, were more oriented to IPE when they perceived physicians as low on competence but high on warmth (i.e. counter-stereotypic ambivalence). Also in this case, when medical students perceived physicians as high on competence and low on warmth (i.e. traditional ambivalent stereotype), they were less oriented to IPE. Finally, it is worth noting that when physicians were perceived as both warm and competent, medical students showed a lower score on RIPLS.

Discussion

This work aimed to assess the content of stereotypes about nurses and physicians endorsed by nursing and medical students. Moreover, the present study investigated the role of auto-stereotyping of nursing and medical students on their attitudes toward IPE.

Results indicated that the content of stereotypes of nurses and physicians were congruent with the SCM (8) showing that nursing and medical students held similar images of nurses and physicians. More precisely, nurses were seen as warmer but less competent than physicians, and this stereotype was shared by both nursing and medical students. In other words,

nursing students' auto-stereotype roughly mirrored medical students' hetero-stereotype and vice versa. Thus, nurses and physicians were basically depicted with ambivalent stereotypes: nurses were seen as communal, socially competent and caring but less competent, not agentic and less autonomous, while physicians were seen as agentic, competent and autonomous, but less communal, less collectivist and less socially competent. These results are not surprising, given that they confirm several studies about stereotyping of health professions (1-3, 24). However, they also depict a non-encouraging picture as it highlights that nursing and medical students, after decades of policies and education programmes aiming to change nurse-physician relations, still endorse the traditional image of nurses and physicians. This result is not surprising for medical students, given that a stereotypical image of nursing as less competent maintains and bolsters physicians' dominance. However, for nursing students the present results are more worrying because nursing students seem to still hold an image of nurses as less autonomous and competent than physicians and, thus, relatively subordinate to physicians.

The present results also confirm that professional stereotypical perception was linked to the students' attitude toward IPE. More precisely, results indicate

that when nurses and physicians were seen with classic ambivalent stereotypes, both nursing and medical students were less favourable to IPE. This can be understood in view of IPE as an educational programme which challenges traditional interprofessional differences, seeking to overcome professional boundaries and make interprofessional relations more equal. Given that holding ambivalent stereotypes is a way to justify and rationalise actual group differences (8-12), 'nurses incompetent but warm' and 'physicians competent but cold' stereotypes help nursing and medical students to justify the current hierarchical structure and, then, to see traditional segregated education as right and just. Thus, when nursing students perceive that their future professional category will be characterised by low competence but more warmth, they have no motives for asking about different educational trainings. This may be interpreted as a form of false consciousness (8), in which relatively low status groups perceive their relative disadvantage as justified and, then, do not act to improve their social position (10).

On the contrary, results indicate that nursing students had more positive attitudes toward IPE when they perceived members of their future professional category as both warm and competent, that is with a positive polarised stereotype. This suggests that nursing students with positive auto-stereotypes about their future profession were also ready to engage in IPE. We can suppose that this occurs because they believe that the in-group is able to challenge the traditional image of nurses and be as competent as physicians. For medical students, however, results were different, albeit congruent with expectations. Indeed, in this case, endorsing positive polarised stereotypes of physicians had a negative impact on medical students' attitude toward IPE. This is interpretable considering that when medical students believe that members of their future professional category will be both warm and competent, they perceive the in-group as able to supply and manage complete and efficacious care and thus they may not see it as necessary to share education with the relatively low status group of nurses.

Medical students seem to have a better attitude toward IPE when they believe that physicians are less competent but more warm, i.e. when they held an ambivalent counter-stereotype of physicians. Also this re-

sult is congruent with the assumption that students are more oriented to IPE when they hold non-traditional views of professionals, a view that challenges existing beliefs about nurse-physician differences. Following SCM, we could speculate that medical students who see physicians as more warm than competent also see the group of physicians as not in competition with nurses, and then are able to engage in efficacious collaboration adopting a collaborative approach to care and cure of patients.

Conclusion

On the whole, results suggest that the warmth dimension is important for attitudes toward IPE. This is congruent with SCM's assumption that warmth refers to non-competitive intergroup relations. Accordingly, when nursing and medical students saw their in-group as not competing with the out-group (warmth), they were more favourable toward IPE. However, warmth was not enough since its effect was moderated by both the perception of in-group competence and the profession. More precisely, for nursing students a combination of high warmth and high competence (i.e. perceiving the in-group as non-competitive and high in status) improved attitudes toward IPE. For medical students, instead, the combination of high warmth and low competence (i.e. believing the in-group as non-competitive and relatively low in status) produced higher levels in favour of IPE. This suggests that IPE would be better attained when students already believe that nurses and physicians are similar in their professional characteristics. This may be somewhat problematic, given that this indicates that attitudes toward IPE are enhanced when some results that IPE would achieve have already been reached. In other words, these findings highlight that IPE programmes would be facilitated in order to make students more favourable toward IPE.

Undermining the prejudices about positive vs. negative characteristics of professionals might be a common goal of orders and professional bodies. Education programmes for doctors and nurses in secondary schools can be useful in order to highlight the respective roles and their complementarity.

Limitations

The present study has several limitations which deserve attention. The use of a cross-sectional design imposes caution about the relationship among variables since other causal models might explain the present findings. Furthermore, the use of self-report measures may influence results given common method variance and social desirability (32). Finally, warmth and competence dimensions were operationalised using adjectives relevant for the care/cure context and for interprofessional collaboration. However, it is impossible to verify that the same results would be obtained using different and more general adjectives. These limitations might reduce the generalizability of results, albeit the strong adherence to a theoretical framework and consistence of results may somewhat mitigate these shortcomings. Future research should use experimental designs manipulating content of stereotypes in order to analyse causal relation between warmth and competence and attitudes toward IPE.

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