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The Health Professions: developments in legislation and training, from student application to employment
The journey continues

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Here is the second special issue of the journal Acta BioMedica, dedicated to the health professions.

The publication of the first issue gave rise to diverse reactions - all positive - in the relevant circles. The main reaction, certainly a desired one, of the nursing profession was the wish to emulate their colleagues who have already published contributions. The possibility of having available a scientific journal indexed on international search engines, available online, read all over the world and quoted by many researchers, has constituted and continues to constitute a significant stimulus for them to publish the results of their own research. In the other health professions or those disciplines that collaborate with them, there has been a desire to seek interdisciplinary dialogue designed to enhance the themes of assistance with contributions coming from different schools of thought. It gives me pleasure to be able to relate that, as a consequence of the publication in the first issue of a contribution by a Senegalese researcher, he has had several offers of employment from local research structures.

Another significant sign of appreciation has been shown by those teaching in undergraduate and postgraduate degree courses for the health professions. As a result of the invitation in the editorial of the first issue to send to the journal contributions taken from undergraduate degree theses, conclusive papers from Master's Level I and II degrees or doctorate theses considered worthy of publication, numerous articles have appeared on the editor's desk, some of which are published in this issue.

A most welcome collaboration was that proposed by the national association of nurses specialising in the risk of infection (ANIPIO). Indeed, the journal sees collaboration with scientific societies of nurses and other health professionals as a possibility to communicate to the scientific world the results of studies that have always been conducted in the context of these organizations, but which are often not adequately aired. It is thus hoped that this collaboration will be followed by other similar ones and that it will soon be possible to publish the results of scientific conferences of numerous scientific societies.

In this issue ample space is given over to interprofessional relations. An initial contribution, by Tomelleri et al., illustrates the ways in which symbolic representations of reality can affect collaborative interactions in the current situation of social and economic change. Different approaches to collaborative interactions between health professionals are represented by three metaphors that illustrate open, plural and highly heterogeneous professional settings. A second contribution reports the results of a research study carried out during a doctorate course. Sollami et al. analyse the stereotypes relating to the nursing and medical professions, evaluating the influence in work relationships of the professionals of the two disciplines. An original point of view is taken into consideration in the study by the professionals undergoing training: the students of the degree courses in Nursing and in Medicine and Surgery.

The viewpoint of social psychology is expressed in the article by Mancini and Secchiaroli, which analyses the impact of lipodystrophy syndrome following antiretroviral therapy on the quality of life of HIV-positive patients. The impact is not only clinical, but also psychological and psychosocial. The article by Gonzi et al. also uses the instruments of social psychology to
investigate the relationship between training for basic life support defibrillation, motivation of professionals, perception of the ability to perform cardiopulmonary resuscitation, and quality of the same. The analysis was conducted on a large sample of professionals, by means of simulations.

In this issue of the journal, space is also dedicated to considerations on the changes in society. The contribution by Vesperoni and Masera tackles the theme of the integration of immigrant workers, focusing on nurses practicing in the Parma area. From the interviews, positive and negative aspects emerge that allow for consideration as to the role that can be played by foreign workers in our health organization.

The review by Foà et al. analyses the factors that influence the experience of myocardial infarction in female patients. It reveals gender differences in responses to symptoms, therapeutic compliance and willingness to change lifestyles. The review by Marletta et al. also reports the first results of a doctorate research study, and, starting from the hypothesis of contact expressed by Allport, tackles the theme of the role that encounters with professionals of different cultures can play in reducing prejudice against diversity in the nursing profession. A look is taken at the contributions from the literature that discuss the role of contact in the nursing-education setting, in the relationship among nurse practitioners, and between nurses and patients.

Particularly interesting is the contribution by Mastrillo, which concludes this issue of the journal. The author examines the development over the last few decades of the training procedures for the health professions, correlating the said evolution with the succession of new laws, with the role played by the professional colleges and the regional and ministerial watchdogs, and, finally, with the possibilities for employment for new graduates, which have fallen drastically in recent years.
The metaphors of collaboration, or the social construction of collaborative interactions between health professionals

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Abstract. This article illustrates the ways in which symbolic representations of reality, embodied in metaphors and language, can affect collaborative interactions in the current situation of social and economic change. We assume that corporate transformation and organizational configurations influence health professionals’ representations in largely unconscious ways and, with these, their everyday practice. On the basis of empirical data collected through 13 focus groups in an Italian hospital, our intention is to show the extent to which joint working can be linked to three main metaphors each matching specific forms of social and professional interaction. The three metaphors of collaboration constitute different attempts to interpret social and organizational changes in proactive - encouraging social innovation - or defensive terms - as actions of cultural resistance. The three metaphors are: apparatus, family and team. In different ways, the first two represent forms of resistance to change and are widely present within organizations. The latter, on the other hand, consists of a proactive way to deal with ongoing social and organizational change. This metaphor testifies to the existence of a different approach to collaborative interactions, a perspective related to specific combinations of organizational and professional characteristics. This study indicates that organizational change and collaboration can be strengthened by metaphors that illustrate open, plural and highly heterogeneous professional settings.

Key words: inter-professional relations; collaborative practice; metaphors; qualitative research; organizational innovation

In search of organizational metaphors

Inter-professional relations has been analyzed from a range of scientific perspectives due to its impact on organizational efficacy and effectiveness. Management studies focusing mainly on structural aspects, economic incentives and flexible company designs have been shown to be the most effective strategies influencing collaborative attitude (1–3). From a different point of view, social and organizational psychology, looking at group attitudes and behaviors within workplaces, emphasizes the role played by the different forms of commitment and the positive effect of self-efficacy (4, 5). Adopting a multidisciplinary point of view, the “collaborative work” approach has emphasized the ways in which technological artifacts in workplaces act as mediators of social interaction that can be used for strengthening cooperative practice (6, 7). A fundamental contribution to this debate has been made by Richard Sennett who has devoted many years of study to collaboration and shown how this unique human behavior is powered by social rituals and practice filled with symbolic meaning (8).

This article intends to follow Sennett’s insights in exploring the symbolic and cultural dimension of inter-professional collaboration, and, more specifically, it will focus on its metaphors.

The decision to study organizational metaphors derives from the theoretical and methodological assumption that, as Barnett Pearce (9) have argued, com-
munication is not only the interface, or the medium, through which social interaction happens. Communication is also the setting, or contest, through which social interactions are conceived and become actual behaviors and practice.

From this point of view, metaphors are not just combinations of images, metonymies, similes and other rhetorical figures of speech used to embellish language but, on the contrary, they are tools which forge social relationships with the outside world. According to Lakoff and Johnson (10), metaphors generate consistency between the inner world of individuals, their intimate and private emotions, and the social world at the micro, meso and macro levels.

The metaphors, via which we see and read situations, influence our behaviour and in turn become social actions with prescriptive values (11). What metaphors are then? They are chains of meanings that make up the syntactical-expressive possibilities of social actors. They are the range of expressive abilities of those who work in organizations and give value to daily practices (12). They are not restricted to moral imperatives (“the strength of the group”, “the importance of working together”, “the focus on goals”). These imperatives are certainly not irrelevant but they do not justify the complexity of the metaphors in use in social practice. In fact, they end up giving them a minor rhetorical function. As images in which symbolic meanings and social repertoires are concentrated, metaphors actually contribute to generating, maintaining and reproducing tangible interactive practices (13). The value of our actions does not only depend on declarations of intent, moral imperatives or practices but also and above all on the metaphors that unconsciously assign a sense of success or failure, approval or disapproval to the same practices (14). For each subject, the use of metaphors implies a socially shared way of thinking and perceiving actual situations and their power to bring about change in proactive or defensive terms. This derives precisely from their ability to contribute proactively to the daily practices we take an active part in (15): imagining our organization as machinery or brain or biological organism (11) contributes to defining the situation, and its analytical and decisional potential, according to Thomas’s well-known axiom which states that “if men define situations as real, they are real in their consequences” (16). The power of a social order depends on the ability of its subjects to control the way the situation is defined (17). In our research, we argue that the notion of metaphor is a basic explanatory principle, not only for the researchers, but also for social actors in general: a cognitive relational activity of a tangible, dynamic and creative nature, which is useful for giving meaning and direction to contingent events that are not immediately associated with routines, and for positioning social actors within an interaction (18).

In this article we have looked for collaboration metaphors which significantly describe, and at the same time help to build, the inter-professional relationships within a public healthcare institution at a time of radical organizational transformation.

**Study methodology**

This paper illustrates the results of an empirical study conducted in an Italian hospital from 2010 to 2012. The study investigated the symbolic components of inter-professional collaboration (for further details on the theory and methodologies of the research and its overall results, see Tomelleri, Artioli 2013 (18). In this paper we have reanalysed the empirical basis of the research (which was made up of 13 focus groups) in order to identify the main metaphors of collaboration and analyse their links to the social and organizational changes under way in healthcare organizations.

In processing this re-examination of the empirical materials, we attempted to bring out these images and identify the most significant in terms of collaborative interactions. To this end we employed the grounded analysis method which included the various stages of coding and sorting the emerging images (19) until the three discussed here were identified: apparatus, family and team.

These three metaphors have been identified as macro-categories encompassing clusters of the images which emerged in the narrative data. This empirical material was gathered using both the stimuli provided by the moderation protocol and free dialogue between focus groups participants.

The empirical field consists of an Italian University Hospital, which is a health structure of large dimensions as the figures show: 3,800 employees, 1,233
The metaphors of collaboration, or the social construction of collaborative interactions between health professionals

beds, approximately 52,800 admissions annually and over 92,500 cases at Accident and Emergency wards.

A number of significant organizational changes have affected the hospital since 2000. These have led to a different organizational structure and a new general organization of the care process following the model “for intensity of care” (20). These changes are bringing in new organizational units and workflow configurations and they are inevitably influencing inter-professional routines and established practices, opening up new social interaction scenarios.

The study involved the creation of 13 focus groups whose members belong to 11 integrated activity wards: Cardio-Nephro-Pulmonary (CNP), Surgical (S), Accident and Emergency (A&E), Geriatric-Rehabilitative (GR), Maternity and Neonatal (MN), Neuroscience (NS), Oncology-Haematological-Internal medicine (OEI), Pathology and Laboratory Medicine (PLM), Multi-Speciality Medicine (MSM), Radiology and Diagnostic Imaging (RDI), Head-Neck (HN). In the Cardio-Nephro-Pulmonary and Surgical wards two meetings were held. 109 professionals took part in the study from a range of professional categories. Table 1 summarizes the professional profiles of the participants and divides them into gender groups. The focus groups were made up of various professional categories: doctors, nurses, nursing coordinators and lab and radiology technicians. Thus, the composition of each meeting was heterogeneous in terms of professional status and ward. This methodological choice reflects our aim to simulate the relational dynamics that participants experience in their daily working lives. This heterogeneity mirrors the status differences and power asymmetries that are a feature of healthcare organizations (21). Conscious of the effects that such asymmetries might have on focus group interactive dynamics (19), top managers (ward or unit heads) were excluded and the moderation protocol set up measures for stimulating the participation of all professional categories in meetings. More in detail, the moderation protocol involved three stages. The first was dedicated to stimulating the participants’ more outward looking dimension and involved asking them to choose the image that best represented their idea of inter-professional relationships in their ward from those proposed by the researchers. The second focused on analysing criticisms encountered in daily practices which negatively impacted on relationships between professionals. The third looked at good practice, positive examples of inter-professional relationships which are effective in care practice. On average meetings lasted 55 minutes and were facilitated by a principal moderator, who gave participants suggestions and asked them questions according to the moderation protocol, and an observer, who was more interested in the interactive dynamics that stimulated the groups to begin discussions. The empirical data was elaborated in digital format and analysed using MAXQDA (22).

**The apparatus: “We went from hospital to corporation”**

The apparatus metaphor indicates hospital organization as a socio-technical architectural framework in which the symbolic mediation of communicative interaction is assigned primarily to a system of formal standards, coded procedures and impersonal regulations. It is the most generally used metaphor in the sample and there were no significant differences in its distribution over professional categories while it was particularly frequent in two wards: Maternity-Neonatal and Surgical. The common feature of these wards - helping to explain the popularity of this metaphor among the people working in them - is the high level

<table>
<thead>
<tr>
<th>Profession</th>
<th>Gender</th>
<th>Total - % f column</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory/radiology technician</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Doctor</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Nurse</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>Nursing Coordinator</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Other*</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>31</td>
</tr>
</tbody>
</table>

*Obstetrician, biologist, health and social care worker, physiotherapist, junior doctor.
of mechanization in operating procedures leading to a corporatization process.

The key points of this metaphor are: the disconnection between centre and periphery and between health-based and managerial-based knowledge, the breakaway of the technical-administrative system from the overall organizational ethos and, more generally, a deterioration in joint working practice.

Collaborative practice is penalised here by a widespread sense of resignation in the face of the power of the technical-administrative “machine” which is identified as the main cause of the deterioration in the quality of interaction between colleagues. In this sense, the metaphor is a fundamentally defensive one which is often accompanied by displays of personal unease and distrust in relation to the organization powered in particular by the communicative and cultural distance cited between the centre (i.e. top management) and the periphery (the operational units). This disconnection between the centre and the periphery also brings out existing conflicts between the two orders of knowledge – clinical and managerial knowhow - which have been called on to coexist in public health organizations since they were restructured into corporations (23, 24).

The apparatus provides the technical infrastructure for the realization and expression of both even though an unresolved tension exists between them (and the actual professionals embodying them) that can hinder collaborative practice. This communication difficulty between the clinical and administrative-managerial dimensions emerges clearly in the words of Mario, a doctor in the Multi-Speciality Medicine ward, who has been working at the hospital for 35 years:

We went from hospital to corporation. Not only in the sense of work reorganization, but also because over time it became clear that the objectives had shifted. By objectives I mean that the things we work for had radically changed. And it was a momentous change which wasn’t easy for everyone (MSM11, Mario, doctor).

This metaphor primarily refers to the adoption of organizational models inspired by private business models and appears to be linked to profound change in the raison d’être guiding the actions and behaviour of health professionals in caregiving contexts. It highlights the juxtaposition of two organizational objectives which are not always in perfect harmony: on one hand, traditional patient care and assistance values characteristic of public health institutions, and on the other, business objectives which are drawn up according to regional and national guidelines. Where the staff interviewed perceived a deviation between the objectives drawn up on the basis of budgetary constraints and real care practice needs, problematic tensions between the demands arising from two orders of distinct elements emerge. On one hand, financial management (inspired by business models) which imposes stringent quantitative goals (for example, patient’s timeframes or restriction for using specific equipments or medicines) and on the other, patients’ care needs which are not always seen as linked to the first order of elements. In the following extract, Francesca, a nurse with 20 years of service, “blames” Diagnostic-Related Groups (DRG) for discouraging the corporation from carrying out the primary task of the hospital, that is, the care of patients:

Coming from the “old guard”, what I have noticed is that the DRG is fundamental [...] therefore doctors and surgeons can only deal with illness. The earlier we operate, the better. It wasn’t like this before (S1, Francesca, nurse).

Although the principle of rationalization - on which the processes of practice corporatization and standardization are based - answers the need for cost containment and improved safety levels, the consequences for inter-professional relationships and daily behaviour may compromise the very objectives that the process is pursuing (15, 25). Paola, an anaesthetist in the Surgical ward, describes the way in which the development of the technical-administrative apparatus, by means of which the normalizing action of

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1 Financial management of the National Health System is based on a classification of Diagnosis-related Groups which encompass every treatment (diagnostic and therapeutic) linked to the specific health problem (corresponding to the diagnosis) concerned. The cost of each DRG is determined by the Ministry of Health, which gives the Regional Authorities the task of distributing funds to the local health authorities and hospitals in their area of competence.
the rationalization principle is primarily achieved, may lead to a reduced sense of responsibility and motivation:

I certainly believe that information and documentation and the statistics and conclusions following from them are fundamental to progress. However there is more to our work than this. At times I’m not saying we lose sight of the patient, but we may have to write something, produce a document or sign medical records [...] All these checklists that are heaped on to us in the operating department are in actual fact useful but one would be enough. We have the medical records, but the patient is identified 300 times. I know, it’s true, it’s for safety reasons. However, let’s give some credit to those working in the operating theatre. The people working there are responsible enough. We only need to identify the patient once (S1, Paola, doctor).

All this, as was demonstrated by a considerable chunk of the participants in the focus groups, is seen as “overburdening” work routines with commitments and paperwork, making them less and less manageable in accordance with the various professional agendas. The words of Giovanni, a doctor in the Maternity-Neonatal ward, at the hospital for over 30 years, describes the uninterrupted and chaotic flow of information and bureaucratic requirements which professionals feel subject to:

There are so many commitments that we didn’t even know we had the week before: a telephone call comes in, an email from the university, an email from the hospital. They come in all the time. We find out about many of these commitments only moments before and the organization is a bit like this, everything piles up (MC, Giovanni, doctor).

The apparatus metaphor amplifies the disconnection between bureaucracy and care practice increasing the daily fatigue involved in attempting to reconcile conflicting elements. Giovanni, an orthopaedic surgeon in the Surgical ward, expresses his experience of the bureaucratic layers of the organisation in this way:

What bothers me is the reason behind all this [fulfilling administrative requirements]. It’s the clinical reason for what we do that interests me, as a clinician. As far as bureaucratic motivations are concerned, the most frequent answer is: “because it is required by the Ministry”, “it is requested by the Regional Authority”. [...] And this is where we lose that mechanism of saying “yes, I’ll do it because I am convinced that it is useful”. However, if I am told “it is because authorisations (now we have accreditation, before it was authorisation) require it” (S2, Giovanni, doctor).

As it can be noted from the numerous extracts given, the Maternity-Neonatal and Surgical wards are those which feel the effects of the emergence of what sociologist Mauro Magatti (26) calls functionalized institutional fields, in which prevail expectations that individual actions and social interactions can be exclusively controlled by means of impersonal and prescriptive procedures to the greatest extent. These wards are more vulnerable to negative contact with the outside world (just think of the media outcry caused by cases of malpractice in these units) and more vulnerable inside the organisation to financial cuts (23).

In short, the apparatus metaphor encompasses experiences of daily frustration and fatigue caused by incessant needs to recreate normalizing expectations, typical of the managerial and administrative structures of health organizations, with the unpredictability of real care practice, which are resistant to attempts to control them according to abstract and formal principles. The gap between daily professional practices and the sense of collective action conveyed by the health policy agencies appears difficult to narrow within this metaphor. Actions are increasingly carried out on an individual basis, as an extreme form of resistance to a technological-administrative system that is perceived as oppressive and superfluous. This individual isolation inevitably leads to deterioration of collaborative interactions, which does not disappear from professionals approach to their work lives but becomes increasingly fragile, less frequent and ad hoc.

The family: “A family of lovers…”

The family metaphor is indicative of the greater level of social cohesion inside the operating units of the hospital. It is mainly used by nursing professions and laboratory technicians (in almost half the people in-
volved in the research) while it generally concerns one in three doctors. It involves more than half of the hospital wards and the following in particular: Multi-Specialist Medicine (MSM), Surgical (CH), Geriatric-rehabilitative (GR), Maternity-Neonatal (MN), Radiology and Diagnostic Imaging (RDI), Cardio-Nephro-Pulmonary (CNF), Neuroscience (NS), Accident and Emergency (A&E). The individuals sharing this image generally have a lengthy professional career behind them with an average of twenty years experience.

Professional interaction is envisaged as closely interwoven with personal interaction, and the emotional dimension of social relationships is seen as being inherent to the operating mechanism of the organization. This image of collaboration is generally resistant to organizational change and facilitates personal/professional interaction even in the face of criticisms of a structural and organizational type.

The most important features of this metaphor are: a tribal or clan type solidarity concept, a clear boundary between inside and outside, a primary focus on the emotional dimension, a feeling of nostalgia for the past.

The family concept echoes the Durkheim concept of “mechanical solidarity” characteristic of simple organizations in which the division of labour does not prevent professionals from mutually performing the same tasks, duties and activities and members feel part of a society with a strong community identity (27). In our case, these are operating units with a high level of operational uniformity in which, that is, each function and party has an identity and relative structural simplicity (roles, units, divisions, specializations). The notion of mechanical solidarity explains why this is a metaphor used primarily by the nursing professions which tend to develop a strong sense of social cohesion often fuelled by rivalry with the doctors (4, 21).

The clear boundary between inside and outside, according to the “them” and “us” dichotomy, is a second feature of the family metaphor. This boundary sanctions a maximum level of internal solidarity with those perceived as being members of one’s reference group whereas professional interaction with the outside is often condemned due to the prevalence of ethnocentric forms of relational coordination which tend to safeguard internal cohesion (24, 28).

A third aspect of the family metaphor concerns its primary focus on the emotional dimension and resistance to change. The solution to organizational problems is often looked for in personal motivation and individual personality. The future and change are envisaged as threats to the group which is seen as emotionally stable. Fear of change is combined with betrayal anxieties and anger towards those who contravene the rules and shared values.

As far as resistance to change and the emotional dimension is concerned, the testimony of a nurse, Luisa, who has worked in the hospital for 40 years is important. Luisa confesses that she is nostalgic for the past, when the family metaphor was widely shared and the main way of interpreting professional and interpersonal relationships. The “working” family was also the setting for open, trusting relationships in which shared values and group rituals created typically close and emotionally laden relationships. Luisa recounts:

I’d like to say that relationships, even society, changed first 30 years ago... Something has changed, now we are in a period in which we need to make an impression, show off, in which each of us think more about ourselves, are a bit more selfish. I remember that the nurses working here were once a family for me, a colleague made cheese with the leftover milk for us. That is, there was a good relationship between us, now these things are no longer, maybe I am disappointed, because I’m tired now, however relationships with colleagues… they see you as being old, I’m sorry to say it, but it’s the case, my colleagues no ... nothing is sincere anymore, you feel that nothing is sincere anymore. I’m speaking for myself, but... we passed from a family to something colder. For example, if someone is at home for a while and then comes back, “how are you?”... no one asks you that anymore (MSM, Luisa, nurse).

Luisa speaks of an idyllic past in which relationships were sincere and filled with mutual affection. After the first major change in her career the interpersonal relationship balance was disrupted. Professional relationships are no longer able to provide stability and are now seen as profoundly negative. Sara’s story shows this. After 20 years of service and various “let-downs”
she has reconsidered her relationships with colleagues, causing her great distress:

I worked for 15 years in the Pneumology ward and I considered it a family, then the first time they let me down I was very upset with certain people. Several colleagues behaved in a way I wouldn't have expected and I got depressed! (GR, Sara, nurse).

The family metaphor represents collaborative relationships as a search for stability and cohesion rather than change. A nurse at the hospital for 18 years, Simona's account also indicates that relationships are no longer seen as family-based after the first organizational changes:

My ward is no longer there, I work for... I don't know who. I work for everyone, but I no longer have this feeling of home. I remember that several years ago when I unlocked the door of a ward, I was opening my own front door. Not now, I no longer have that sensation (S2, Simona, nurse).

The primary focus on emotional life and resistance to change are the salient features of the family metaphor which most of all indicate a defensive approach to the organizational changes that, over the past 20 years, have profoundly transformed Italian healthcare scene.

This metaphor does not only evoke emotions such as fear, nostalgia for the past, a sense of disorientation or disillusionment with the new; it also expresses a strong sense of internal solidarity and cohesion well represented by the mother image in Paola's account of her work as a radiology technician-coordinator who has been supervisor for five years but has worked in the hospital for many years:

I feel very close to this family (Simpson family image) because in addition to having a relationship with the youngsters that work in the X-ray room – they are young – at times I also feel very much like a mother. Its not only that they argue with me, at times they come – I'm not saying to tell me their problems – but they come here, they sit down – there's a seat – they sit down and they chat to me and I feel very... we also argue sometimes which logically, I think, makes this pseudo family disappear, because then we're in conflict and everything breaks down, however in those moments of...I feel myself a bit like a mother to all those youngsters (RDI, Paola, Radiology Technician-Coordinator).

The reassuring and protective atmosphere within the group serves to mitigate the effects of discussions or arguments. However the most damaging rivalries and conflicts are generally projected outwards, as another laboratory technician, Susanna, tells us. Having worked in the hospital for 25 years, she describes a relationship of mutual trust within the department and rivalry with the outside world:

In the Virology ward our work is totally manual. Relationships between colleagues and supervisors are good and there is a great deal of collaboration. There are four technicians and two supervisors. We may discuss an error but we do not try to find a guilty party “it was you!” The first thing is to understand why it happened and how come. We have been together for many years, but there have also been a few staff changes, in managers, technicians. In short, it’s a small unit, outside we find ourselves in a situation that... However we also feel tensions inside. We also feel them inside and benefit from the fact that there’s none of that rivalry between us that I spoke of earlier [she refers to another participant].We don't argue about holidays, we come to an agreement. We haven't had big staff changes and I think this has helped a great deal. There’s collaboration. For example, I work part time, therefore I work up to a certain time, and my colleague takes over. There's mutual trust, we are perfectly in synch with one another (PLM, Susanna, laboratory technician).

The relationship of trust inside the ward assumes a certain intensity which Alberoni has defined as mutual love (29), a typical feature of situations with strong social cohesion. Giacomo, a 51-year-old doctor who has worked for nine years in the Multi-Speciality ward, describes a situation of falling in love, a family of lovers, in clear contrast to an earlier account by Luisa, a 59-year-old nurse who after leaving her first ward no longer found that family atmosphere:

We have been together for 9 years. At the beginning we felt like a family of lovers, now we carry on like... However, in our group, this feeling that the first thing is the result, which doesn't mean healing, but means do
it in a certain way, do all that is possible in the best way possible, has been embraced by everyone who is here to work (MSM, Giacomo, doctor).

The family metaphor sees the emotional dimension of social relationships as the primary focus. Mutual trust, a sense of protection and warmth, loyalty and openness: these are the sentiments behind the group’s strong social cohesion, a mechanical-type solidarity which projects conflicts outwards from social bonds that are recognized as family-based. Furthermore, each betrayal of this emotional pact is experienced with deep regret (24).

Long-term professional experience unites the various subjects, primarily the nursing staff, who use the family metaphor as an explanation for their organizational situations. The doctors seem to be less sensitive to this metaphor as a result of a tendency to develop intra-professional bonds of a more corporate type in which the emotional component is secondary (30).

Changes over the past few years are requiring health professionals to rethink their professions and their roles within the hospital (23) but the family metaphor tends to favour the emotional dimensions of social action over the rational and instrumental mechanisms at the heart of the decisional criteria of the hospital managerial class. This explains the nostalgia for the past, when corporatization and rationalization work processes within the hospital had not yet begun and staff on the wards were used to working together for long periods without turnover or temporary personnel.

The result is widespread relationship unease, projected above all to the outside of the reference group, as if the organization itself was becoming hostile to its occupants.

The family becomes a refuge, a place of resistance and defence in which relationships of trust are daily realities and contrast with the corporate context which is perceived as distant and external to the authenticity of the social bond.

The team: “This word keeps coming out… team”

The team metaphor represents a hospital organization made up of a range of subjects each of whom is dependent on the others in both coded and informal ways. Its occurrence in the sample was more limited than the previous metaphors, but it emerged in particular in the Cardio-Nephro-Pulmonary (CNP) and Radiology and Diagnostic Imaging (RDI) wards. Both wards are made up of strongly heterogeneous scientific and professional communities in which professionals belonging to various medical specialities and with different technical skills cohabit within the same organizational frame. The heterogeneity that fuels this metaphor is also present in other wards but in the two mentioned here it seems to have been increased by the reorganization of hospital wards which took place from 1999 onwards (bringing together different medico-scientific and professional cultures) and by the crucial role played by technology, unlike the other contexts in which it performs a mainly accessory function and does not mobilize specific interactive dynamics (31). The metaphor is also more commonly used among doctors than other professional figures.

The salient features of this metaphor are: a high level of interdependence between the various professional groups and organizational units, the acceptance of conflict as inherent to organizational life and, finally, a focus on problem solving.

The interactions that make up the complex hospital universe, filtered through this metaphor, involve significant levels of general conflict which tend, however, to be balanced by a sometimes resigned awareness of interdependence between parties. This metaphor recalls the Durkheim concept of “organic solidarity” characteristic of complex organizations in which the division of labour and social differentiation leads to the need to share individual and group resources in favour of collective survival (27). Frequent inter-professional comparison and the pooling of ward resources seem to stimulate relationship openness which may impact positively on the quality of collaborative interaction (4). It is interesting to note that even in these wards budgetary objectives are mainly assigned to the individual units that make up the wards, effectively placing the different units in direct competition. However, an image of the organization emerges from the team metaphor that crosses the boundaries of unit and role and places the solution to concrete problems at the centre of professional behaviour. This approach to problem solving is aimed not only at achieving organizational
The metaphors of collaboration, or the social construction of collaborative interactions between health professionals

objectives (which remain rarely shared by staff who are torn between the caregiving process and managerial objectives), but also at fulfilling the universal imperative of care inherent in the professional mandate of healthcare workers (21). The universal professional role component appears to prevail over the sense of belonging to the local context.

The team metaphor is defined in a simple but effective way by Michele, a doctor in the Radiology ward, who highlights the interdisciplinary quality and interdependence of the individuals involved in the therapeutic process:

It keeps coming up, this word... team. I think it’s a bit overused, even though ours is truly teamwork which includes the simultaneous involvement of at least three or four different types of role: physicians, doctors, radiotherapists, technicians. […] Team work is typical of our work, we are used to working in this way (RDI, Michele, doctor).

The idea behind the team metaphor is that coordinated action, in which each member performs his/her own task in an interdependent, efficient and effective way, can solve patient’s problems. This may seem a somewhat utopian representation, but this is how the professionals identify proper working in healthcare organizations, as the account of Simonetta, who has over 20 years’ experience, testifies:

At times a sick person comes to us on time, has his or her session, it is successful and then transport arrives on time. There’s an answer, we manage to solve the problem. Maybe it was a check-up chest X-ray, the patient is healthy, he’s well, it was nothing, or we decide to admit him to hospital because he has some illness, but everything runs smoothly (CNP, Simonetta, nurse).

Working in a team marks a change in the way professional behaviour is perceived passing from an individualistic vision to a group concept, from an egocentric interest to a collective focus which involves the most abstract levels of hospital organization. Luciano states:

Everyone was in it for himself, everyone was concerned with his own prowess, no-one was interested in anyone else… this was the sensation I was getting … compared to where I came from. In the past few years I must say that the situation has been turned around, there’s a willingness on everyone’s part to create this team I was speaking about earlier. I am definitely experiencing it, in my opinion it’s happening in our ward. I’m changing my views, it’s happening in our department (RDI, Luciano, doctor).

Working as a team is justified because of its focus on problem solving for the good of the patient, in the words of Ferdinando, a doctor in the Radiology ward in the hospital for 12 years:

I am a doctor and a manager: at the exact moment the patient is having an examination I have to issue a medical report. If I and my colleague do not work together, I’ll still sign the report, but it’s not me or you who loses out it’s the patient (RDI, Ferdinando, doctor).

Problem solving is represented as a method of inter-professional and interdepartmental working, which allows conflicts, seen as inherent to the organization, to be mediated in order to reach a common goal. Social interactions are thus arranged on the plane of situated action in which the various actors involved look for ways to align themselves to solve a specific problem regardless of their professional role and unit of origin (32). Monica, a physician from the Head-Neck ward, in service for approximately 15 years, tries to solve a problem by paying less attention to the latent conflict between objectives and new organizational structures and instead focusing on the task at hand:

Well then, does the test have to be delivered? Management has removed the team that brought in the results of urgent medical tests at certain times of the day. So what do I do? I go, even though by law I can’t leave the ward, but the health management has said I must do it. Then, what should I do? There are few instruments and so what should I do? Even though it’s not your job, you do it (TH, Monica, doctor).

The professional satisfaction levels of the people participating in team activities is important. Satisfaction arises from the realization that it is possible to
solve a difficult situation together. Pleasure in working together to reach a goal is a fundamental aspect of teamwork, as Angelo, working in the Cardio-Nephro-Pulmonary ward shows:

An important procedure was missing in our hospital. I went to train so that I could do it together with other professionals as an interdepartmental working group: radiologists, doctors, nurses and radiology technicians. We set up this procedure which is producing good results. We are carrying out a load of examinations and the entire hospital is sending them to us. Conflicts arose, that’s inevitable, because it’s a radiological procedure carried out by a doctor and a radiologist, who up had never been involved in it before. He realized that it was a necessary procedure because it was basically a radiological procedure. In short we managed to come to an agreement. We argued somewhat with another department, but we succeeded in setting up something truly useful, which satisfies everyone (CNP, Angelo, doctor).

The importance of the emotional dimension in collaborative behaviour also emerges in the words of Giuseppe, a doctor in the Multi-Specialty Medicine ward, who emphasises both the negative and positive aspects of the emotional experiences involved in creating a team spirit:

These things really do still work [working together], the ability to get excited when things go well; to get emotional in a negative sense when a mishap occurs; rush about when there’s a need; act like a team at a difficult time; move faster if necessary to solve a problem in a day and a half instead of a week (MSM, Giuseppe, doctor).

In the team metaphor, the level of communicative interaction within the department is high even though it does not reach the level of the family metaphor, while relationships with the outside flow better thanks to greater sharing of common objectives. This metaphor is not particularly widespread in the sample, but it testifies to a change in the way health professions are perceiving inter-professional relations and the presence of a different perspective. This metaphor opens up scenarios of transformation and evolution inside the organization, highlighting the existence of collaborative behaviour that is more effective in dealing with the challenges that the organizational changes in the health system are imposing on the care professions and services.

Conclusions

This article illustrates the ways in which symbolic representations of reality, embodied in metaphors and language, can affect the social and organizational changes currently underway in healthcare. The apparatus, the family, and the team metaphors highlight different ways in which social actors perceive and reproduce the healthcare scene and daily teamwork dynamics.

The apparatus metaphor views the hospital organization as a complex machine governed by impersonal rules and formalized, prescriptive instructions. This metaphor indicates high healthcare professionals’ expectations that social interaction could also be controlled by the same functional principles with a higher level of responsibility given to coded procedures. In general terms, this metaphor means: 1) low levels of collaborative interaction; 2) relationship difficulties within the organizational unit; 3) conflict with other organizational units. This is the most widespread metaphor in the sample and it particularly entrenched in the Maternity-Neonatal and Surgical wards which are characterized by highly mechanized routine activities and equally high collective expectations. This metaphor seems to accompany a regressive process of relationship isolation and lack of motivation on the part of the staff which impacts negatively on collaborative dynamics.

The family metaphor identifies a context involving significant levels of social cohesion often evoked in nostalgia for an idealized past in which professional interactions were profoundly interwoven with personal interactions and even emotional components were inherent to the organization’s working mechanisms. This scenario appears to be dominated by “mechanical solidarity” which links “inhabitants of the same organizational territory” thereby facilitating internal professional interactions even in the face of criticisms of a
structural and organizational nature to the detriment of general organizational aims.

The family metaphor indicates: 1) maximum levels of internal collaboration to anyone perceived as a member of one’s social group; 2) interaction with other parts of the organization are often viewed negatively; 3) relational isolation which tends to safeguard internal cohesion. This metaphor is more widely used among nursing staff, regardless of the department they come from. It is also marked out by a search for balance in an attempt to reproduce the conditions that make the existence of the family possible.

The team metaphor sees hospital organization as a heterogeneous blend of organizational and professional players who interact according to both formal and informal methods to make a success of daily problem solving. Social interaction is organised on the plane of situated action in which the various actors involved look for ways to align themselves to solve a specific problem regardless of their professional position and operating unit (32). A significant level of general conflict is noted, which however is balanced by a widespread sense of “organic solidarity” fuelled by a focus on daily problem solving. Levels of communicative interaction inside the unit are high although they do not reach the levels of the previous metaphor while relationships with the outside flow better thanks to more diffuse sharing of common objectives. This metaphor is not particularly widespread in the sample but it is evidence of a change in the way the health professions are perceiving inter-professional relations and the presence of a new and different perspective. The original aspect of this metaphor is seen as contrasting with the other more pervasive metaphors in our sample. It is mainly doctors and nurses with supervisory roles or tasks who report its existence. Belonging to a different ward also affects its distribution. In fact, it is most widespread in the Cardio-Nephro-Pulmonary wards, in which different professional communities and disciplines are required to cohabit, and Radio diagnostics, in which greater interactive complexity is brought into the collaborative dynamics of the symbolic and pragmatic mediation of technologies on which the activities of the different units are based (21). This metaphor opens up organisational transformations and evolution scenarios which seem to make dealing with the challenges imposed professions and services for reaching more effective standard. One of the challenges concerns inter-professional collaboration seen as an opportunity and not only, as in the previous metaphors, in the context of bureaucratic overload or family clan methods (15, 33, 34).

The study of the three metaphors gives us some useful pointers for understanding the collaboration in the organization. In the first place, it shows that the symbolic and narrative nature of such practices, often seen as the soft dimension of organization, impact on the success or otherwise of organizational change (11, 12). We have seen how the apparatus metaphor struggles to recognize collaborative interaction. This aspect may compromise the outcome of procedural changes that imply inter-professional work by obstructing their implementation with antagonisms and resentments (13).

Secondly, the emotional dimension and trust are confirmed as being behind collaborative behaviours (4, 8) but the metaphors also highlight their ambivalent nature. This ambivalence is explicit in the family metaphor: professionals who see themselves as a family may tend to isolate themselves within the unit. This view of trust in the organization is generally counterproductive to innovation and to collaboration between wards.

Finally, the team metaphor identifies the focus on problem solving as an opportunity for collaboration in which relationships with other professions are enhanced and supported pragmatically. The condition for inter-professional team work appears to be the development of heterogeneous, plural and goal oriented working groups in which working together is primarily a means to solve problems.

References


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 (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 interprofessional 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 participation 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 ($p < 0.001$). 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
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

| 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              | -0.07           | 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            |

**Figure 1.** Ratings of in-group and out-group competence and warmth for nursing and medicine students
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

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>(\beta)</th>
</tr>
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<tbody>
<tr>
<td>Intercept</td>
<td>3.94</td>
<td>0.06</td>
<td>64.50**</td>
<td>-0.14</td>
</tr>
<tr>
<td>Course (0 = nursing)</td>
<td>-0.23</td>
<td>0.10</td>
<td>-2.38*</td>
<td>0.10</td>
</tr>
<tr>
<td>Competence</td>
<td>0.11</td>
<td>0.10</td>
<td>1.67</td>
<td>0.14</td>
</tr>
<tr>
<td>Warmth</td>
<td>0.15</td>
<td>0.11</td>
<td>1.33</td>
<td>0.15</td>
</tr>
<tr>
<td>Course X Competence</td>
<td>-0.25</td>
<td>0.16</td>
<td>1.52</td>
<td>-0.12</td>
</tr>
<tr>
<td>Course X Warmth</td>
<td>-0.11</td>
<td>0.14</td>
<td>-0.76</td>
<td>-0.08</td>
</tr>
<tr>
<td>Competence X Warmth</td>
<td>0.20</td>
<td>0.08</td>
<td>2.41*</td>
<td>0.17</td>
</tr>
<tr>
<td>Course X Competence X Warmth</td>
<td>0.40</td>
<td>0.15</td>
<td>-2.72**</td>
<td>-0.19</td>
</tr>
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* \(p < .05\), ** \(p < .01\)

![Figure 2](image_url)

**Figure 2.** RIPLS scores at one standard deviation over and below the mean of competence and warmth 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 highlight 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 result 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.
Ambivalent stereotypes of nurses and physicians: impact on students’ attitude toward interprofessional education

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.

References


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Threats to identity: lipodystrophy and identity changes in people with HIV/AIDS (PWA)

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Abstract. Background and aim: PWA today have to face new problems associated with their disease state. One of these is tied to bodily changes that are related to HAART (lipodystrophy syndrome, LDS). Applying the Identity Process Theory (Breakwell, 1986), this research aimed to study the impact that LDS body changes may have on the identity of PWA. Method: One hundred and eight patients (79 M and 29 F, ranging from 35 to 75 years old) at a North Italian clinic completed a questionnaire composed of scales measuring the perception of threats to the identity of PWA, physicians’ and patients’ assessment of LDS, time from diagnosis, disclosure and perceived social support. Results: Results showed that lipodystrophy changes represent a new aspect of the disease that PWA need to handle in terms of identity: the changes resulted in ‘loss of the self’ and constituted a particular threat to the dimension of personal identity whereby bodily changes called more into question the principles of self-esteem and distinctness. LDS, however, lead to a multiple identity threat that is aggravated by patients’ perception of the severity of their bodily changes and by the perception of a lack of friendship and social support. Conclusions: The study highlights how complex, cyclical and dynamic are the effects that HIV status can have on the sick person: they are no longer only clinical, but also psychological and psychosocial.

Key words: identity process theory, threats to identity, body changes, people with HIV/AIDS (PWA), LDS

Introduction

The lipodystrophy syndrome (LDS) is characterised by abnormal or degenerative conditions of the body’s adipose tissue, together with metabolic disorders such as hyperlipidaemia and reduced insulin sensitivity. LDS is characterised in a dual mode: by sunken cheeks, thinning arms and legs (clinically defined by the term lipoatrophy), and by fat accumulations in the abdomen, in the jaw and in the back of the neck (‘buffalo hump’). Both of these modes may simultaneously occur in one individual (1) and are both connected to the regularity, continuity and duration of employment of constituent drugs of Highly Active Antiretroviral Therapy (HAART). It is, in fact, the administration of the drugs themselves that involves an increase in their toxicity (2-9). Although the pathogenesis of LDS is not yet fully understood, there is now sufficient evidence that LDS is a complication of HAART (10) that today gives people infected with HIV “the opportunity to see themselves as someone living with a chronic illness rather than someone dying from a terminal disease” (11, p. 72) and held optimistic views for their future (12).

From a psychological point of view the literature has highlighted the impact that changes related to LDS have on adherence to antiretroviral therapy (i.e. 5, 13); on the quality of life of PWA (14, 15); on their self-esteem caused by the perception of being recognisable by physical appearance as HIV-positive (16, 17) especially when changes affect the more visible parts of the body such as the face (18, 19); on social contacts, sexuality and everyday activities (20); on serious forms of psychological distress (10); and more generally on PWA physical, emotional and social well-being (21). Nevertheless, not
A specific literature interest was found about the impact that body changes related to HAART may have on the identity of PWA (22).

The majority of studies concerning identity changes in PWA were conducted prior to the introduction of HAART (23, 24, 25, among others); therefore, in the time when the majority of sick people quickly reached the terminal stage and were soon forced to face death. It is not surprising that these researches privileged the epigenetic model proposed by Erikson (26) predicting the development of identity as a succession of rigid stages. For example from that dominated by negative emotions related to the diagnosis of HIV to that of disillusionment with respect to own beliefs in terms of fighting the disease itself (27).

As is well known these models could not be more adequate to account for the changes in the identity of PWA who are now facing with a chronic disease characterized by an uncertain course, a prescribed treatment regimen, requirement for self-care, some degree of stigma, changes in roles and relationships, psychological distress, and also identity changes (11).

Because often clearly visible, bodily changes associated with HAART can trigger a disruptive break (28) in the PWA sense of identity that may result in a loss of self (29-31). They can cause stigmatisation (32) and discrimination (33, 34) that, in turn, influence reasons against HIV disclosure (35) that is one of the major barriers to social support from family and friends (36).

As AIDS has become a chronic disease, new theoretical models that would be able to take into account the cyclicality with which identity issues can re-emerge as a result of a change of therapy and/or with the emergence of side-effects, but also models able to detect the influence that clinical and social factors can have on determining the PWA identity restructuring processes, seem be necessary.

Although not applied to this area of research until now the Identity Process Theory (IPT; 37) seems us to meet these requirements. As is known the IPT focuses on three level of analyses: the structure of identity, the processes, and the principles that guided identity’s processes and changes of identity, that are continuity, distinctiveness, self-efficacy and self-esteem. It is to achieve or restore these principles that people activate coping strategies, aimed at restoring a balanced state of their identity. Identity that is constantly shaped and modified by the multiplicity of forces acting in people’s lifespan (social context of identity). Some of these identity changes can be expected, such as those that realize desired aspects of the self. Others may be perceived as a confirmation of identity. Others, again, are chosen or imposed, can threaten identity by questioning one or more of its principles. IPT made reference to possible forms of identity threat such as those which may arise from a state of unemployment or from atypical gender work (37) and, more recently, identity threats which may arise from being an ethnic minority (38) or from a risk perception (39). In this research IPT was used as theoretical model in order to analyse the identity restructuring processes of a group of Italian PWA suffering from LDS.

As shown by Figure 1, our research operationalize IPT through: the identity structure (decomposed in personal, interpersonal and social) and the identity principles (decomposed in continuity, distinctiveness, self-efficacy and self-esteem) that guided the processes and the changes of identity. The structure and the identity principles are collocated at the centre of the social context of identity (PWA lifespan, Lewin, 40), whose forces can threaten identity. The PWA lifespan is divided into three dimensions: physical, which concerns the diagnosed and perceived disease condition; temporal that refers to the clinical course of disease and to development of therapies used to combat HIV/AIDS (historical time); social, which refers to the socio-anagraphic and psychosocial characteristics of the participants. This model is used to reach the two aims of the research:

a) to determine whether the perception of bodily changes associated with LDS threatened the identity of PWA: more specifically which contents and principles of identity were most threatened by LDS;

b) to determine whether the PWA lifespan, operationalized though the intensity and kinds of bodily changes, the clinical course of patients’ disease and their socio-anagraphic (gender, qualification, sexual orientation) and psychosocial conditions (disclosure, social support), could predict the intensity with which a group of PWA treated with HAART and with LDS felt their identity to be threatened.
Methods

Participants and procedures

118 PWA were enrolled into the study. Participants were recruited through the Metabolic Clinic of a hospital of North Italy where all of them were patients: only 17 (14.4%) were new patients, with an average of four visits to the clinic. Participants filled in a questionnaire while waiting medical staff: 68 (57.6%) for a visit and 50 (42.4%) for specific treatments.

The Hospital’s Ethics Committee was informed of the research project before the study began; ethic approval was exempted for research projects not using invasive methodology. Participation in the study was voluntary and anonymous. Consent to participate was assumed on the basis of a returned questionnaire.

According to the medical evaluation, 10 (8.5%) of 118 patients did not show LDS. These cases were then excluded from the analysis.

Measures

A questionnaire consisting of six parts was administered.

Threats to Identity of PWA with LDS Questionnaire (TIPWALSD-Q). Inspired to the IPT (37) it was composed of 30 items that measured the intensity (1 = completely false for me to 6 = absolutely true for me) in which participants feel that their bodily changes threaten their identity. Each item was built to measure the principles of identity (continuity, distinctiveness, self-efficacy and self-esteem) that can be threatened within three kind of content of identity (personal, interpersonal and social); i.e. the item ‘These physical changes always make me feel too different from healthy people’ measures the perception of threat to the principle of distinctness concerning the personal dimension of identity; the item ‘If my body continues to change, my social life will deteriorate more and more’ measures the perception of threat to the principle of continuity concerning the interpersonal dimension of identity. Internal consistency (Alpha) calculated on items related to the threats to the three type of identity contents and to the four form of the identity principles were good, as was that of the overall total scale (table 3).

Physicians’ Assessment and Patients’ Perception of LDS. Taken from the one proposed by Carr and Law (41), the scale was used to measures the lifespan Physical dimension (see Fig 1). It consists of 13 items that described bodily changes associated with LDS: i.e. accumulation of fat in the abdomen, pubic sacral region, behind the neck (6 item: Lipodystrophy, L) and reduction of fat: i.e. in the buttocks, legs, arms (7 item: Lipoatrophy, La). Both patients (Perceived) and physicians (Diagnosed) are asked to express a quantitative assessment on a four-point scale (absent, mild, moderate, severe). The internal consistency of the four indexes were good (table 1). Student t paired samples showed that patients overestimated both kinds of bodily changes more than their doctors did ($t_{L} = -3.42, p = 0.001$; $t_{La} = -7.06, p = 0.000$).

Time from Diagnosis. This was detected through the year in which patients were diagnosed with HIV (Time dimension: Clinic). In order to detect the Historic Time Dimension, the participants were divided into two groups depending on whether the year of diagnosis they indicated was before (0 = pre-HAART = 79, 74.5%) or after (1 = post-HAART = 27, 25.5%) 1996.

Disclosure (D). Participants were asked to indicate (Yes, No) who (partner, parents, brothers/sisters, friends, boss, work colleagues, neighbours) had knowledge of their disease. The internal consistency was acceptable. Responses on the seven items (0 = No, 1 = Yes) were summed, with a higher score indicating higher disclosure. The average score was 2.54 (1.49) showed that a medium-low number of people had knowledge of participants’ disease.
Multidimensional Scale of Perceived Social Support (MSPSS, 42). The scale, adapted in Italy by Prezza and Principato (43), consisted of 12 items that explore the perception of the adequacy of the support that comes from three sources: family (4 item; e.g. My family really tries to help me), friends (4 item; e.g. I have friends with whom I can share my feelings) and a particularly significant person (4 item; e.g. There is a special person who cares about my feelings). For each statement the respondents indicated if they agreed or disagreed on a five-point scale. The MSPSS subscales demonstrated very good internal consistency (Table 1). A mean score of the items for each subscale was calculated. It ranged from one to five, with higher scores corresponding to a higher perception of support received from Family, Friends and Significant Others.

Socio-demographic characteristics. Gender, age, condition of employment, education, sexual orientation, presence/absence of a stable dating relationship have been revealed.

Sample characteristics

A total of 108 participants was considered for the analyses. They were 79 males and 29 females1. The average age ranged from 35 to 75 (M = 48.54 years, SD = 7.32); participants had been living with HIV for 16.97 (DS = 5.76) years on average. The sample was heterogeneous in sexual orientation, in dating status relations, in educational qualifications, and in employment (Table 2).

Data analysis

The statistical analyses was completed in two steps corresponding to the two research aims.

In the Step 1, descriptive and correlation analyses were performed to examine the PWA perception of threats to identity caused by bodily changes. Multidimensional scaling (MDS) was then used in order to reproduce a 'cognitive map' of the threats to identity (44).

In the Step 2, a Person correlation analysis has been conducted in order to demonstrate which lifespan variables of the research model (see Figure 1) were significantly correlated with the threats to identity.

### Table 1. Mean with Range, Standard Deviation and Cronbach’s Alpha of the Lifespan Variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>N item</th>
<th>α/r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipoatrophy: Medical staff assessment (LaM)</td>
<td>108</td>
<td>0-4</td>
<td>1.41</td>
<td>0.65</td>
<td>7</td>
<td>.80</td>
</tr>
<tr>
<td>Lipodystrophy: Medical staff assessment (LM)</td>
<td>108</td>
<td>0-4</td>
<td>0.28</td>
<td>0.36</td>
<td>6</td>
<td>.60</td>
</tr>
<tr>
<td>Lipoatrophy: Patients’ assessment (LaP)</td>
<td>108</td>
<td>0-4</td>
<td>1.70</td>
<td>0.88</td>
<td>7</td>
<td>.89</td>
</tr>
<tr>
<td>Lipodystrophy: Patients’ assessment (LP)</td>
<td>108</td>
<td>0-4</td>
<td>0.69</td>
<td>0.64</td>
<td>6</td>
<td>.73</td>
</tr>
<tr>
<td>Years from diagnosis</td>
<td>106</td>
<td>0-26</td>
<td>16.97</td>
<td>5.76</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Disclosure (D)</td>
<td>108</td>
<td>0-7</td>
<td>2.54</td>
<td>1.49</td>
<td>7</td>
<td>.54</td>
</tr>
<tr>
<td>Family support (MPSS-Fa)</td>
<td>108</td>
<td>1-5</td>
<td>2.94</td>
<td>1.40</td>
<td>4</td>
<td>.92</td>
</tr>
<tr>
<td>Friends support (MPSS-Fr)</td>
<td>108</td>
<td>1-5</td>
<td>3.42</td>
<td>1.41</td>
<td>4</td>
<td>.92</td>
</tr>
<tr>
<td>Significant other support (MPSS-So)</td>
<td>108</td>
<td>1-5</td>
<td>3.76</td>
<td>1.34</td>
<td>4</td>
<td>.91</td>
</tr>
</tbody>
</table>

1The imbalance between males and females reflects the distribution of people referred to the clinic where the research was carried out.

### Table 2. Participants characteristics (N. 108)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Categories</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>79</td>
<td>73.1</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>29</td>
<td>26.9</td>
</tr>
<tr>
<td>Qualification</td>
<td>Low</td>
<td>42</td>
<td>38.9</td>
</tr>
<tr>
<td></td>
<td>Medium/High</td>
<td>66</td>
<td>61.1</td>
</tr>
<tr>
<td>Condition of employment</td>
<td>Had a job</td>
<td>77</td>
<td>71.3</td>
</tr>
<tr>
<td></td>
<td>Did not work</td>
<td>31</td>
<td>28.7</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>Heterosexual</td>
<td>61</td>
<td>56.5</td>
</tr>
<tr>
<td></td>
<td>Homosexual/Bisexual</td>
<td>47</td>
<td>43.5</td>
</tr>
<tr>
<td>Stable dating relationship</td>
<td>Yes</td>
<td>55</td>
<td>50.9</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>53</td>
<td>49.1</td>
</tr>
</tbody>
</table>

Note. Percentage calculated based on valid response.
Threats to identity: lipodystrophy and identity changes in people with HIV/AIDS (PWA)

A hierarchical multiple linear regression analysis was then led in order to examine how and which lifespan dimensions were associated with Threats to identity after accounting for the effects of variables from the previous step. All statistical analyses were computed with SPSS version 17.0.

Results

Perception of threats to identity caused by LDS.

Descriptive and zero-order correlations were performed to examine the PWA perception of threats to identity (Table 3).

With regard to the identity contents, participants reported a fairly low level of threats to their Social identity, a medium level to their Interpersonal identity and a higher level to their Personal identity. Only this last score was, in fact, above the theoretical median of the scale (3.5). With regard to the identity principles, participants reported a low level of threats to the Self-efficacy, a medium level to Continuity and Distinctness, and a higher level to the Self-esteem identity principle. In this case, only threat to the Self-efficacy were below the theoretical median of the scale (3.5). Identity content and the identity principle subscales were highly and positively correlated.

Multidimensional scaling (MDS) was then conducted (44). In order to allow a representation able ‘to specify whether the proximities are similarity or dissimilarity measures’ (45, p. 1619) we applied the PROXSCAL method. A plot of Kruskal’s stress values by number of dimensions suggested that a two-dimensional MDS solution provided an adequate fit, explaining 99.6% of the matrix variance with a stress value of 0.008. A plot of this solution revealed three kinds of threat configurations (Figure 2): (1) threats to Interpersonal identity which appeared primarily to undermine the Self-efficacy principle; (2) threats to Social identity that questioned more than anything else the distinctness principle; (3) threats to Personal identity that questioned especially the feelings of Continuity and Self-esteem.

![Figure 2. MDS Mapping (PROXSCAL) of Seven Threats to Identity Subscales using Euclidean Distance.](image-url)
Lifespan variables on perception of threats to identity.

Person correlation analysis has been conducted after one participant was excluded from the analysis because of responses far from the mean of a set of items, Mahalanobis > 39.25, DF = 16, p > 0.001 (46). All categorical variables were transformed into dummy variables (Table 4).

It is interesting to note that the more serious the physician's assessment of the accumulation of fat in the patient's body (Lipodystrophy, LM) was, the less PWA perceived that bodily changes threatened their identity. Conversely, the patient's assessment of a more serious reduction of fat in their body (Lipoatrophy, LaP) threatened their identity more. No other physical indicators were

Table 4. Intercorrelations among Lifespan Variables and Threats to Identity Scores (N. 107)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Variables</th>
<th>Interpersonal</th>
<th>Social</th>
<th>Personal</th>
<th>Continuity</th>
<th>Distinctness</th>
<th>Self-Efficacy</th>
<th>Self-Esteem</th>
<th>Threats to Identity: total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosed</td>
<td>Lipoatrophy: Medical staff assessment (LaM)</td>
<td>.10</td>
<td>-.17</td>
<td>-.04</td>
<td>-.12</td>
<td>-.08</td>
<td>.11</td>
<td>-.06</td>
<td>-.05</td>
</tr>
<tr>
<td>Physical</td>
<td>Lipodystrophy: Medical staff assessment (LM)</td>
<td>-.26**</td>
<td>-.22*</td>
<td>-.15</td>
<td>-.22*</td>
<td>-.19</td>
<td>-.24*</td>
<td>-.25*</td>
<td>-.25*</td>
</tr>
<tr>
<td>Perceived</td>
<td>Lipoatrophy: Patients' assessment (LaP)</td>
<td>.32**</td>
<td>.09</td>
<td>.35***</td>
<td>.26**</td>
<td>.16</td>
<td>.32**</td>
<td>.30**</td>
<td>.28**</td>
</tr>
<tr>
<td>Physical</td>
<td>Lipodystrophy: Patients' assessment (LP)</td>
<td>.02</td>
<td>.01</td>
<td>.19</td>
<td>.10</td>
<td>.06</td>
<td>.04</td>
<td>.08</td>
<td>.08</td>
</tr>
<tr>
<td>Clinic Time</td>
<td>Years from diagnosis</td>
<td>.02</td>
<td>-.13</td>
<td>.09</td>
<td>-.01</td>
<td>-.07</td>
<td>-.04</td>
<td>.04</td>
<td>-.02</td>
</tr>
<tr>
<td>Historical</td>
<td>Historical time of diagnosis</td>
<td>-.05</td>
<td>.11</td>
<td>-.07</td>
<td>-.04</td>
<td>.05</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Socio-,</td>
<td>Gender (1 = Female)</td>
<td>.16</td>
<td>.19</td>
<td>.23*</td>
<td>.20*</td>
<td>.24*</td>
<td>.10</td>
<td>.26**</td>
<td>.22*</td>
</tr>
<tr>
<td>Anagraphic</td>
<td>Age</td>
<td>-.15</td>
<td>-.18</td>
<td>-.19**</td>
<td>-.17</td>
<td>-.20*</td>
<td>-.14</td>
<td>-.22*</td>
<td>-.20*</td>
</tr>
<tr>
<td>Relational</td>
<td>Qualification (1 = medium/high)</td>
<td>-.09</td>
<td>-.08</td>
<td>-.02</td>
<td>-.08</td>
<td>-.03</td>
<td>-.06</td>
<td>-.09</td>
<td>-.07</td>
</tr>
<tr>
<td></td>
<td>Condition of employment (1 = had a job)</td>
<td>-.06</td>
<td>-.04</td>
<td>-.12</td>
<td>-.06</td>
<td>-.10</td>
<td>-.06</td>
<td>-.09</td>
<td>-.08</td>
</tr>
<tr>
<td></td>
<td>Sexual orientation (1= heterosexual)</td>
<td>-.06</td>
<td>-.10</td>
<td>-.06</td>
<td>-.06</td>
<td>-.12</td>
<td>.01</td>
<td>-.13</td>
<td>-.09</td>
</tr>
<tr>
<td></td>
<td>Stable dating relationship (1 = yes)</td>
<td>.09</td>
<td>.03</td>
<td>.01</td>
<td>.05</td>
<td>.08</td>
<td>.01</td>
<td>.04</td>
<td>.05</td>
</tr>
<tr>
<td>Psychosocial</td>
<td>Disclosure (D)</td>
<td>.02</td>
<td>-.07</td>
<td>-.05</td>
<td>-.04</td>
<td>-.07</td>
<td>.03</td>
<td>-.07</td>
<td>-.05</td>
</tr>
<tr>
<td></td>
<td>Family support (MPSS-Fa)</td>
<td>.04</td>
<td>-.18</td>
<td>-.22*</td>
<td>-.20*</td>
<td>-.13</td>
<td>-.01</td>
<td>-.15</td>
<td>-.15</td>
</tr>
<tr>
<td></td>
<td>Friends support (MPSS-Ft)</td>
<td>-.20*</td>
<td>-.28**</td>
<td>-.21*</td>
<td>-.27**</td>
<td>-.30**</td>
<td>-.16</td>
<td>-.24*</td>
<td>-.27**</td>
</tr>
<tr>
<td></td>
<td>Significant other support (MPSS-So)</td>
<td>-.13</td>
<td>-.21*</td>
<td>-.20*</td>
<td>-.18</td>
<td>-.10</td>
<td>-.25**</td>
<td>-.24*</td>
<td>-.21*</td>
</tr>
</tbody>
</table>

$r <0.01$  $** < 0.01$  $*** < 0.001$
significantly related to the threats to identity. With some exceptions, threats to identity were higher in Females and decreased with Age. No other socio-anagraphic and relational lifespan variables were significantly related to the threats to identity. With regard to the psychosocial variables of participants’ lifespan, MSPSS subscales and first of all MSPSS-fr were highly and negatively correlated with most measures of threats to identity: the greater the perceived social support the less intense were the threats to identity that participants reported. With some exceptions, the correlations showed that lifespan variables were associated to all seven TIPWALS-Q subscales with the same intensity and in the same direction. For this reason, in the subsequent analysis we chose to consider only the Threats to Identity Total Score.

Hierarchical Multiple Linear Regression analysis was then leaded. Only lifespan variables which were significant at \( p < 0.05 \) from bivariate results were included in the multivariate model. To check for the presence of multicollinearity, the variation inflation factor (\( VIF \)) statistic was first examined across the predictor variables. The highest \( VIF \) statistic was 1.32, suggesting that multicollinearity was not present (47). All assumptions about the residual error were satisfied [\( M_{\text{RESID}} = 0.00; \) SD \( Z_{\text{RESID}} = 0.00; \) t Durbin-Watson = 1.69; Autocorrelation = 0.00].

The first step of this analysis contained Physicians’ Assessment of the Lipodystrophy (\( LM \)) that negatively predicted the Threats to Identity Total Score (Table 5). The physicians’ assessment effect tended to decrease in the second steps of analysis. The second step added Patients’ Assessment of Lipoatrophy (\( LaP \)) which positive effect decreased when Gender and Age were entered into the regression equation, and increased in the last steps. Gender had only a moderate and non-significant (\( p > 0.05 \)) effect in step 3 in which the adjusted \( R^2 \) did not increase significantly. Gender and Age had no influence in steps 4, when Social Support from Friends, Family and Significant other were introduced into the analysis. In this last step only the friends support reduced the perception of PWA identity threats: The model explained the 19% of variance and showed that, after all, patients’ perception of the seriousness of the reduction of fat in their body, together with the social support that they could derive from their friends, were the lifespan variables that affected their perception of threats to identity more.

### Discussion

For a person with HIV or AIDS implies, today, dealing with the effects of the new antiretroviral

<table>
<thead>
<tr>
<th>Lifespan Dimensions</th>
<th>Diagnosed Physical</th>
<th>Perceived Physical</th>
<th>Socio-Anagraphic</th>
<th>Psychosocial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifespan Variables</td>
<td>( \beta )</td>
<td>( t )</td>
<td>( \beta )</td>
<td>( t )</td>
</tr>
<tr>
<td>Lipodystrophy: Medical staff assessment (( LM ))</td>
<td>-.25</td>
<td>-2.59*</td>
<td>-.18</td>
<td>-1.89*</td>
</tr>
<tr>
<td>Lipoatrophy: Patients’ assessment (( LaP ))</td>
<td>.23</td>
<td>2.43*</td>
<td>.19</td>
<td>1.92*</td>
</tr>
<tr>
<td>Sex (1 = female)</td>
<td>.17</td>
<td>1.75*</td>
<td>.13</td>
<td>1.45</td>
</tr>
<tr>
<td>Age</td>
<td>-.08</td>
<td>-.81</td>
<td>-.06</td>
<td>-.60</td>
</tr>
<tr>
<td>Friends’ support</td>
<td>-.24</td>
<td>2.53*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family support</td>
<td>-.09</td>
<td>-.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant other support</td>
<td>-.09</td>
<td>-.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.05</td>
<td>.09</td>
<td>.11</td>
<td>.19</td>
</tr>
<tr>
<td>( \Delta R^2 )</td>
<td>.06*</td>
<td>.05*</td>
<td>.03</td>
<td>.10**</td>
</tr>
<tr>
<td>( F )</td>
<td>(1.105) = 6.70*</td>
<td>(2.104) =6.46**</td>
<td>(4.102) =4.32**</td>
<td>(7.99) = 4.58***</td>
</tr>
</tbody>
</table>

Note. Only those variables significant at \( p < 0.05 \) from bivariate results were included in the multivariate model.

\( p < 0.05 \); \( p < 0.01 \); \( p < 0.001 \).
therapies (2, 3, 6, 7, 9) and in particular with the body changes associated to LDS. Starting from the assumption that for PWA the manifestation of bodily changes could elicit a new discontinuity in their biographies (28) and, consequently, a further restructuring of their identity (29-31), the present research wanted to analyse the perception that a group of HIV+ patients who have developed lipodystrophy reported about whether and how these changes were experienced as forms of threat to their identity. To do this, it we chose to apply the IPT (37-39) as a model more suitable than staged models to capture the processes of re-structuring of identity that such physical threats can generate.

If the HIV diagnosis is a disruptive moment breaking the sense of identity of people who are affected (29), the results of this study have shown that lipodystrophy changes result in ‘loss of the self’ that are more evident for some identity aspects than others. Only rarely participants did admit that their bodily changes could threaten their relational identity or harm their social position. It is reasonable to assume that being sick for many years, these patients may have already faced problems of identity such as those related to the presentation of themselves and their disease to others and those associated with the need to cope with the social stigma that, inevitably, is associated with their disease status (10, 32-34). The perception of threats to feelings of distinctness, efficacy, but especially of continuity and self-esteem, became indeed much more intense when applied to personal identity, which is the most individual and intimate part of identity, not shared or reflected outside; what in Erikson (26) conceptualisation represents the Ego Identity notion.

Results of this study are then in line with researches that have shown how the body is a fundamental dimension of self-definition for PWA (23), but also confirm that not always and not for all subjects bodily changes associated with the LDS call into question the overall structure of identity. In this sense, the results confirm that the sequential models utilized before the introduction of HAART are no longer able to take the paths of the identity restructuring processes of patients submitted to new HIV treatments. IPT (37) seems us a more suitable model to study identity threats related with LDS changes. This model has allowed us to show that the all types of identity threats are highly and significantly correlated: so, we can reasonably assume a possible effect of multiple threats to identity. Nevertheless, some principles resulted more threatened with reference to specific identity contents. This was clearly shown by the results of the MDS; the feelings of not being able to do things that PWA would have liked to do, such as having lasting romantic relationships (self-efficacy), were seen to threaten more the patients’ interpersonal dimension of identity than the others, whereas the concern about being stigmatised because of their condition (distinctness) was what most threatened their social identity.

Finally, using IPT model allowed us to analyse the effects of the context of identity. The results have confirmed, above all, the importance of the type and severity of bodily changes (17), especially those perceived by patients than those assessed by the doctors (14, 15). It was also noted that, in the eyes of patients, was lipoatrophy and not lipodystrophy more associated with the perception of threats to identity. Supporting those within the clinical context who have long argued for the importance of considering the perceptions and evaluations of patients (20), these results suggest also the importance of body’s cultural representations. Being thin, in fact, appears to be a marker of people identity as HIV patient more than being fat.

In contrast with the importance that the literature has attributed to the temporal dimension (23), mainly in order to determine the stage of the disease (27) and of the identity disruption (23-25, 28), our results have not shown significant trends. It is possible to assume that the situation of our participants was very different from that of patients of researches conducted before the introduction of HAART. In the actual era (11) it seems more reasonable to assume a cyclic path for the re-actualisation of the identity questions, no longer marked by clinical or historical times of disease, but rather by the emergence or re-emergence of problems, such as those associated with the effects of therapies that introduce new discontinuity in patients (48, 49).

Was instead the possibility of counting on the support, first of all of a friend that, according to the literature (36, 51, 52), seemed to play an important role in reducing feelings of identity threat resulting from the perception of the relevant changes that the body has undergone.

Unlike the findings described in the literature, neither having a job nor disclosure was associated with
the participants’ perception of identity threats (23, 49). As indicated by several authors (50) work would allow PWA to maintain high self-esteem and good social relationships, and make them feel self-sufficient and in control of their own lives. Even in this case is probably the advanced age of the sample to explain these results. Nevertheless, it is important to note that in the case of patients like those considered here the possibility of returning to work may have been perceived by some as a further threat to their identity, linked mainly to the need to ‘reveal’ their status to others. Fear of the consequences of stigma can perhaps also explain why disclosure did not emerge as a variable that offset the perceived threat of identity, as found in the literature (23, 48, 49).

The current study has several limitations. First, cause-effect conclusion about the impact of lifespan variables on perception of identity threats cannot be based upon the study’s findings due to its cross-sectional design. Second, because of privacy, it wasn’t possible to collect data about patients clinical condition, such as CD4 level, comorbidity, compliance, severity of other side effects.

Despite these limitations, the study raised some very topical issues from a clinical point of view, especially the problems with which psychologists working in this field will increasingly be confronted. Moreover, unlike the literature, which largely dates back to a pre-HAART era, it highlights how complex, cyclical and dynamic are the effects that HIV status can have on the sick person: they are no longer only clinical, but also psychological and psychosocial.

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Correlation between quality of cardiopulmonary resuscitation and self-efficacy measured during in-hospital cardiac arrest simulation; preliminary results

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1 Unità Operativa Complessa di Cardiologia, Azienda Ospedaliero-Universitaria di Parma; 2 Settore Formazione e Aggiornamento, Azienda Ospedaliero-Universitaria di Parma; 3 Direzione Servizio Assistenziale, Azienda Ospedaliero-Universitaria di Parma; 4 Cardiac Surgery Intensive Care Unit, Azienda Ospedaliero-Universitaria di Parma; 5 Emergency Department, Azienda Ospedaliero-Universitaria di Parma

Abstract. Background: The concept of self-assess it’s a central mechanism in human agency for behavior change and should translate to desirable practice patterns. There are no many studies that have investigated the relationship between the perception of the ability to perform cardiopulmonary resuscitation (CPR) and the quality of the same. The aim of this work is to investigate the relation between physiological and psychosocial variables in cardiac resuscitation in order to improve the involvement and motivation of professionals in training courses. Methods: During the year 2012, 322 medical staff of Ospedale-Universitario of Parma were trained to basic life support defibrillation (BLSD). Before started the course the participants were randomly selected among the staff working in the same department to create a team of two persons and involved in a simulation that reproduced the first five minutes that occurs for a cardiac arrest in a medical or surgical department in our hospital before the intervention of the hospital emergency team. Before and after simulation to each participant was asked to answer a self-efficacy questionnaire on a 10-point scale on the management of cardiac. During simulation were registered the activation time of the emergency response system, hands-on time, defibrillation time, number of compression and correct compression rate. Results: Activation time of the emergency response system was 70.52 ± 78.77 seconds. In 55 teams was not made the alert. The defibrillation time was 148.63 ± 58.43 seconds. In 44 teams the defibrillator were used within 120 seconds, in 36 (22.1%) it was not used. Hands-on time average was of 166.20 ± 62.9 seconds. The mean number of compression was 216.22 ± 115.57. The percentage of satisfactory compression was 9.97 ± 21.23 %. The level of self-efficacy was under the average for the 35.6%, while the 26.8% of the participants had a medium level of 5 and the 38.5% of the sample declared to feel an efficacy level included in 6-10. The sense of self efficacy after the simulation was constant in the 38.3% of the sample, while increased in the 30.5% and decreased in the 31.2%. We found no significant correlations between self-efficacy levels and specific results in scenario acting before simulation, instead, after the simulation the skills performances are much more correlated with self-efficacy. Conclusions: The medical staff reported an individual’s perception of good efficacy in the management of simulation of cardiac arrest, but it does not correspond to a high skills. An open question is if and how these psychosocial variables may play a role in improving the quality of CPR and if knowledge of the low capacity to manage a cardiac arrest can be translated into the need for the medical staff to be regularly engaged in BLSD retraining.

Key words: basic life support defibrillation (BLSD), Self-efficacy
Introduction

The concept of self-assessment is a central mechanism in human agency for behavior change and should translate to desirable practice patterns (1-4). A few studies reported that the medical staff have limited ability to accurately self-assess (5, 6, 13, 14). Particularly, in cardiopulmonary resuscitation investigations has not been described, if the perception of self-assessment to manage a cardiac arrest corresponds to reality (10, 15). In a field like cardiopulmonary resuscitation were skill retention starts declining early after initial training and often reaches pre-training levels after 1 or 2 years (16-18), the incorrect assessment of their capacity can be a cause of failure need for learning. The aim of the present study was to explore if there’s a correlation between individual self-efficacy and psychomotor skills in simulation training basic life support defibrillation (BLSD) courses.

Methods

Study Cohort

During 2012, in Parma Hospital, there were done 16 BLSD training courses addressed to groups of 20 health professionals. Those courses typically include 5 hours of video, lecture, practical instruction and simulation about the recognition and treatment of BLSD events (20). The participants of the present study were: 200 (62.5%) women and 114 (37.5%) man with a mean age of 37.5±9.18. The service affiliation were mainly represented to cardiopulmonary, surgical, emergency, geriatric-rehabilitation departments. The distribution of professional were 128 nurses (45.39%), 73 medical doctors (25.88%), 56 social welfare operator (19.85%), 49 practicing doctors (17.37%) and 16 other (5.67%). Of all professionals, 225 (70.31%) had a previous trained course more than 24 months before, 67 (20.93%) hadn’t never trained and 30 (8.76%) had trained during the last 2 years. The study was approved by board of direction of Azienda Ospedaliero Universitaria of Parma and written informed consent was obtained from all participants.

Procedure

Each participant was identified by a number in order to maintain the anonymity and privacy. Each one of the 320 participants was asked to answer to the one item (Table 1) on his/her self-efficacy in performing resuscitation skill: they rated the question on a 10-point scale, according to the single-item technique (7, 8, 12). The question was proposed twice: before and after the simulation.

The simulation involved two participants randomly selected among the staff working in the same department: doctors and nurses 19 (14.73%), two doctors 38 (29.45%), two nurses 33 (25.58%), nurses and oss 26 (20.15%), two oss 5 (3.87%) and medical and oss 8 (6.22%). The simulation reproduced the first five minutes that occurs for a cardiac arrest in a medical or surgical department in our hospital before the intervention of the hospital emergency team. In a hospital room equipped for simulation CPR, manikin was placed on the bed; 20 meters outside the room LIFEPAK 500T AED Trainer was placed on emergency trolley. Prior to the simulation, teams were instructed that the patient were hospitalized from 24 hours for hyperpyrexia and pneumonia. The scenario started when one of the two medical staff comes into the room and found the patient unconscious, not breathing and with no pulse; the scenario ends after 5 minutes.

Measuring Parameters of CPR Quality

During the simulation there was no involvement of instructors in the scenario. The teams’ performance were simultaneously recorded by two independent observers that registered: activation time of the emergency response system, hands-on time, defibrillation time, number of compression and correct compression rate (11, 22, 23). The activation time of the emergency response system was defined as the time from the patient’s unconscious

<table>
<thead>
<tr>
<th>Table 1. Self-efficacy item</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much do you feel confident in performing a resuscitation attempt?</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Not at all</td>
</tr>
</tbody>
</table>
evaluation to the call of the hospital emergency team. Hands-on time was defined as cardiac massage; defibrillation and ventilation were rated as continuous cardiac massage if the interruption was ≤ 10 sec. Defibrillation time was defined as the time from diagnosis of cardiac arrest to defibrillation. Chest compression rates and correct chest compression were detected and recorded by the manikin: AED Resusci Anne SkillReporter (Laerdal Medical Corporation, Stavanger, Norway). Correct compression rate are considered all those with depths > 5 cm, with complete relaxation and correct hands position.

**Statistical Analysis**

The continuous variables are expressed as mean values ± standard deviation (SD), and the nominal variables as absolute numbers and percentages. Statistical analysis was performed using a statistical software package (SPSS for Windows). We have proceeded with an analysis of bi-variate correlations between those physiological and psychosocial variables (r of Pearson).

**Results**

The Skills performances measured have a Gaussian distribution. Activation time of the emergency response system was 70.52 ± 78.77. In 55 (43.4%) teams was not made the alert. The defibrillation time was medially of 148.63 ± 58.43, with a minimum of 28 seconds and a maximum of 286; 63 (54.7%) of the teams had a performance under the average and only the 5 (4.3%) had a time by 60 seconds. In 39 (24.4%) teams the defibrillator were used within 60-120 seconds. In 36 (13.53%) teams the defibrillator was not used. Hands-on time average was of 166.20 ± 62.9, with a minimum of 0 and a maximum of 293 seconds: the 82 (56.2%) of the sample was over the average. The average number of compression was 216.22 ± 115.57, from a minimum of 0 and a maximum of 458; in 66 (51%) of the participants were over the average. The percentage of correct chest compression was medially of 9.97 ± 21.23 % with a minimum of 0% and a maximum of 94%: the 109 (74.5%) of the participants were under the average. As regards the self-efficacy we found no significant correlation between self-efficacy levels and specific results in scenario acting before simulation. Instead, after the simulation the skills performances are much more correlated with self-efficacy. The correlations between the perception of self-efficacy and skills in females are more significant and also in the assessments pre there is significant for activation time of the emergency response system, defibrillation time and Hands-on time (Table 3).

Figure 1 shows the changes in the level of self-efficacy: it were under 5 for the 95 (30.25%), while the 67 (21.33%) of the participants had a medium level of 5 and the 96 (30.57%) of the sample declared to feel an efficacy level included in 6-10. The sense of self efficacy after the simulation was constant in the 99 (38.3%) of the sample, while increased in the 79 (30.5%) and decreased in the 81 (31.2%).

**Table 2. Skills measures during the five minutes cardiac arrest simulation and correlation between skills measures and self-efficacy before and after the simulation**

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Self-efficacy PRE</th>
<th>Self-efficacy POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activation time of the emergency</td>
<td>n=106*</td>
<td>-.114</td>
<td>-.168*</td>
</tr>
<tr>
<td>response system, sec</td>
<td>82.76 (81.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defibrillation time, sec</td>
<td>n=109†</td>
<td>-.247**</td>
<td>-.169*</td>
</tr>
<tr>
<td></td>
<td>148.37 (57.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hands-on time, sec</td>
<td>n=140</td>
<td>.123</td>
<td>.240**</td>
</tr>
<tr>
<td></td>
<td>164.44 (64.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest compression, n°</td>
<td>n=140</td>
<td>.059</td>
<td>.166*</td>
</tr>
<tr>
<td></td>
<td>208.14 (113.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct compression rate, %</td>
<td>n=140</td>
<td>-.032</td>
<td>.212**</td>
</tr>
<tr>
<td></td>
<td>10.18 (22.3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discussion

High-quality CPR and prompt defibrillation may be the most important actions during cardiac arrest (11, 19, 21). A preliminary assessment is guided from data driven by single skills that demonstrate a poor quality of CPR in the first five minutes of cardiac arrest simulation before the arrival of the emergency team. The poor quality of resuscitation performance is evident by the positive correlation between compression number and hands-on time and negative correlation between the defibrillation time and the chest compression number. This information is not a surprise (9) and a number of explanations have been considered like arrest events occur infrequently from the perspective of any given rescuer or rescuers are infrequently trained. Nevertheless analyzing the correlations between the individual level of confidence and the skills performance before simulation there is not significant correlation between self-efficacy levels and specific results in scenario acting. The medical staff felt quite confident in their ability to perform BLSD that don’t correspond to satisfactory skill performances. In a systematic review on the accuracy of physician self-assessment compared with observed measures of competence (6), the preponderance of evidence suggests that physicians have a limited ability to accurately self assess. Most of the studies (6) on the correspondence between self-assessment and external assessment, as stable external objective measures, demonstrated weak or no association between the two. Some studies found a reasonable association between physicians’ self assessment abilities and external assessment in specific areas such as cultural and linguistic sensitivity, self and external tests and in chart audit (6). The causes of the medicals overestimating could be the human tendency to give a positive self conception. Interesting, after the simulation, the skills performances correlated with self-efficacy declared. When professionals are requested to evaluate their ability after a simulation they are able to give a much more real judgment. We can assume that there is a difference between knowledge and the know how to do that is not perceived by the people. Assuming different self evaluation for women and men we wanted to investigate whether there is a gender difference. Analyzing gender differences were observed that the woman have a lower sense of self efficacy and they are more realistic evaluation of their performances. In men, the skill does not change the perception of the degree of performance. The sense of self efficacy

Table 3. Correlation between skills measures and self-efficacy before and after the simulation by gender

<table>
<thead>
<tr>
<th></th>
<th>Self-efficacy</th>
<th>Self-Efficacy</th>
<th>Self Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Partecipans</td>
<td>PRE</td>
<td>POST</td>
</tr>
<tr>
<td>Activation time of the emergency response system</td>
<td>- 0.114</td>
<td>- .168 *</td>
<td>.081</td>
</tr>
<tr>
<td>Defibrillation time</td>
<td>-.247**</td>
<td>-.169 *</td>
<td>.039</td>
</tr>
<tr>
<td>Hands-on time</td>
<td>.123</td>
<td>.240 **</td>
<td>-.156</td>
</tr>
<tr>
<td>Compression</td>
<td>.059</td>
<td>.166 *</td>
<td>-.043</td>
</tr>
<tr>
<td>Correct compression rate</td>
<td>-.032</td>
<td>.212 **</td>
<td>-.084</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).  
*Correlation is significant at the 0.05 level (2-tailed).
is important in order to make people be involved in emergency situations. In the case of cardiac resuscitation it is important that the motivation to act corresponds to an efficient result, that can be obtained if professionals are extremely involved in training courses and see a real improvement of their abilities based on a real evaluation of their formative needs.

In adults, a strong motivation for learning is represented by the knowledge that competence is not fully known, and that in the near future will have to put it into practice. The initial simulation may be a tool that can create the basis for a correct self-assessment for women but not for man. You could be to reflect on the training tools that take into account gender difference.

The limits of this work can be originated by the complexity of reproducing a real scenario, that can have influenced the quality of the performance of professionals and by the kind of self efficacy measure, that is a self administered questionnaire.

Furthermore since the assessment of skill was made on the team and not on individual performance has not been possible to assess the gender difference in the quality of the performance, but the gender difference in self assessment.

Conclusion

There is not correspondence between self efficacy and real skill performance during CPR simulation of cardiac arrest in medical staff in particular it is important to stress that an individual sense of good efficacy in managing emergency situations doesn’t correspond to high skill performance.

Despite considerable efforts to improve the treatment of cardiac arrest, most report reported a poor survival outcome. If patient outcomes are to improve, the evaluation of the contribution of all the potential risk factors and interventions is essential. An open question is how these psychosocial variables may play a role in improving the quality of CPR and if knowledge of the low capacity to manage a cardiac arrest can be translated into the need for the medical staff to be regularly engaged in BLSD retraining.

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Strangers in a strange land: work experiences of foreign nurses in Parma’s territory

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Abstract. Purpose. The purpose of this research is to explore, investigate and describe experiences and points of view of foreign nurses working in the area of Parma. We focalize particularly on two areas of interest: negativities and positivities in experiences related to the process of integration into the new working environment. Background. The literature search has revealed that the phenomenon of “nursing immigration” is numerically significant in Italy and more particularly in Emilia Romagna. From studies conducted in other countries (UK, USA, Canada, Australia and Iceland) there are two categories of factors which influence the process of integration of foreign nurses in the new working environment, facilitators and barriers. Method. For this study we followed the phenomenological method. A total of twelve foreign nurses were interviewed in the months of October and November 2013 in the territory of Parma working in various professional fields (medicine, critical care and surgery). We did not impose any structure to interviews so that respondents were free to express their lived experiences spontaneously. All interviews were recorded, transcribed verbatim and analyzed by the method of Giorgi (1970). Results. Results obtained from the analysis of interviews revealed seven themes, divided in positivities and negativities. Positivities are psycho-social support (Italian colleagues, fellow countrymen, patients), opportunities of cultural enrichment, positive work ethic. negativities are difficulty of language and communication, and inequalities racial prejudice, differences in care practices and inadequate opportunities for professional growth related to the Italian working environment. Conclusions. The study concludes by pointing out the importance of the role that foreign nurses can play in our health care system and how the results of this search can help all professionals in the health sector to have a greater understanding of their experiences. This knowledge can make a contribution to the development of new quantitative research in the same area and then to the formation of new strategies for hospitality and support.

Key words: foreign nurses, experience, transcultural nursing, immigration, international recruitment.

Introduction

The study conducted by Fortunato (2012) points out how the phenomenon of “immigration nursing” is numerically significant in Italy and more particularly in Emilia Romagna. To our knowledge, no qualitative studies have been conducted about this phenomenon in Italy. As reported in the literature review conducted by Kawi and Xu (2009), most of qualitative research related to this topic was conducted in the United Kingdom (41%), the US (31%), Canada (14%), Australia (10 %) and Iceland (3%). From these studies the integration process emerges as a complex phenomenon, full of pitfalls and cultural barriers that prevent its success, with negative consequences on the quality of care and the teamwork. In a society with increasingly diverse cultural characteristics, integration and intercultural skills are crucial to respond to needs of the patients. Nurses have to make a considerable effort to show their professionalism: they must understand needs of the patient to be
able to make him sympathetic to the care process. As
reported in the model of nursing practice described by
Engebreston and Littleton (2001), the nursing process
is expressed in a relationship between nurse/patient/fa-
mily influenced and determined by the socio-cultural
context of reference. Therefore the presence of foreign
nurses, if well placed in context, helps Italian fellows in
identifying fundamental cultural aspects to consider in
assistance. Based on these considerations, we consider
necessary to explore experiences of foreign nurses regard-
ing their integration into our working environment.
Indeed, the purpose of this research is to investigate and
describe experiences and viewpoints of foreign nurses
working in the territory of Parma, focusing on two areas
of interest: positivities and negativities.

Methods and instruments

Methodology. A phenomenological approach was
adopted to achieve a better understanding of experi-
ences related to the areas explored. As described by
Fain (2004), the phenomenological interpretation de-
rives its entire contents, without mediation and stea-
dily, from human experience.

Participants in the study. A sample of convenien-
ce, small and purposeful, was adopted to conduct the
survey. The sample consists of twelve foreign nurses
hired and employed in the Parma area, with at least
one year of work in their country of origin. The socio-
demographic data of the sample are given in Table 1.

Instrument and method of data analysis. The phe-
nomenological method prescribes interviews to be
conducted in an adaptive way: the researcher should
formulate new original questions depending on previ-
ous answers, of course within a loose script. For this
reason, the instrument chosen for the survey was the
“open and in-depth” interview for each participant.

The method used for interviews was to Van Ma-
en (1990), through a single application for reference:
“Tell me about your integration and your profes-
sional experience since you transferred in this work
environment.”

Interviews were conducted in places at the dis-
cretion of respondents and were heard, recorded and
transcribed verbatim.

<p>| Table 1. Socio-demographic data of the sample |</p>
<table>
<thead>
<tr>
<th>Variable</th>
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<tr>
<td>Gender</td>
<td></td>
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<tr>
<td>Male</td>
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</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>83,3</td>
</tr>
<tr>
<td>Provenance</td>
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<tr>
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<tr>
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<tr>
<td>Rhuanda</td>
<td>1</td>
<td>8,3</td>
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<tr>
<td>Spain</td>
<td>1</td>
<td>8,3</td>
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<tr>
<td>Eastern Europe:</td>
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<td>41,6</td>
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<tr>
<td>Lithuania</td>
<td>1</td>
<td>8,3</td>
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<tr>
<td>Poland</td>
<td>1</td>
<td>8,3</td>
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<tr>
<td>Romania</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>South America:</td>
<td>4</td>
<td>33,3</td>
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<td>Paraguay</td>
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<tr>
<td>Venezuela</td>
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<td>8,3</td>
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<tr>
<td>Professional environment</td>
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<tr>
<td>Critical Area</td>
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<td>25</td>
</tr>
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<td>Surgery</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Medicine</td>
<td>6</td>
<td>50</td>
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</table>

The development and classification of recurring
themes extracted from interviews were implemented inive stages according to the method of Giorgi (1970).
• Read complete description of the experience with
the goal of getting a sense of the whole.
• Review descriptions to discover the essence of the
experience.
• Review units of meaning for redundancy, clarifica-
tion or elaboration. To relate meaning units with
each other and with the sense of the whole.
• Reflect on units of meaning and extract the essence
of the experience for each participant.
• Develop a consistent description of structures of
meanings of the experience for all participants.

Results

Throughout our interviews, we identified the fol-
lowing crucial factors which supported the integra-
tion of foreign nurses in the sample, i.e., positivities:
psychosocial support (mostly from Italian colleagues, but also from fellow countrymen and patients), opportunities for cultural enrichment and positive work ethic. Conversely, the following factors made their integration more difficult, i.e., negativities: difficulties of language and communication, inequalities and racial prejudices (mostly with patients, but also colleagues), differences in care practices and inadequate opportunities for professional growth. Recurring themes extracted from interviews have been reported, along with the number of participants, in Tables 2 (positivities) and 3 (negativities).

### Discussion

We compare our results with the related literature, which exclusively consists of studies conducted in Anglo-Saxon countries. Although largely in line with their findings, we find some crucial differences. Regarding positivities, we find that Italian colleagues and patients are significant sources of psychosocial support, while the literature exclusively highlights the role of fellow countrymen.

Moreover, while the literature finds that opportunities of professional enrichment play a crucial role, we do not find them among our positivities. However, our most significant deviation from the literature is within negativities. We find that the major cause of lack of opportunities of professional enrichment in our sample is a broad discrimination towards the whole nursing profession. This seems to be an Italian peculiarity, as the literature shows that, in Anglo-Saxon countries, the lack of these opportunities is mostly due to racial discrimination. This is in line with our finding regarding positivities which points out high psychosocial support from Italian colleagues, suggesting a certain degree of “class solidarity”, instead of the “racial solidarity” in Anglo-Saxon countries.

Let us discuss our findings in more detail, starting with positivities. Regarding psycho-social support, we found similar results to Davison (1993) and Alexis and Vydelingum (2005): the support from colleagues of same origin is particularly significant. Conversely, while they do not find any psychosocial support from patients, we find it in our sample. The second and third positivities, i.e., the opportunities of cultural enrichment and the positive work ethics, were also found in studies conducted by Whiter and Snowball (2003) and Alexis and Vydelingum (2005). Both studies emphasize a great motivation and a great desire to learn. Moreover they show also that it is not unusual for foreign nurses to work longer hours, take loads of heavier patients and face multiple challenges. Having concluded our discussion of positivities, we turn to negativities. All the studies in the related literature shared with us the crucial role of difficulties concerning communication and language. Especially in studies of Baumann and Blythe et al. (2006) and Magnusdottir (2005) nonverbal behaviors and sociocultural aspects of communication (jokes, sarcasm, sayings) are highlighted as the major obstacle, as well as the absence of gestures in specific situations such as telephone conversations. In the study by Cooke (1998) there are references to the difference in pronunciation and accent, items listed in this study regarding especially the dialects. In our study there aren't experiences of discord among colleagues about the language, conversely reported by Spangler (1991). The second negativity, inequality and social prejudice is reported in

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<td>Italian colleagues</td>
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<td>66,6</td>
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<tr>
<td>Fellow countrymen</td>
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<td>41,6</td>
</tr>
<tr>
<td>Patients</td>
<td>4</td>
<td>33,3</td>
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<tr>
<td>Opportunities for cultural enrich</td>
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<td>Positive work ethic</td>
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<table>
<thead>
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<th>Criticality</th>
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</tr>
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<tbody>
<tr>
<td>Difficulties of language and communication</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Inequalities and racial prejudices</td>
<td>8</td>
<td>66</td>
</tr>
<tr>
<td>Colleagues</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Patients/Parents</td>
<td>5</td>
<td>41,6</td>
</tr>
<tr>
<td>Differences in care practices</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Inadequate opportunities for professional growth</td>
<td>5</td>
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various studies, such as Alexys and Vydelingum (2005) and Homers and Atkins (2002). Like in our study, Xu (2007) describes situations of denial of care and lack of confidence especially from relatives and older patients, received by foreign nurses as dictated by racial prejudice. In conclusion, the comparison between our study and the related literature demonstrates that the ethnic, skin color and language differences lay basis for discrimination. The theme of care practice differences between the host country and the country of origin is widely described in several studies. Allan and Larsen (2003) describe a greater amount of bureaucratic activities in the host country work environment. Homers and Atkins (2002) and Buchan (2003) report that in the host country certain procedures that held in the country of origin are not legally allowed, leading to a lower quality of professional training and therefore less autonomy in care practices. Other aspects shall be included such as the fragmentation of care work and the massive demand for strictly physical and manual jobs, which were not included among duties in the country of origin. The last issue, the inadequacy concerning opportunities for professional growth, seems to be primarily linked to environmental and structural characteristics peculiar to Italy, unlike other studies conducted in Anglo-Saxon countries. For example, the search conducted by Alexis and Vydelingum (2005) describes how some foreign nurses are excluded from opportunities of promotion and career development for racial prejudice or otherwise for their ethnic identity. Conversely, this study reports from provided experiences that the lack of opportunities for professional growth is a problem not just for foreign nurses but for all Italian nursing job category.

Conclusion

Overall, our findings indicate critical issues related mainly to the lack of professional recognition, a marginal role or “stopgap” and lack of autonomy. Conversely, positive aspects are related to relational and motivational areas.

Limits of this study are related in part to the nature of qualitative research: not using statistical tools does not allow to express quantifiable and generalizable results. This was partly due to limited availability of time and resources that led to the selection of a small sample. However, by comparison with the international literature, results obtained are comparable to other investigations in other countries. Our results make clear that foreign nurses encounter every day some problems and some challenges, which influence their opinion and perception of the local work environment. Foreign nurses, besides being an important presence in terms of numbers in our health care system, should also be considered an additional resource not only in terms of mass employment, but also in recognition of cultural aspects to consider in assistance. So the implementation of an adequate strategy could be very important to ensure a suitable insertion and integration, to exploit in the best possible way the contribution that foreign nurses could give. In this sense, results of this research can help all professionals in the health sector to have a greater understanding of meanings and experiences that foreign nurses live in a new professional environment and culture like ours. This study could be also a contribution to the development of new quantitative research in the same area, helping to create new strategies of welcome and support.

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Factors affecting women’s well-being during the experience of acute myocardial infarction: a literature review

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Abstract. Background and aim of the work. Many factors influence the experience of acute myocardial infarction (AMI) and the well-being of affected patients; gender differences emerge in the patterns of influence, and women’s specificity is frequently highlighted. The purpose of this literature review is exploring in depth the experience of AMI in women. Methods. We selected and analyzed 44 articles on five factors strongly affecting women’s well-being after AMI: the delay in seeking treatment for symptoms, medical treatment, therapeutic adherence, social support and coping strategies. Results. The studies have attributed gender differences in the delay in seeking care for symptoms partly to a lack of information, but especially to socially built factors, such as the stereotypic belief of cardiac diseases as “male diseases”. Studies on the medical treatment show that women are less likely to undergo diagnostic tests and clinical treatment compared to men, but women’s older age may counterbalance the gender effect. Compared to men, therapeutic adherence appears lower in women, who find lifestyle changes more difficult to achieve; however, women rely more on social support, affecting positively their well-being. Also, women use more emotion-focused, evasive or fatalistic coping strategies; they are likely to minimize the severity of symptoms, to try to control the disease and to protect the significant others from the negative consequences of the infarction. Conclusions. Most studies highlight gender differences in the experience of AMI and in the patterns of influence of the factors we analyzed.

Key words: acute myocardial infarction, women, well-being, delay, treatment, adherence, compliance, social support, coping

Introduction

The epidemiological literature available on acute myocardial infarction (AMI) is quite extended and varied, and knowledge about this topic is spreading steadily. Many factors strongly influence the experience of AMI and the well-being of affected patients. Some of these factors emerge quite frequently from the previous studies: not only the delay in seeking treatment for symptoms (1) and in receiving the medical treatment (2), but also: the therapeutic adherence (3), intended as an active, voluntary and collaborative participation to the achievement of a therapeutic result (4); coping strategies (5), intended as the efforts to handle external and internal demands generated from stressful events (6); and social support (7), intended as an individual’s perception of how sources of support (family, friends and significant other) can act as a buffer between stressful events and symptoms (8).

As the recent literature shows, gender can influence the impact of the listed factors on the experience of AMI; nonetheless, women affected by AMI have been for a long time disregarded by research (9,10) and AMI was traditionally considered a “male disease”. By consequence, scarce attention was put on women’s risk factors (11), women’s symptoms tended to be described
as “atypical” (12) and the medical treatment has been shaped, for a long time, on a male model of cardiac disease (13); women have also been found to receive less pharmacological treatment compared to men, a fact not explicable by other factors like diabetes, age, symptoms or pre-hospital delay (14). This had implications on women’s well-being; in fact, if compared to men who have experienced AMI as well, quality of life was significantly lower among post-AMI female patients despite similar age, treatment, and clinical data of men (15).

Since then, substantial progress has been made in this kind of research; still, despite the recent literature considers the female population affected by AMI, most studies treat gender as a socio-demographic variable, for descriptive purposes; only few studies draw gender-specific conclusions, comparing men and women as two different samples, and considering gender as an explanatory variable of the differences observed in AMI patients, at various stages of the disease.

The purpose

Given these premises, the purpose of this literature review is exploring in depth the experience of AMI in women, focusing on women’s well being during the different phases of the disease. We analyze the previously listed factors, affecting the well-being of AMI patients: at the onset of the event, the delay in seeking treatment for symptoms, and after the infarction, the medical treatment, therapeutic adherence, coping strategies and social support.

We suppose that the more knowledge on the distinctiveness of women’s experience of AMI is produced and diffused, the more health professionals will be able to offer personalized care and proper assistance.

Method

To pursue the above purpose, we selected articles on the basis of the following inclusion criteria: the subject had to be among the factors we chose for our analysis; the analysis had to emphasize sex differences or to be focused on women; the articles had to be published on international peer-reviewed journal in the last 20 years (1994-2014); the language had to be English. The exclusion criteria were the following: the lack of separation between men’s and women’s results, thus the lack of gender as an explanatory variable, and the strict consideration of biomedical variables or pharmacological issues, without reference to our chosen factors.

In our selected databases (CINAHL, MEDLINE, PsycINFO, Psychology and behavioral Sciences Collection, PubMed), we inserted the following keywords: “myocardial infarction”, “women”, “gender differences”, “sex differences”, and keywords for our chosen factors, separately and in various combinations: “delay in seeking care”, “delay in seeking treatment”, “delay symptoms”, “medical treatment”, “medical care”, “therapeutic adherence”, “compliance”, “concordance”, “self-care”, “coping” and “social support”. The research gave us 67 articles, but we excluded 23 articles from this set, following the exclusion criteria we established. We thus analyzed 44 articles, among which 3 could be mentioned both for social support and coping strategies, and one could be mentioned both for therapeutic adherence and social support, for a total of 48 themes (N=48). The flow chart below illustrates the topics addressed in the articles selected for this literature review.

Results

Delay in seeking treatment for symptoms

This is the most investigated topic (N=14 articles) among the factors we chose for our analysis; one possible explanation is the recognition of the delay in seeking treatment for symptoms as a potential cause of higher mortality rate and increased risk of morbidity for post-AMI patients (16). Rosenfeld in 2001 (17)
highlighted that although it was acknowledged that women delayed longer than men before seeking help for symptoms of AMI, still few studies were able to compare the different factors affecting the decision of delay, across genders.

From this study, some progress has been made, although in some cases gender continued to emerge as a secondary factor affecting the delay. For instance, Zerwic et al. (18) found that women did not delay significantly longer than men, while African American delayed significantly longer than non-Hispanic White patients.

However, many studies have recognized that different factors can determine the delay in seeking treatment for AMI symptoms in women and men. For example, Løvlien, Schei and Hole (19,20) analyzed in two studies the questionnaires reporting information on the year prior to first-time myocardial infarction completed by 149 women and 384 men; they found that low education and low partner education predicted prolonged delay in seeking care for symptoms men, but not in women (19); moreover, they found that the experience and interpretation of symptoms had more influence in men than in women (20).

In general, in more recent years the literature on AMI has started to show a tendency towards a more careful understanding of the major reasons that lead women with AMI symptoms to delay the use of medical care. Two main hypotheses can be developed on the reason for this delay: first, the lack of information on AMI symptoms and on the possibility that cardiac diseases affect women as well as men, and with slightly different patterns; second, the desire to control the situation and the fear of recognizing the symptoms of a heart-related illness. This latter one is supported by the work of Dempsey, Dracup and Moser (21), who analyzed sixteen women between the ages of 42 and 82 years hospitalized in a coronary care unit after AMI, reporting a median delay time in seeking treatment after the start of symptoms equal to 5.4 hours, with a range of hours of delay extending from 1.5 to 144 hours. The authors ascribed the delay to the desire of the women interviewed to maintain control over themselves and their environment, with the result of ignoring the symptoms and resort to self-treatment, until the same symptoms were perceived as threatening. The minimization of symptoms was found also by Rosenfeld (16) in a study involving 52 women hospitalized for acute myocardial infarction, reporting a median time of delay in seeking treatment for AMI symptoms of 4.25 hours. The author described two main decision trajectories used by women when experiencing symptoms of acute myocardial infarction: knowing that they had to seek help (found in 25 of the participating 52 women) and managing alternative explanations for their symptoms, minimizing them (found in 23 women). Semi-structured interviews detected the use of these strategies, while standardized instruments allowed to find that lack of social support, personal control, heart disease threat, and neuroticism are predictors of the delay. This research has been extended through another article, relying on the same sample, published in the following year (22): it identified six common patterns of behavior during the decision time: knowing and going, knowing and letting someone take over, knowing and going on the patient's own terms, knowing and waiting, managing an alternative hypothesis, and minimizing. These patterns were then grouped in the two decision trajectories described in the previous work by Rosenfeld (16): knowing or managing.

Other studies attributed the cause of women's delay in seeking treatment for AMI symptoms more to the first hypothesis, grounded on lack of information and on the wrong belief of not being at risk of heart attack as men are. While synthesizing the nursing literature on women's delay in the treatment of symptoms, Lefler (23) identified the reasons for this delay in severity and specificity of the symptoms, atypical presentation of symptoms, differences in event perception according to gender roles, the interpretation and the attribution of symptoms. Lefler and Bondy (24) produced a meta-synthesis indicating that women, especially the oldest ones, delay their access to medical care for various reasons, in particular related to the misinterpretation of cardiac symptoms, symptoms that can be attributed to other diseases. The same reasons for the delay already described by Lefler (23) were resumed, additionally to the presence of other chronic illnesses able to confuse AMI symptoms, beliefs of self-perceived low vulnerability to heart attack, and engagement in various other coping mechanisms. The hypothesis on the lack of in-
formation on symptoms was supported also by Martin et al. (25), who found that in a sample of 157 male and female AMI patients comparable on age, cardiac risk status, medical history, symptom presentation and other features, women were less likely to recognize AMI symptoms as cardiac symptoms.

Both the hypotheses on the causes of the delay in seeking treatment were supported by a study of Moser et al. (26), who interviewed 194 AMI patients to identify sociodemographic, clinical, social, behavioral, cognitive and emotional factors contributing to the delay. The authors did not find significant differences between men’s and women’s delay, but they found gender differences in the reasons for the delay, especially on the dimensions of age, history of AMI, type of AMI (Q-wave and non-Q-wave), concerns about not wanting to trouble others, and prior knowledge of thrombolytics.

Reconciling the many underlying causes of women’s delay in seeking help for AMI symptoms, two qualitative studies described female patients’ conditions during the event. First, Higginson (27) conducted a study relying on grounded theory research approach on (25) post-MI female patients: the author found that women delayed for many different reasons, that could be grouped into the following categories: lack of recognition of symptoms, a preference for self-medications and the perception of MI as a “male” disease. Second, Arslanian-Engoren (28), while analyzing the oral descriptions of ten women hospitalized for a MI, found women’s treatment seeking decisions influenced by the following issues: attribution of the atypical symptoms to non-cardiac causes, minimization of symptoms, mass media portrayal, male family member experience, knowledge deficit, unreal expectations, family insistence, and the type of pain due to the symptoms themselves.

The so far reviewed literature on the delay in seeking medical care for symptoms identified mainly “individual causes”, but several studies highlighted how the responsibility of the delay did not belong only to the individual. In particular, Schoenberg et al. (29), while conducting in-depth interviews with 40 middle-aged and older women at risk for MI and in general for coronary heart disease (CHD), found that besides the lack of information on the symptoms, the delay can be affected by social and structural constraints. Such constraints are the social construction of a norm on cardiac symptoms as “male symptoms”, the inadequacy of the interaction with the health care professionals, the competing social demands women face when threatened by a serious illness, and structural barriers delimiting women’s health care choices.

Medical treatment

As already mentioned in the Introduction, it is common evidence that infarcted women in general receive less medical treatment than men; we found noticeable interest also for this topic (N=9 articles).

The main issue addressed in the reviewed studies was the reason for the diversity between the treatments usually received by women and those received by men. The main explanations for such diversity in the literature were fairly divergent from each other. Focusing on the fact that women are affected by heart attack later in life than men, some studies have attributed the diversity of treatments to age. Other studies have shown that belonging to the female gender is in itself a major explanatory factor for these differences.

One of the studies proposing the explanation of age is by Williams, Fraser and West (30): relying on a wide sample of post-AMI patients of both sexes, the authors showed that although women underwent a minor amount of clinical exams and received less medical treatment than men, those differences were attributable to age, more advanced among women (average age of 75 years) than among men (average age of 66 years). Along the same line, Gevigney et al. (31) compared men and women after AMI: they found that during the first three months after the event women were subjected to diagnostic procedures less frequently than men, even though they were on average older than men in the sample (average age of 76 vs. average age of 64). Nonetheless, the authors concluded that age, not gender, was the crucial predictor of patients survival. In view of these results the authors wondered if mortality would have been lower among women in case the diagnosis and therapies had been similar for both sexes.

A reference focusing on gender as the reason for the difference in medical treatment is instead the study of Clarke et al. (32), also conducted on a large sample of patients with AMI. The results of this study showed
that although the female members of the sample were on average older than the male members of the sample, and that the probability of admission to cardiac care was decreasing as age increased for both sexes, older women still had a lower chance of being admitted to the coronary unit than men of similar age. So, men and women at later age did not receive the same treatment.

Also Garavalia et al. (2), relying on a sample of 676 women and 1420 men after AMI, showed that women received fewer treatments (eg. anti-anginal medications, beta-blockers and calcium channel inhibitors) compared to men; this happened despite the fact that women were older and that one month after AMI they reported worse physical health and more severe symptoms, if compared to men. Accordingly, Wilkinson et al. (33) showed, by means of an observational follow-up study, that women were less treated with thrombolysis and had substantially less probability of being discharged taking beta-blockers compared to men, despite women's older age, thus confirming the previous findings (2). The authors also found that women had less probability of survival in the 30 days immediately following the acute myocardial infarction, and this excess risk persisted even when adjusting for age, severity of infarction and other variables.

The evidence of lower medical care provided to AMI female patients, compared to male patients, is found also for cardiac rehabilitation programs (34), frequently not adapted to women's needs, as the presence of emotional support (35). Gender seemed a discriminating factor also for the probability of post-AMI surgery. For example, Nante et al. (36) found that for myocardial infarction, but also for other coronary artery diseases like chronic ischaemia, chest pain and angina, male patients had more probability of being subjected to revascularization interventions, even when adjusting for age and other risk factors.

As a conclusion, we mention the study by Vaccarino et al. (37), explaining the higher probability of death two years after the AMI detected for women, compared to men. The authors, after having analyzed data on 384,878 patients (155,565 women and 229,313 men) from 30 to 89 years of age, pointed out how this higher risk could be found in younger women (less than 75 years), not in the older ones, suggesting that gender was likely to be a risk factor in the process. Among the possible explanations for the higher risk of death among younger women, the authors mentioned the lower rate of use of established treatments for myocardial infarction, such as aspirin, beta-blockers, and thrombolytic therapy.

**Therapeutic adherence**

Even for therapeutic adherence and self-care (N=8 articles), gender differences might still be driving the specificity of women's well-being after AMI: for example, the requested change in lifestyle following the infarction might be more problematic for women. Radley et al. (38), when comparing the quantity and variety of problems encountered by 60 women and 60 men affected by AMI during the month after hospital discharge, found that changes in lifestyle, together with current medical conditions, were the most mentioned problems by women; on the contrary, men mostly mentioned work-related issues and financial problems. A following statistical testing ascertained how the problem of lifestyle changes was significantly correlated to gender and social class.

Kirchmayer et al. (39) studied the therapeutic adherence of 3920 AMI patients aged between 35 and 80 years old, in the year following hospital discharge; women, who represented the 26.8% of the sample, showed lower therapeutic adherence than men for any type of drug, most notably for the intake of statins. Concerning poly-therapy, the authors found lower probability of adherence for women in univariate analysis, an evidence that persisted even when adjusting for the background variables of the patients, in the multivariate analysis.

Another study (40) showed that age, jointly with gender, could be a determinant of post-AMI recovery: younger women, aged between 30 and 55 years old, proved more able to change wrong life habits (like smoke, unbalanced nutrition, scarce physical activity, high stress) and to decrease the responsibility towards others. Despite younger women's increase in the ability to ask for help and to express their thoughts, feelings and needs, they still reported some difficulty in taking care of themselves, and avoid taking care of others.

Gender differences in therapeutic adherence were highlighted in a study by Martin et al. (41) on a group of 157 post-AMI patients, 109 men and 48 women of
similar age. The authors found that after hospital discharge, women were less likely to attribute their heart attacks to modifiable behaviors such as diet, exercise, smoking habits, and more likely to attribute them to pathophysiological unchangeable factors (such as heredity, concomitant diseases and history of cardiac disorders). These attributions were negatively correlated to behavioral changes in lifestyle habits and to the reduction of improper behavior. Gender differences were present also in the retrospective cohort study by Lauffenburger et al. (42) on AMI patients older than 64: the authors found lower therapeutic adherence for women compared to men, regarding in particular the intake of angiotensin-converting enzyme inhibitors/angiotensin receptors blockers and beta-blockers. 

A special case is represented by adherence to cardiac rehabilitation: Thow et al. (43), by means of three large cardiac rehabilitation programs implemented in the west of Scotland, showed that many post-MI female patients did not accept cardiac rehabilitation, after the referral. The authors suggested that to increase adherence, the cardiac rehabilitation programs, their structure and recruitment strategy had to address women's specific issues.

Concluding, gender differences seem quite evident when observing therapeutic adherence and self-care behaviors after AMI; nevertheless, these differences may be counterbalanced by the effect of age. Setoguchi et al. (44) found that in a representative sample of 1,625 low-income American patients affected by MI and aged more than 65, where the women represented the 80% of the total sample, the use of recommended cardiovascular drugs (statins, blockers, and ACE inhibitors or ARBs) after discharge did not differ by gender. The combined effect of gender and age for therapeutic adherence after a cardiac event, including AMI as well, was found also by Dolansky et al. (45). The authors compared exercise adherence, measured as three exercise sessions per week, between men and women at different ages: exercise adherence proved constant across different age groups for women, whereas it was found higher in younger men compared to older men (aged between 70 and 86).

Social support

Concerning social support (N=10 articles), studies comparing male and female post-AMI patients are not so widespread; on the other hand, results focused on women can be found. Bowers e Buchanan (40) collected reflections and dialogues of six women affected by MI, and aged from 30 and 55 years, through guided autobiographical group intervention; the authors showed how social support, including need for companionship, emotional reassurance and understanding, was extremely important for the well-being after MI, in particular to compensate women's increased physical and emotional vulnerability. While social support from family and friends was reported as generally satisfactory, the participants reported a lack of attention and support from health professionals.

Similar results were obtained from the qualitative study by Sjöström-Strand and Fridlund (46) that relying on phenomenographic approach, focused on 14 post-AMI female patients. Following hospital discharge, the social support received from family members significantly reduced work and family stress; at the same time, a lack of social support by the medical staff was noticed. The results suggested the need to implement individualized treatment plans and self-help groups to express common concerns and promote the exchange of information. The importance of social support from family and friendship networks was highlighted also by the correlational, descriptive study by Kamm-Steigelman et al. (47), conducted with 59 women aged from 35 to 64, who had experienced AMI; such support, together with religious faith, was positively correlated with a decrease in depressive symptoms, greater satisfaction with their lives and greater psychological well-being. Also Murphy et al. (48) found an association between lack of social support in women after an acute cardiac event (in this case, AMI or coronary artery bypass graft surgery) and self-reported anxiety and depression in the year following the cardiac event.

Social support in women who experienced AMI was found correlated even to the progression of the disease itself. Wang et al. (49) showed that in a sample of 292 women, aged from 30 to 65 years, and hospitalized with AMI or unstable angina, the lack of social support increased the progression of coronary atherosclerosis. The progression of coronary atherosclerosis was measured as the change in mean luminal diameter from first to second measurements of 10 pre-defined coronary segments, and it was evaluated three-six
months after hospitalization and three years later. The authors found that even when controlling for age, smoking history, body mass index, menopausal status, and AMI diagnosis, significantly greater coronary atherosclerosis progression was present among socially isolated women and among those who lacked emotional support. High perceived social support was associated to a lower rate of atherosclerosis progression, in particular if women reported adequate interpersonal social relations and strong emotional support.

Regarding the differences between male and female post-AMI patients, five studies can be mentioned. The earliest is by Riegel and Gocka (50): the authors measured self-esteem, emotional distress, perceived health status, interpersonal dependence and social support among 32 men and 32 women, one and four months after hospital discharge. The results showed that women and men adapted themselves to the consequences of infarction in different ways and along different trajectories. Social support appeared to be the factor that contributed more to the adaptation of the women, while this was not for men. Moreover, men and women experienced similar levels of adaptation four months after the attack, although the trajectory differed in the two cases.

Kristofferzon, Lofmark and Carlsson produced a literature review (51) and two studies (52,53) on coping strategies and social support of women and men after MI. The literature review shed light on gender differences in social support received after MI: men appeared more likely to involve their spouses in their recovery, and reported more support from their spouses, compared to women. Women reported less social support up to one year after the event, compared to men, and less help with household tasks from informal caregivers. Also, women received less information about the disease and rehabilitation, and they perceived lack of belief in their heart problems from caregivers.

The two studies by the same authors relied on a sample of 74 women and 97 men, at the time of MI; the overall results showed that one month after MI, women reported lower physical and psychological quality of life than men. But one, four and twelve months after MI, women perceived social support from friends, grandchildren and the staff of the church; differently, men perceived more support from their partner. These findings confirmed to some extent the evidence summarized in the previous literature review of the authors (51).

Although the patterns of social support may show gender differences, the general levels of social support may not highlight the same differences, especially for younger ages. Bucholz et al. (54), in an observational study in USA and Spain, categorized 3432 patients aged less than 56 years as having low or moderate to high perceived social support using the ENRICHD Social Support Inventory; low social support was encountered in the 21.2% of the cases. The authors found that men and women had similar levels of social support at baseline; on average, patients with low social support reported lower functional status and quality of life and more depressive symptoms at baseline and 12 months after AMI. When adjusting for individual specificities, low social support was associated with lower mental functioning, lower quality of life, and more depressive symptoms at 12 months, not with worse physical functioning. Also, the authors did not find interactions between social support, sex, or country.

Coping strategies

Coping strategies are a very delicate issue for people affected by myocardial infarction. A patient’s coping style with stressful situations already influences the delay in seeking treatment for AMI symptoms; as recalled in section 4.1, the minimization of symptoms and the lack of acknowledgement of the possibility of a cardiac disease postpone the search for medical care at the onset of symptoms. The studies we selected on coping strategies of people who experienced AMI focus in part on gender differences and in part on women (N=7 articles).

Bogg, Thornton and Bundred (55), relying on a sample of 169 male and 51 female AMI patients of similar age, analyzed coping strategies six months after the infarction according to the Coping Inventory for Stressful Situations (56). The results highlighted significant gender differences: women relied more on coping strategies than men and were more likely to face the stressful event through emotion-focused coping strategies. Despite this, women experienced greater emotional difficulties and reported lower quality of life compared to men.
Along the same line, a study by Panthee et al. (57) showed that men on average used more problem-focused coping strategies than women, and that myocardial infarction patients who relied more on problem-focused coping strategies reported better quality of life than patients relying less on them.

The three studies by Kristofferzon, Lofmark and Carlsson (51-53) mentioned before for social support provided results also on gender differences in coping strategies of AMI patients. The literature review (51) reported that women used a variety of coping strategies, more intensively than men. Moreover, female patients were more likely to minimize the impact of the disease, to postpone the search for treatment and to avoid telling their health problems to others.

The other two studies by the same authors (52, 53) analyzing coping strategies through the Jalowiec Coping Scale (58) on a sample of 74 women and 97 men, confirmed the importance of gender differences at various stages after the infarction. One month after the event, women used more evasive and supportive coping and experienced a lower quality of life than men: women reported difficulties in handling the psychological consequences of the heart disease. The authors did not find statistically significant changes over time in most coping strategies for both sexes, except fatalistic coping, whose use decreased over time in men. Four and twelve months after the infarction, female patients relied on evasive coping more than male patients. Nevertheless, the most used coping strategies by both sexes during the year following the infarction were guided by optimism, self-reliance and a push to face events; the latter one showed positive consequences on the patients’ well-being in the long term.

A study linking coping strategies to gender differences in patients’ well-being after AMI was the one by Brink, Karlson and Alberg (59), focusing on 37 women (average age of 72) and 77 men (average age of 65) in the first five months after myocardial infarction. Although the infarction had negative consequences on the mental and physical well-being of all the patients, women proved to have a significantly lower physical quality of life than men. Moreover, while coping strategies grounded on fatalism negatively influenced the patients’ health-related quality of life, minimization had the opposite impact.

If gender differences in coping strategies play a part in gender differences in the well-being of AMI patients, women will be likely to follow a specific path towards adjustment after the infarction event. This was proved by White, Hunter and Holtum (60), who conducted a qualitative study on 5 women after their first MI, analyzing the collected data by means of Interpretative Phenomenological Analysis. In this study, adjustment was conceived as the perceptions women had of their own cardiac event, the impact of the infarction on women’s relationships with others and coping strategies they used to face the event. The results showed that women played down the severity of symptoms and the impact of infarction, expressing optimism and the hope that normality would have come back in their lives; this coping strategy could be linked to avoidance and minimization of the event, but also, as the authors stated, as a way of protecting others. The latter finding is a sort of repetition of what was already found for women’s delay in seeking treatment for symptoms and women’s search for social support: very often these patients do not want to bother others for their health problems, and this has implications on their physical and mental well-being during and after the experience of acute myocardial infarction.

Conclusions

The studies we summarized in this review report gender differences in the acknowledgement of AMI symptoms, in the pathway through medical care and recovery from AMI, and in the psychosocial adjustment characterizing patients’ life after the infarction.

Regarding the onset of symptoms, the studies on the issue of delay in seeking care for symptoms and in the access to health care have attributed gender differences partly to a lack of information, but especially to socially built factors. Among these factors, stereotypic beliefs of cardiac diseases as “male diseases” (not completely justified by the different levels of incidence of the disease in the two sexes) help reinforcing the perception of women’s symptoms as atypical. This kind of stereotypic beliefs modifies the patients’ and health professionals’ attitudes and behaviors towards acute
Factors affecting women's well-being during the experience of acute myocardial infarction: a literature review

myocardial infarction. As a consequence, women are less able to recognize AMI symptoms and to attribute them to a cardiac disease; moreover, they do not understand the importance of a timely access to medical care, underrating the threat for the health and delaying the search for treatment.

For what concerns the stage of medical treatment after AMI, the research indicates how women have a lower probability to undergo diagnostic tests and clinical treatment compared to men, even though women's older age may play a role in explaining this difference.

Gender differences in the experience of myocardial infarction emerge also in the psychosocial adjustment after the cardiac event. While men appear more worried about the repercussions the disease may have on their job and their financial situation, women face more difficulties with the required lifestyle changes and the physical consequences of the infarction. In fact women show lower quality of life than men, especially on the physical dimension of quality of life; fragility has also been observed in women's general health; moreover, women are more likely to experience anxiety and depression symptoms.

Concerning therapeutic adherence and self-care behaviors, female AMI patients feel less responsible for their lifestyle changes, compared to their male counterparts; this results in lower adherence, even if the effect of gender may be counterbalanced by the effect of age.

In the end, several studies show that quality of life after AMI is linked to coping strategies and perceived social support. Women affected by AMI try to keep control over the disease, to minimize the severity of symptoms, and to protect the significant others from the negative consequences of the infarction. Consistently with this, AMI female patients use more emotion-focused, evasive or fatalistic coping strategies; whereas problem-focused, more active coping strategies would probably be more appropriate to face the consequences of the acute cardiac event.

Compared to men, women rely more on social support; indeed, social support has a positive impact on the emotional and relational aspects of women's quality of life, acting as a buffer for psychosocial adjustment after the infarction.

Concluding, the results summarized in this literature review offer insights on factors affecting women's well-being through the experience of AMI. In particular, these patients' well-being could be increased by a timely access to medical care, and by more service quality in the whole clinical pathway. This would involve studying the representations that health professionals share concerning AMI, and verifying if these representations are distinguished according to the gender of the patients.

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The hypothesis of contact in nursing: a narrative review of the literature

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Abstract. Background and aim: In Social Psychology, in relation to the effects of contact, there are two theoretical strands apparently fighting against each other: to one side, the contact hypothesis of Allport according to which, the meeting between members of different groups can, if managed in favorable conditions, reduce prejudice, on the other side, the Social Identity Theory of Tajfel and Turner, according to which the comparison between people belonging to different groups may actually generate an attitude of ingroup favoritism and outgroup discrimination. The aim of this review was to analyze how the literature has dealt with the problem of contact with people from different cultures in relation to its outcomes taking into account the environment of nursing. Method. Systematic review. Results. There is sufficient evidence that contacts by race / ethnicity, present in nursing-education settings, in the relationship among nurse practitioners, and between nurses and patients, they produce discriminations and prejudices. The contact in the workplace shows however, also favorable outcomes, highlighting then contradictory results. Conclusions. The scarcity of material available in the literature and the inconsistency of results, both as regards to the effects of the contact in the training nursing, and as regards to the effects of the contact in relation to the quality of care provided, does not allow definitive conclusions to support the usefulness of the contact in nursing in terms of reducing prejudices and discriminations. It would therefore be advisable to investigate more deeply the effects of contact in the nursing environment.

Key words: intergroup contact, prejudice reduction, group salience, anxiety, discrimination, racial discrimination, equal opportunities, health professionals, nursing, nurses, healthcare.

Introduction

The globalized society puts more and more closely into contact people from different cultural backgrounds; this aspect, in particular, characterizes Western societies, where the extent of migration has growing in the last twenty years (1). The coexistence of people with different cultures has therefore become an issue that affects everyone, even those not directly involved in relationships with members of other ethnic or cultural groups (2). The meaning of intergroup contact, concerns the set of situations in which people belonging to different ethnic or cultural groups, interact each other. Usually the intergroup contact’s studies have focused their attention in understanding the effects of such interactions (3). Although the issue doesn’t involve all people in the same way, as it can be different levels of exposure and circumstances in which the contact takes place, it is undeniable that the contact has inevitable consequences (positive or negative) on interpersonal and intergroup relations. Social psychology is the scientific discipline that has always dealt with these consequences. On this topic, two are the main theories that have hypothesized and empirically tried to test two different and opposing outcomes of contact: on the one hand contributions to support the Willard Allport’s hypothesis of contact, who emphasize the positive effects of contact in terms of reduction
of the prejudice (4); on the other, the contributions that, starting from the Social Identity Theory of Tajfel & Turner, highlighted the possible negative effects on intergroup contacts: the possibility that intergroup contacts can arise intergroup biases that in turn cause conflicts and contrasts among groups (5).

Reworking the findings to which Thomas Williams had come in 1947, in his most representative work, The Nature of Prejudice, Gordon Willard Allport defined ethnic prejudice as “an antipathy based upon a faulty and inflexible generalization. It may be felt or expressed. It may be directed toward a group as a whole, or toward an individual because he is a member of that group” (6). According to the author, the meeting among members of different groups can reduce prejudice if it takes place under favorable conditions. He therefore identified four favorable conditions: 1) social and institutional support by norms and rules that promote and support tolerance; 2) positive interdependence among members; 3) equality of status and 4) intergroup cooperation and common aims among groups.

Later, several other studies have contributed to prove the validity of the contact hypothesis in terms of reducing prejudice in different contexts, developmental ages and historical periods (7-14); as well as towards groups traditionally stigmatized as the schizophrenics (15-17), or patients with AIDS (18, 19). However, the most convincing evidence in favour of contact theory is probably the result of the meta-analysis of Pettigrew and Tropp in which 515 studies, a total of 713 independent samples and more than 250,000 participants, were considered. The results were clear: the relationship between contact and prejudice was negative and highly significant (20).

However, according to the findings other authors do, the effects of intergroup contact not always turn out to have positive outcomes: in some cases the contact may lead to quite different endings. This outcome was first highlighted by Sherif and Sherif, that through the experiment called the “The Robbers Cave Experiment”, came to demonstrate that the existence of competitive purposes between two groups of Caucasian middle-class teenagers generated an intergroup conflict, characterized by favoritism towards their own group and to the detriment of the other (21). Tajfel and Turner will then return to the question of factors that aroused the intergroup conflict demonstrating that the real or just imagined confrontation with another group was enough to generate an intergroup bias. In their theoretical perspective, the group was, in fact, conceptualized as the “place of origin” whereby defend the people's social identity (22). Therefore, in an intergroup contest, people's behavior can be guided by the so-called ingroup bias, namely a feeling of favoritism towards the ingroup and to the detriment of the outgroup, to assert or defend their social identity (23, 24). According to this theory, thus, it is possible to hypothesize that the co-existence of different memberships, cultural in this case, within a certain social context, may give rise to conflicts and contrasts between groups (25-29).

From these theoretical premises it is understandable that especially motivational aspects involved in contact, such as cooperative or competitive purposes statement or defense of own social identity, that determine the contact’s outcomes in terms of an increase or of a reduction of prejudicial and/or discriminatory attitudes. However, what literature inspired by these theories has not yet enough considered is the influence of different contexts on the outcomes of contact. Working environment is one of the most important social context in which the contact with people with different cultures occurs, today more than ever before. In working context people from different cultures often come into contact in order to achieve personal or professional goals.

There are several contributions in the literature that have investigated the effects of contact in various work contexts. The findings are often contradictory and not always positive. According to Hamberger and Hewstone for example, the contact within the work context does not help to curb prejudices because individuals tend to believe that such of relations do not reflect any genuine link; moreover, ethnic minorities in the workplace can sometimes be considered as rivals in terms of access to resources and jobs (30). In general, however, there is not much studies about the healthcare settings, in particular when referring to the working environment, where health professionals (doctors or nurses for example) find themselves working in close contact. Paradoxically, against this limited interest, the healthcare settings are now becoming even in Italy one
of the working environments where contact between people from different cultural backgrounds is more and more common. The intergroup contact in health care settings is actually no longer characterized by only the ratio (classical) between users and health professionals, but also among different health care providers. Moreover, the relations among the various actors on the healthcare setting can be particularly complex not only because of cultural bias, but also because of concepts of care, health and disease, can assume meanings very different from culture to culture. The aim of this review was to analyze the contact literature, with reference to the analysis of contact of nurses from different cultures in the workplace. The choice of the specific professional figure of the nurse is justified by the fact that it is predominant in terms of numbers among all the health professionals; moreover the massive migration of nurses to labor markets with greater appeal and availability of jobs, justify the decision to deepen this field of research poor of contributions in the literature.

Method

Aim

This review was aimed to analyze how the literature has dealt with the problem of the contact between nurses from different cultures in relation to its outcomes.

Strategy of research

A systematic review was conducted through the following search engines: PsycINFO, MEDLINE, CINAHL. The following keywords were used in various combinations with the Boolean operator “AND”: intergroup contact, prejudice reduction, group salience, anxiety, discrimination, racial discrimination, equal opportunities, health professionals, nursing, nurses, healthcare. Were taken into account only the publications made from January 1999 to August 2014. Only one article derogate from the time limits: an article of 1988 is cited for both the relevance of setting nursing investigated, and the results produced.

The selected articles were consulted manually to identify further useful contributions to broaden the research.

Inclusion criteria

Were considered only articles about the intergroup contact effects on racial or ethnic prejudice related to the nurses working environment (hospitals, nursing homes, personal care services) regardless of cultures nurses belonging. Were excluded articles about intergroup contact effects related to other kinds of social groups (eg. gender, sexual orientation, social class, religious, political, physical or psychological disability); criterion respected even when the nurses’ contact were the topic of the inquiry. Were included publications with various research designs (qualitative, quantitative, or mixed), methods of data collection (qualitative and quantitative), and methods of data production (parametric and non parametric test). Were included only publications in English or Italian.

From the 62 retrieved articles, 19 articles were reviewed and critiqued for the purpose of this literature research.

Results

According to Kingma, the migration of nurses is growing year after year. Thousands of nurses every year emigrate in search of better salaries and/or working conditions. The approach with the new realities usually put in contact nurses belonging to different cultures (31).

There have been lead several works to understand the effects of intergroup contact among nurses from different cultures; the findings show uncertain outcomes.

A first general overview of the conditions of overseas nurses emigrated in search of work was offered by a review of Newton et al. The authors underlined that usually the major reasons for migration are related to improved income and professional stature, perspectives, however, often disregarded by contact with the new realities. Cultural displacement appears to largely stem from communication and language differences, feelings of being an outsider and differences in nursing practice. The deskilling process and discrimination were also key players which hinder transition and demoralize many of them (32).
Several contributions refer to the British healthcare setting where the nurses’ contact from different cultures does not seem to produce positive results in terms of reducing prejudice. According to Likupe, African nurses (and in general overseas nurses from minority outgroups) were discriminated from both the economic treatment, and from the conditions of employment; they usually reported negative work experiences (33). More specifically, according to Henry, nurses from Ghana denounced the difficulties and impediments in career progression, mainly due to discrimination (34), and even bullying as claimed by Allan and Larsen (35). Alexis et al. reported that nurses belonging to ethnic minorities experienced both positive and negative, but within a context that, in their opinion, tended to devalue them as professionals (36). By the findings of Larsen, discriminatory attitudes towards nurses belonging to ethnic minorities adversely affect the chances of career (37). In some cases, overseas nurses were excluded from the high level practical techniques, with the result that they gradually lost in skill; an aspect that in fact expanded the technical gap with their colleagues and that caused a lack of consideration towards them (38, 39).

The following contributions are all based on the American healthcare setting where, according to Chandra, the discrimination in the workplace would be one of the most serious and important problems to deal for overseas nurses (40). The contribution of Villaruel et al. raised problems due to racial diversity: obstacles encountered and identified by the participants (Hispanic nurses) consisted in higher costs, institutional barriers, perceived negative behaviors (both by trainers and colleagues), especially towards cultural values such as family’s importance or gender (41). Similar results were obtained by Pittman et al. who reported data about the perceived treatment in the U.S. workplace of foreign-educated nurses. The results showed that 51% reported to receive insufficient orientation; moreover the 40% reported at least one discriminatory practice with regard to wages, benefits, shift work and unit assignments. In general, these participants reported to have received an inequitable treatment compared with their local colleagues. Authors concluded that the negative attitude suffered by overseas professionals in the U.S. workplace aroused a strong sense of despair that led them to a progressive deskilling (42). Xu et al. reported the experiences of Chinese nurses. The authors concluded that discrimination experienced by Chinese nurses were due to racial, language and culture differences; also emphasized that the lack of support for them by the institutions, provoked in them an out-and-out marginalization feeling (43). Negative experiences were also reported by Dicicco-Bloom from on a sample constituted of Indian nurses; she highlighted acts of racism and marginalization based on both gender and skin color (44).

The overseas qualified nurses have become an important part of the Australian nursing workforce: Brunero and colleagues showed that Australian healthcare setting became over the years more and more receptive to overseas nurses (45). It has also been the setting where the Mapedzahama et al. study’s took place; in their interviews (14 African nurses) data showed that participants, in more or less explicit ways, lived experiences of everyday racism. In particular, data showed that the dominance of a white racial frame tended to regard them as unknowing, incompetent, suspect and considered them as a work unit that only to be tolerated (46). By the findings of Omeri, the discrimination’s issues are present until the recruitment for hiring. The author asserts that the discrimination continued in the workplace, where overseas nurses reported negative experiences almost to the point to imply also psychological implications (47). Same conclusions were stressed by Hawthorne, who stressed the isolation’s experiences originated from discrimination attitudes reported by overseas nurses (48).

According to the studies of other authors, however small in number, the contact can instead generate positive effects towards prejudice.

The first interesting contribution is provided by Finchilescu et al. The study was conducted in South Africa almost at the end of apartheid system (which actively discouraged intergroup contact): this context was thus very interesting to measure the effect of contact and this is the reason why it was decided to include in the review this study that derogate from time criteria. The study, that involved 113 nurses from four private hospitals, found a positive correlation between the quality of cross-race friendship and the race attitudes. This quality was controlled on two hospit-
tals that accepted nurses belonging to different races (specifically whites and Indians in the first hospital, blacks and Indians in the second), and two hospitals not allowing racial contact: (one accepted only white nurses, the other only blacks). The survey was conducted through individual questionnaires. The findings showed that nurses in hospitals with interracial contact perceived integration into healthcare setting as much more positive than nurses in hospitals without contact. However, in the two hospitals integrated, positive attitudes improved significantly only for whites on the Indians, while between Indians and Blacks emerged stronger attitudes of ethnocentrality demonstrating that the negative attribution of the intergroup contact was not completely deleted (49).

Voci and Hewstone conducted a study in an Italian healthcare setting (health professionals including Italian nurses from 3 hospitals near to Milan), to improve the understanding of how and when in this area, the contact may be more effective in reducing prejudice. The results showed that the contact in the nurses workplace had a positive effect on attitudes towards foreign colleagues mediated by the group salience. Nevertheless, contacts showed positive effects both to the out-group in general (immigrants), and to the recognition of rights for immigrants in particular (50).

Also the study conducted by Capozza et al. involved Italian nurses and other health professionals coworkers, both Italian and immigrants. The findings showed that cooperative contact at work between Italians and immigrants improved intergroup attitudes reducing anxiety and increasing empathy for immigrants, both inside and outside of the workplace, where actually took place the contact (51).

Conclusions

The scarcity of contributions available in the literature probably contributes to an important limitation of this review: it doesn’t allow definitive findings on contact effects in terms of reducing prejudice and discrimination in relation to nurses. The reasons for this gap could be partially attributed to the lack of synergy between the different scientific disciplinary sectors (nursing and psychology) and specifically, perhaps, to the lack of knowledge of Allport’s contact theory and its possible important implications in working environment of the nurses. However, the analysis of the literature allows to give some answers to the research purpose. There is enough evidence to support the fact that the discriminatory system seems to be present in various forms in the nursing workplace. On the other hand there is no lack of contributions, particularly in Italy, that highlight the contact experiences that generate a reduction of prejudice. This complex issue deserves further investigation. It isn’t so simply to change people’s prejudiced attitudes and it doesn’t happen overnight. Reducing racial prejudice and racism is a complex task that varies from community to community. To reach this purpose it would be appropriate to try to experiment with appropriate strategies to promote knowledge and thus reduce the underlying prejudice that seems to be present also in the nurses once in contact with colleagues from different cultures.

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The Health Professions: developments in legislation and training, from student application to employment

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Abstract. Background and aim: The legislation and training of health workers have undergone various changes during the course of the last 90 years. In addition to the Degrees in Medicine and Surgery, and in Dentistry, with a duration of six years, the Faculty of Medicine and Surgery also offers three-year degree courses in the 22 health professions, including Nursing, Obstetrics, Physiotherapy, Speech Therapy, Laboratory work, Radiology, Neurophysiopathology and Dietetics. Method: A data research study was carried out over the last 18 years, on the legislation and training requirements for health workers, including the availability of University places and the applications presented, as well as the number of university lecturers and the employment opportunities. Results: Data reveal a steady increase from 1997 to 2011 in the number of student admission applications for Medicine and Surgery as well as for the other Health Professions, reaching a peak in 2012 and currently continuing to fall. The trend is different for lecturers, who, apart from a slight increase up to 2008, have remained at around 9400 in number since 1997. Conclusions: The drop in applications for places would appear to be linked to the fall in employment in the last six years, from 86% in 2007 to 62% in 2012. Although the health sector is still in first place among all the other sectors, careful reflection would seem to be warranted on the part of the Regions and the Ministries of Health and University Education when defining the annual training requirements for each of the 22 Health Professions

Key words: health professions, programming of student numbers, students, lecturers, employment

Introduction

The general reform of university studies starting from 1990 saw the completion of the juridical legislation covering numerous health professions for which degree courses have been added to the Faculty of Medicine and Surgery (1). In addition to the Degrees in Medicine and Surgery, and in Dentistry, with a duration of six years, the Faculty of Medicine and Surgery also now offers three-year degree courses in the 22 health professions, including Nursing, Midwifery, Physiotherapy, Speech Therapy, Technician of Laboratory, of Radiology and of Neurophysiopathology. Although there is a definite distinction regarding the duration of the different degree courses, the same cannot be said for the codification of the various professionals, previously distinguished as graduates and non-graduates.

At present, the distinction, not yet completed or codified, regards on the one hand the medical profession (Physicians) and on the other the above mentioned health professions commonly and erroneously defined as “non-physicians or else paramedics” (2-5). In the health sector other professions are accepted as being analogous to that of the Physician, such as the Pharmacist or the Veterinary surgeon, as well as the Biologist, the Chemist and the Psychologist, the training of whom has always been of four years’ duration or more. The latter were codified as “graduate personnel”, to distinguish them from both Physicians and Health Professionals. The continuous evolution of the training
system over the course of the years (6-8), leading to the current awarding of a degree certificate to all students, has apparently given rise to confusion concerning the definition of degree certificates but not concerning the distinction between the four training routes:
- a first degree (Bachelor’s), of three years’ duration, for the 22 health professions;
- a post-graduate degree, for the 22 health professions, of two years’ duration subsequent to the 3-year bachelor’s degree - the so-called “3 + 2”;
- a single-cycle degree specialising in Dentistry, Veterinary Medicine or Pharmacy, of five years’ duration;
- a single-cycle degree specialising in Medicine and Surgery, of six years’ duration.

This structure was changed once more with Ministerial Law 270/2004, which, among other things, replaced the “Specialist Degree” with the “Laurea Magistrale”, the Italian equivalent of the Master’s Degree, and changed the duration of the Degree course in Dentistry from five to six years.

The subject of this analysis is the training of personnel in the 22 Health Professions requiring a three-year Bachelor’s degree and a subsequent two year Master’s Degree, as stipulated in art. 6 of Law no. 43 of 1st February 2000 (9-12). The same law also “recognised” one year Master’s Degrees (13). Hence the term “Health Profession” covers the 22 existing professional profiles, excluding those of Physician, Dentist and Veterinary. However, the set of all the above mentioned professions refers to the definition of “health workers”, both Physicians and non-physicians.

The number of health workers with limited-number university training

According to the data gathered from the various professional orders, boards and associations for the year 2012 and reported in Table 1, health workers who for several years have been subject to limited-number or programmed university training (14-16) are now number over 1 million.

The percentage of university places on offer compared to the number of operators can also be considered as an indicator of the turnover, which in general is estimated at around 2.7%.

The “profiles” of the 22 Health Professions were definitively and completely regulated with specific Ministry of Health laws between 1994 and 1998; they were subsequently grouped into four areas and classes in accordance with the Ministry of Health law of 29th March 2001 and the Ministry of University Education law of 2nd April 2001, as seen in Table 2.

### Historical and legislative evolution prior to 1970

The present-day 22 professions derive from laws enacted 90 years ago, subsequently evolving into two branches: the “auxiliary branches of the health professions” and the “auxiliary health professions”, which in 1999 were denominated as “Health Professions” (2-4). The current legislative system and the relative national training schemes began with Nurses, for whom Royal Decree no. 1832 of 15th August 1925 envisaged the

<table>
<thead>
<tr>
<th>Health Profession</th>
<th>Those enrolled in a professional register and registered operators</th>
<th>University Places</th>
<th>% ratio of places to no. of operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>354,143</td>
<td>10,023</td>
<td>26,1%</td>
</tr>
<tr>
<td>Dentistry</td>
<td>59,437</td>
<td>949</td>
<td>2,5%</td>
</tr>
<tr>
<td>Veterinary</td>
<td>30,375</td>
<td>774</td>
<td>2,0%</td>
</tr>
<tr>
<td>Nurses</td>
<td>401,694</td>
<td>15,999</td>
<td>41,7%</td>
</tr>
<tr>
<td>The other 20 professional roles</td>
<td>227,796</td>
<td>10,619</td>
<td>27,7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,073,445</td>
<td>38,364</td>
<td>3,6%</td>
</tr>
</tbody>
</table>
Table 2. Professional profiles and classes of degree of three-year degree courses in the 22 health professions
Grouped into four areas in accordance with the Ministry of Health law of 29th March 2001 and the Ministry of University Education law of 2nd April 2001.
Health workers according to profiles, places in Degree Courses and sites of Courses  A.A. 2014-15

<table>
<thead>
<tr>
<th></th>
<th>Workers</th>
<th>Places</th>
<th>Courses</th>
<th>Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURSE AND MIDWAFERY</td>
<td>419.805</td>
<td>16.915</td>
<td>92</td>
<td>281</td>
</tr>
<tr>
<td>Nurse</td>
<td>391.219</td>
<td>15.701</td>
<td>43</td>
<td>216</td>
</tr>
<tr>
<td>Pediatric nurse</td>
<td>10.475</td>
<td>298</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Midwife</td>
<td>18.111</td>
<td>916</td>
<td>38</td>
<td>52</td>
</tr>
<tr>
<td>REHABILITATION</td>
<td>109.000</td>
<td>4.874</td>
<td>144</td>
<td>207</td>
</tr>
<tr>
<td>Educator</td>
<td>31.150</td>
<td>667</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>55.000</td>
<td>2.213</td>
<td>39</td>
<td>87</td>
</tr>
<tr>
<td>Speech therapist</td>
<td>8.700</td>
<td>687</td>
<td>26</td>
<td>31</td>
</tr>
<tr>
<td>Orthoptist</td>
<td>4.500</td>
<td>257</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>Podiatrist</td>
<td>1.200</td>
<td>130</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Technician of psychiatric rehabilitation</td>
<td>3.450</td>
<td>333</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Neuro-therapist for developmental age</td>
<td>4.000</td>
<td>333</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>1.000</td>
<td>254</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>TECHNICAL DIAGNOSTIC</td>
<td>56.846</td>
<td>2.146</td>
<td>92</td>
<td>125</td>
</tr>
<tr>
<td>Audiometrician</td>
<td>2.000</td>
<td>60</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>28.000</td>
<td>959</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>Neurophysiopathology technician</td>
<td>1.500</td>
<td>120</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Radiology Technician</td>
<td>25.346</td>
<td>1.007</td>
<td>39</td>
<td>60</td>
</tr>
<tr>
<td>HEALTH CARE TECHNICIANS</td>
<td>18.670</td>
<td>1.666</td>
<td>87</td>
<td>95</td>
</tr>
<tr>
<td>Dietician</td>
<td>3.870</td>
<td>402</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Dental Hygienist</td>
<td>6.400</td>
<td>677</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>Audio prosthesis technician</td>
<td>3.400</td>
<td>258</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Cardiocirculatory physiop. technician</td>
<td>3.000</td>
<td>188</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Orthopaedic technician</td>
<td>2.000</td>
<td>141</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>PREVENTION</td>
<td>25.169</td>
<td>1.007</td>
<td>37</td>
<td>42</td>
</tr>
<tr>
<td>Sanitary Assistent</td>
<td>6.169</td>
<td>276</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Technician for prevention...</td>
<td>19.000</td>
<td>731</td>
<td>27</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>629.490</td>
<td>26.608</td>
<td>452</td>
<td>750</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered workers</td>
<td>451.320</td>
<td>72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not registered workers</td>
<td>178.170</td>
<td>28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurses</td>
<td>401.174</td>
<td>64%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>227.796</td>
<td>36%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
possibility to set up boarding schools with two-year courses for Nurses at “the University Faculties of Medicine and Surgery, the local councils and the public institutions, … as well as committees formed for the purpose”. Article 7 also stipulated the provision of “theoretical and practical instruction imparted by Physicians of recognised merit, by the school Director and by Head Nurses”.

In particular, the qualifications required for the school were a two-year nursing diploma, a qualification as Director obtained after a third year of specific training, in accordance with art. 9, and at least two years’ experience in charge of a hospital ward. The above mentioned institutions could, in accordance with art. 12, set up schools specialising in Nursing with a one-year course for visiting health assistants.

The professions were disciplined according to Law no. 1264 of 23rd June 1927, and by the subsequent executive Royal Decree no. 1334 of 31st May 1928, with the identification of the “auxiliary branches of the health professions” of Dental technician, Optician, Orthopaedic technician as well as the already legislated role of nurse, also including the separate specialisations of Masseur and Head lifeguard at hydrotherapy establishments.

The executive regulations regarding training were approved in detail by royal decree no. 2330 of 21st November 1929.

This two-tier teaching arrangement for nurses, with a basic course followed by a second course of specialization, is still in operation; over the years it has been extended to the 20 other subsequently defined health professions, with periodic legislative updating and improvements.

The five years of legislation from 1925 to 1929 were included in royal decree no. 1265 of 27th July 1934, the “Complete set of health laws”, which also regulated the auxiliary profession of midwife, later referred to as obstetrician in accordance with Law no. 2647 of 20th December 1937. Art. 100 of the above mentioned royal decree 1265 introduced the term “professional nurse”; art. 130 authorised the universities and other public institutions to open schools for the auxiliary health professions of nurse and health assistant.

Regarding training, some years previously art. 20 of royal decree no. 1592 of 31st August 1933 (the “Complete Set of Laws on Higher Education”), authorised the setting up of special-purpose schools (SDAF in Italian), with the following subsequent modifications:

- Royal Legislative Decree no. 2128 of 15th October 1936, for the establishment of schools of Midwifery at university clinics for those already qualified as Nurses;
- Royal Decree no. 1631 of 29th September 1938, for the institution of courses at hospital facilities for “laboratory and radiology technicians”;
- Law no. 1098 of 12th July 1940, art. 7, which added to the nursing profession the role of “Children’s Nurse”.

The requisite for admission was the middle school or technical school leaving certificate (obtained in Italy after 3 years’ study at middle high school).

This arrangement lasted for around 30 years, until 1968, when a further definition of the professions and their relative training was approved under Law no. 132 of 12th February 1968, the so called “Mariotti Law” (named after the Minister of Health Luigi Mariotti) and the subsequent applicable presidential Decrees nos. 128, 129 and 130 of 27th March 1969 regarding the organisation of hospitals, university clinics and their personnel. Other professions were envisaged, such as the Rehabilitation Therapist and the Dietician.

The relative training courses taking place in hospitals varied in duration from six months to three years and the requisite qualification for admission went from the middle school diploma to the high school leaving diploma.

In addition there existed a considerable degree of autonomy in relation to the programmes, the testing of students and the diplomas issued, regarding both the differing sites of the schools and the various types of profession.

The courses involved hospital schools, university schools and SDAFs (special purpose schools).

**Mixed training – at regional and university level**

With the aim of legislating the training system then in force, art. 34 of Law no. 118 of 30th March 1971 transferred to the newly instituted regions the task of “vocational training for the practising of auxiliary health professions and of auxiliary skills”, later
regulated under presidential Decree no. 10, art. 1, letter f of 15th January 1972.

Regional training concerned above all and in particular the professions of Nurse, Sanitary Assistant, Radiology technician and Laboratory technician, whereas for other professions such as that of Midwife, Rehabilitation Therapist, Speech therapist, Orthopaest, Neuropsychiopathology technician, Dietician and Physiopathology technician, the training was predominantly at University level, at the SDAFs (special purpose schools). The courses varied in duration from two to three years. The admission requirements also varied, from the two-year to the five-year high school leaving certificate.

Recognition of the various professions was defined under presidential Decree no. 761 of 20th December 1979, “The juridical status of personnel of the National Health Service”, and Ministry of Health Decree no. 30 of 26th January 1988, which updated the list of professions identified in 1969. Once the various professions were identified, the Ministry of Health Decree of 30th January 1982 established the requisites for qualifying for the professions under art. 81:

“diploma from university special school …; certificate of qualification course … of at least two years’ duration, taken under the aegis of the National Health Service, to which access is gained with a high school leaving certificate».

In particular, for the university schools and SDAFs (special purpose schools), art. 9 of presidential Decree no. 162 of 10th March 1982 (“Reorganisation of the special purpose schools, specialisation schools and enhancement courses”) established the legal recognition of the relative diplomas as qualifications for the exercising of the corresponding profession. However, there remained a discrepancy between one Region and another and between one University and another regarding both programming and the duration of courses (two or three years).

This discrepancy was tackled with Law no. 341 of 19th November 1990 (“Reform of the university teaching system”), which among other things abolished the regional schools and SDAFs (special purpose schools), with a conversion to university diploma courses, thus for the first time defining a uniform and homogeneous system of the various training pathways.

**Education with university diplomas**

The reform carried out under art. 1 of Law 341/1990 stipulated for the universities four different training levels with the following diplomas:

- University Diploma (UD);
- Degree (D);
- post-diploma certificate (PDC);
- PhD.

The UD for training of the Health Professions was inserted into the Faculty of Medicine and Surgery with the aim of creating national educational uniformity and of aligning with European Union laws and employment prospects. A further development for university education and the regulation of the health profession profiles followed Legislative Decree no. 502 of 30th December 1992 (“Reorganisation of the discipline regarding health, in accordance with art. 1 of Law no. 421 of 23rd October 1992”. Art. 6, paragraph 3, established two fundamental principles: the identification of the professions on the part of the Ministry of Health and the relative training on the part of the Ministry of University Education (4). This legislation sanctioned the conclusion of training on the part of regional schools, and the university was recognised as the only training channel, with the stipulation of agreements between Regions and Universities and between Universities and local health authorities.

**Regulation of the professions and vocational training**

Between 1994 and 1995 the Ministry of Health identified and regulated with specific laws 14 professional profiles, with the integration of eight others in the subsequent period of 1997-98, whereas the Ministry of University Education law of 24th July 1996 defined the respective «university teaching arrangements for the university diploma courses for the health sector» (6) and the subsequent law of 29th September 1997 established the «qualification requisites of the structures».

These laws, issued concomitantly by the Ministries of Health and University Education, establish for each profession the same type of teaching arrangement at national level with a duration of 4600 hours, 1600 for theory and 3000 for practical technical traineeship.
The technical and practical training relating to the Scientific Disciplinary Sectors (SDS) F23/A-F is entrusted according to the category “teachers under contract”, to lecturers belonging to the specific professional profile of the course, thus ensuring that the training consists partly of practical technical traineeship assigned to the specifically nominated “coordinator”, a lecturer on the course belonging to the corresponding professional profile. Particular attention is reserved for practical technical training for “know how” and traineeship, taught and guided by tutors of the specific profession.

A further stage in juridical and educational regulation was Law no. 42 of 26th February 1999, which states: «The appropriate field of activity and responsibility of the health professions in accordance with article 6, paragraph 3, of legislative decree no. 502 of 30th December 1992 and subsequent modifications and integrations, is determined by the specifications of the institutive Health Ministerial Decrees (DM) for the relative specific professional profiles and the teaching arrangements of the respective university diploma courses and post-basic training, as well as the specific ethical codes, save for the competences envisaged for the medical professions and for the other health professions for which a degree certificate is required, with reciprocal respect of the specific professional competences».

The professional profiles, in order of date of law (DM), are as follows:

1) Dietician (DM 744, 14-9-1994);  
2) Physiotherapist (DM 741, 14-9-1994);  
3) Dental hygienist (DM 669, 14-9-1994);  
4) Nurse (DM 739, 14-9-1994);  
5) Speech therapist (DM 742, 14-9-1994);  
6) Orthoptist/ophthalmology assistant (DM 743, 14-9-1994);  
7) Midwife (DM 740, 14-9-1994);  
8) Podiatrist (DM 666, 14-9-1994);  
9) Orthopaedic technician (DM 665, 14-9-1994);  
10) Audiometrician (DM 667, 14-9-1994);  
11) Audio prosthesis technician (DM 668, 14-9-1994);  
12) Radiology technician (DM 746, 26-9-1994);  
13) Laboratory technician (DM 745, 26-9-1994);  
14) Neurophysiopathology technician (DM 183, 14-3-1995);  
15) Neuro- and psychomotor therapist for developmental age (DM 56, 17-1-1997);  
16) Technician for prevention in the occupational environment (DM 58, 17-1-1997);  
17) Occupational therapist (DM 136, 17-1-1997);  
18) Sanitary assistant (DM 69, 17-1-1997);  
19) Paediatric nurse (DM 70, 17-1-1997);  
20) Cardiocirculatory physiopathology and cardiovascular perfusion technician (DM 316, 27-7-1998);  
21) Educator (DM 520, 8-10-1998);  
22) Technician for psychiatric and psychosocial rehabilitation (DM 182, 29-3-2001).

The latter two were regulated under a single profile of Psychiatric and psychosocial educator and rehabilitation technician (DM 58, 17-1-1997).

Conversion of university diplomas to degrees

Meanwhile, training was evolving at European Union level, following EU agreements signed by the Ministries of Higher Education and of University Education in Paris in 1998 and in Bologna in 1999 (16), leading to the obsolescence of the UD. With Law no. 509 of 27th November 1999, the Ministry of University Education approved the “Regulation of teaching autonomy in the universities”, instituting the so called “3+2” training system. The aim was to arrive at a wide-sweeping scientific and cultural development guaranteeing the circulation of citizens and occupational opportunity in the various countries. The aim was to create “vocational training in series” through the acquisition of “university training credits” (UTCs) in line with the demands of the labour market. A UTC corresponds to 25 hours of “student work”, with the exception of 30 hours for the courses of the first class for Nurses and midwifery because of EU stipulations (16).

Art. 3 of the law stipulates the issuing of the following first- and second-level certificates:

• Degree (D), equal to 180 UTCs in 3 years;
• first-level Master’s Degree, equal to 60 UTCs, in 3 + 1 years;
• post-graduate Degree (PGD), with 300 UTCs in 3+2 years;
• second-level Master’s Degree, 360 UTCs in 3+2+1 years;
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Then came the law of 2 April 2001 issued by the Ministries of University Education and of Health envisaging four “classes of degrees for the health professions”, as shown in Table 2, including study courses with partially the same general basic training objectives, together with qualifying and professionalising aims for each specific profile.

The degree classes are divided as follows:

- the health professions of nurse and midwifery;
- the health professions of rehabilitation;
- the technical health professions, divided into assistential and diagnostic areas;
- health professions of safety and prevention.

The passage of the UDs to Degree status slightly changed the teaching arrangements, with a reduction in the hours of traineeship and an increase in “autonomy”. Whereas on the one hand this encouraged the in-depth study of disciplines characterising the scientific identity of the specific areas, on the other hand it led to a reduction in the minimum number of hours of training common to all the areas, which had been guaranteed by the UDs.

Two-year post-graduate degrees and Master’s Degrees

The development in the teaching of the health professions was reinforced by Law no. 251 of 10th August 2000, which formally defines the role of directors. This function was already envisaged in the above mentioned Royal Decree 1265 of 1934, art. 20 of which envisaged for nurses «a third year of study for a directing qualification». In 1965 the universities set up SDAFs (special purpose schools) for directors of nursing assistance (DAI, IID, DDSI) which were transformed into post-graduate degrees with the Ministry of University Education law of 2nd April 2001.

There followed the Laws of 9th July and 1st October 2004, which instituted courses for each of the four classes of degree, assigning a total of 1122 places at 17 universities. In total, in the 11 years from 2004 to 2014, 20,215 places were assigned against the demand for 20,385 form the regions, with an average of 1838 places on offer each year.

The proportion of the annual average of 22,045 places for the three-year degrees is equal to 8.3%.

Contemporaneously, various universities enacted one-year Master’s degree courses for the functions of coordination, in substitution of the old analogous training pathways for the functions of Head Nurse and Chief Technician, assigning around 2500 places at national level.

Law no. 43 of 1st February 2006 was issued with the aim of setting up professional registers and orders for the Health Professions; although the part referring to the institution of the orders was not applied, art. 6 of this law definitively and in its entirety sanctions the correspondence between first –level university degrees, the one-year Master’s degree subdivided among coordination and specialist functions and the second-level post-graduate degree for directional and teaching functions.

New university reform from 2004 to 2009

The above mentioned training system underwent further reform by the Ministry of University Education with Law no. 270 of 22nd October 2004. Among the main reasons for the reform was the need to better align professional training protocols with the demands of the labour market. To this end, the Ministry of University Education laws of 11th and 23rd October 2004 entrusted the definition of the proposals for the teaching arrangements of the various classes of degree to seven specific technical working groups, composed of representatives of the university and work environments (12). The Health Professions were entrusted to technical working group 2, “Health sciences”, completing the task in 2005.

Of the common salient points, 60 UTCs were allotted for traineeship, 30 UTCs for professional training differentiated for each of the 22 professional profiles, in relation to the respective Disciplinary Scientific Sectors MED/45-50 ex F23/A-D, transformed by the Ministry of University Education Law of 4th October 2000. In addition, the denomination of post-graduate degree was re-denominated as the Laurea Magistrale, thus avoiding any confusion with the schools of medical specialisation and with the post-graduate (specialising) Master’s degrees.
In application of this regulation, the law of 19th February 2009 was issued jointly by the Ministries of University Education and of Health.

**Validation and recognition of certificates already obtained**

To conclude the legalisation process, in 2011 the Ministries of University Education and of State Education jointly issued the Law of 11th November 2011 for the “Validation of diplomas from special purpose schools, instituted in accordance with presidential Decree no. 162/1982, of three-years’ duration, and of university diplomas, instituted in accordance with Law no. 341/1990 and of the same duration, of degrees prior to ministerial Law 509/1999 and to degrees prior to ministerial Law 270/2004, enabling participation in public calls”.

However, as an exception for the Health Professions only, two-year diplomas can also be recognised that are among those stated as being eligible for validation by the laws issued by the Ministry of Health and the Ministry of University Education of 27th July 2000. This replaced and effectively invalidated the procedures of “Re-conversion of credits” set up by some universities (7 out of 39) in 2001, with many doubts as to the advantages for students, as has already been pointed out. (17).

**Programming of student numbers**

The study courses of the Faculty of Medicine and Surgery, according to Law no. 264 of 2nd August 1999, “Legislation regarding access to university courses”, must correspond to the indications of prevailing EU laws and to the recommendations of the EU stipulating teaching standards requiring the possession of specific requisites.

The introduction of programmed limited-number access to university courses stems from the necessity to guarantee two aims.

The first of these aims is linked to the quality of technical and practical teaching in specific health structures, which in general can accommodate only a limited number of students if adequate teaching levels are to be guaranteed.

The second is related to the objective of guaranteeing adequate labour opportunities, since the type of teaching protocol, designed for a specific professional goal, does not allow for its multidisciplinary use, as happens for other courses of study such as Literature, Economics or Jurisprudence. For this reason, specific regulations were issued with Legislative Decrees no. 502, of 30th December 1992 and no. 229 of 19th June 1999, the “Reorganisation of health discipline”, which, with art. 6, regulated the collaboration between regions and universities for the definition of special agreement protocols as to the use of structures and personnel, and for the definition of teaching requirements for professionals needed to guarantee cover of health and social assistance activities (18).

The number of places to be assigned for each Region for each Profession is decided on the basis of consultation between the Ministry of Health, the Regions and the Federations and Associations of the Health Professions (Table 3).

This decision, which according to Law 264/1999 should have been made by 30th April, was reached in effect at the end of June. In accordance with the Ministry of University Education, the allocation of places for each course and for each university was based on the respective training potential, with the issuing in the first few days of July of the corresponding Laws based on the opinions of a special technical board set up with a Ministry of University Education law. University admission procedures were started up in mid-July, with admission examinations in the first week of September, thus guaranteeing a smooth start to teaching activities in October. The determination of the number of places to be assigned and their division were at first subject to divergence and discussion among the regions and categories, although for some years they have been working towards relatively workable solutions. In general, reference is made to a turnover of 4%, which is a mean value (see Table 1) taking into account academic mortality and interregional mobility as well as the particular demands of some professions that are undergoing occupational evolution.
Table 3. The number of places to be assigned for each Region and for each Profession is decided on the basis of consultation between the Ministry of Health, the Regions and the Federation and Association of the health profession

DEGREES COURSES OF HEALTH PROFESSION AA 2014-15
Places requested by the Region and by professional Association. Places made available by Universities and student’s applications

<table>
<thead>
<tr>
<th>Developed by A. Mastrillo</th>
<th>Operators</th>
<th>Places by Regions and Health Ministry</th>
<th>Associations and Federations</th>
<th>Made available by University Ministry</th>
<th>Student’s Applications</th>
<th>Difference University/ Regions</th>
<th>Difference Regions/ Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>391,219</td>
<td>62,1%</td>
<td>15,649</td>
<td>17,908</td>
<td>62,3%</td>
<td>20,672</td>
<td>63,5%</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>55,000</td>
<td>8,7%</td>
<td>2,200</td>
<td>2,166</td>
<td>7,5%</td>
<td>2,057</td>
<td>6,3%</td>
</tr>
<tr>
<td>Educator</td>
<td>31,150</td>
<td>4,9%</td>
<td>1,246</td>
<td>741</td>
<td>2,6%</td>
<td>1,410</td>
<td>4,3%</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>28,000</td>
<td>4,4%</td>
<td>1,120</td>
<td>901</td>
<td>3,1%</td>
<td>750</td>
<td>2,3%</td>
</tr>
<tr>
<td>Radiology technician</td>
<td>25,346</td>
<td>4,0%</td>
<td>1,014</td>
<td>930</td>
<td>3,2%</td>
<td>737</td>
<td>2,3%</td>
</tr>
<tr>
<td>Prevention technician</td>
<td>19,000</td>
<td>3,0%</td>
<td>760</td>
<td>691</td>
<td>2,4%</td>
<td>625</td>
<td>1,9%</td>
</tr>
<tr>
<td>Midwife</td>
<td>18,111</td>
<td>2,9%</td>
<td>724</td>
<td>922</td>
<td>3,2%</td>
<td>916</td>
<td>2,8%</td>
</tr>
<tr>
<td>Paediatric nurse</td>
<td>10,475</td>
<td>1,7%</td>
<td>419</td>
<td>325</td>
<td>1,1%</td>
<td>208</td>
<td>0,6%</td>
</tr>
<tr>
<td>Speech therapist</td>
<td>8,700</td>
<td>1,4%</td>
<td>348</td>
<td>687</td>
<td>2,4%</td>
<td>727</td>
<td>2,2%</td>
</tr>
<tr>
<td>Dental hygienist</td>
<td>6,400</td>
<td>1,0%</td>
<td>256</td>
<td>650</td>
<td>2,3%</td>
<td>718</td>
<td>2,2%</td>
</tr>
<tr>
<td>Sanitary assistant</td>
<td>6,169</td>
<td>1,0%</td>
<td>247</td>
<td>342</td>
<td>1,2%</td>
<td>513</td>
<td>1,6%</td>
</tr>
<tr>
<td>Orthoptist and ophthalmology assistant</td>
<td>4,500</td>
<td>0,7%</td>
<td>180</td>
<td>204</td>
<td>0,7%</td>
<td>270</td>
<td>0,8%</td>
</tr>
<tr>
<td>Neuro therapist for developmental age</td>
<td>4,000</td>
<td>0,6%</td>
<td>160</td>
<td>326</td>
<td>1,1%</td>
<td>425</td>
<td>1,3%</td>
</tr>
<tr>
<td>Dietician</td>
<td>3,870</td>
<td>0,6%</td>
<td>155</td>
<td>372</td>
<td>1,3%</td>
<td>413</td>
<td>1,3%</td>
</tr>
<tr>
<td>Psychiatric rehabilitation technician</td>
<td>3,450</td>
<td>0,5%</td>
<td>138</td>
<td>309</td>
<td>1,1%</td>
<td>355</td>
<td>1,1%</td>
</tr>
<tr>
<td>Audio prothesis technician</td>
<td>3,400</td>
<td>0,5%</td>
<td>136</td>
<td>379</td>
<td>1,3%</td>
<td>433</td>
<td>1,3%</td>
</tr>
<tr>
<td>Cardiocirculatory physiopathol. technician</td>
<td>3,000</td>
<td>0,5%</td>
<td>120</td>
<td>170</td>
<td>0,6%</td>
<td>199</td>
<td>0,6%</td>
</tr>
<tr>
<td>Orthopaedic technician</td>
<td>2,000</td>
<td>0,3%</td>
<td>80</td>
<td>120</td>
<td>0,4%</td>
<td>126</td>
<td>0,4%</td>
</tr>
<tr>
<td>Audiometric technician</td>
<td>2,000</td>
<td>0,3%</td>
<td>80</td>
<td>123</td>
<td>0,4%</td>
<td>215</td>
<td>0,7%</td>
</tr>
<tr>
<td>Neurophysiopathology technician</td>
<td>1,500</td>
<td>0,2%</td>
<td>60</td>
<td>112</td>
<td>0,4%</td>
<td>100</td>
<td>0,3%</td>
</tr>
<tr>
<td>Podiatrist</td>
<td>1,200</td>
<td>0,2%</td>
<td>48</td>
<td>139</td>
<td>0,5%</td>
<td>218</td>
<td>0,7%</td>
</tr>
<tr>
<td>Occupational therapist</td>
<td>1,000</td>
<td>0,2%</td>
<td>40</td>
<td>244</td>
<td>0,8%</td>
<td>465</td>
<td>1,4%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>629,490</td>
<td>75,1%</td>
<td>25,180</td>
<td>28,761</td>
<td>32,552</td>
<td>26,608</td>
<td>88,230</td>
</tr>
</tbody>
</table>

AA 2013-14
- 31,748
- 33,468
- 27,338
- 105,901

Difference 2014 vs 2013
- 2,987
- 9%
- 917
- 3%
- 730
- 3%
- 17,671
- 17%
Statistical data of the last 18 years

The number of places for the Health Professions (Table 4) has progressively increased since 1997, from 8.634 to 26.608 in 2014, equal to +208%, more than tripling; there has been an analogous increase, albeit in a lower proportion, in places for Medicine and Surgery, which is up from 6.016 to 10.023 (+67%) and for Odontology, up from 549 to 949 (+73%). Despite this exponential growth in the number of students, numbers of lecturers have remained practically constant, ranging from 9.213 in 1997 to 9.400 in 2014, although in the intervening years they reached highs of 11.376, as in 2006. Hence the ratio of students to lecturers increased from 1.7 in 1997 to 4 in 2014.

Of the 9.406 lecturers for the entire medical sector, only 316 (3.4%) belong to the SDSs of the health professions (MED/45-50). Another negative datum is that none of the 101 of MED/46 is a health professional and that out of the 66 of MED/49 only 1 is a Dietician. The same goes for the 88 of MED/50, with only 4 from the Health Professions - 2 Dental Hygienists, one Speech therapist and one Orthoptist. Of the 22 of MED/48, 6 are Physiotherapists and one is a Neurophysiopathology technician. The situation regarding the 33 lecturers of MED/45 is decidedly better, with 27 Nurses, and that of the 6 of MED/47 is reasonably good, with 3 Midwives.

A clear sign of the lack of development of the roles for the health professions is that the teaching activity is done free of charge by personnel of the health service.

Table 4. The number of places for the health professions has progressively increased since 1997

<table>
<thead>
<tr>
<th>Year</th>
<th>Health Professions</th>
<th>Medicine and Surgery</th>
<th>Dentistry</th>
<th>Total Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Places</td>
<td>Applications</td>
<td>A/P</td>
<td>Places</td>
</tr>
<tr>
<td>1997-98</td>
<td>8.634</td>
<td>55%</td>
<td>9225</td>
<td>3.4</td>
</tr>
<tr>
<td>1999-00</td>
<td>11.674</td>
<td>60%</td>
<td>36.438</td>
<td>3.1</td>
</tr>
<tr>
<td>2001-02</td>
<td>17.428</td>
<td>68%</td>
<td>46.433</td>
<td>2.7</td>
</tr>
<tr>
<td>2002-03</td>
<td>21.411</td>
<td>72%</td>
<td>58.870</td>
<td>2.7</td>
</tr>
<tr>
<td>2003-04</td>
<td>22.658</td>
<td>73%</td>
<td>58.501</td>
<td>2.6</td>
</tr>
<tr>
<td>2004-05</td>
<td>23.205</td>
<td>73%</td>
<td>63.830</td>
<td>2.8</td>
</tr>
<tr>
<td>2005-06</td>
<td>24.341</td>
<td>75%</td>
<td>75.496</td>
<td>3.1</td>
</tr>
<tr>
<td>2006-07</td>
<td>25.048</td>
<td>75%</td>
<td>79.521</td>
<td>3.2</td>
</tr>
<tr>
<td>2007-08</td>
<td>25.417</td>
<td>76%</td>
<td>87.346</td>
<td>3.4</td>
</tr>
<tr>
<td>2008-09</td>
<td>26.720</td>
<td>76%</td>
<td>89.642</td>
<td>3.4</td>
</tr>
<tr>
<td>2009-10</td>
<td>26.530</td>
<td>75%</td>
<td>110.230</td>
<td>4.2</td>
</tr>
<tr>
<td>2010-11</td>
<td>28.142</td>
<td>73%</td>
<td>121.038</td>
<td>4.3</td>
</tr>
<tr>
<td>2011-12</td>
<td>27.223</td>
<td>71%</td>
<td>123.419</td>
<td>4.5</td>
</tr>
<tr>
<td>2012-13</td>
<td>27.327</td>
<td>71%</td>
<td>119.654</td>
<td>4.4</td>
</tr>
<tr>
<td>2013-14</td>
<td>27.738</td>
<td>71%</td>
<td>105.760</td>
<td>3.8</td>
</tr>
<tr>
<td>2014-15</td>
<td>26.608</td>
<td>71%</td>
<td>88.230</td>
<td>3.3</td>
</tr>
<tr>
<td>Mean value</td>
<td>22.010</td>
<td>71%</td>
<td>75.617</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Total | 396.186 | 1.361.098 | 144.519 | 989.374 | 14.607 | 195.690 | 555.758 | 2.546.162 |
Difference | 17.974 | 59.005 | -0.1 | 4.007 | 61.383 | 4.7 | 400 | 10.747 | 21.935 | 110.417 | 0.5 | 194 | 2.3 |

1997

A. Mastrillo
through the agreements between Regions and Universities and between local health services and Universities.

The division of places among the three courses is characterised by a stability in the last four years among 71% of the health professions, 27% of Medicine and Surgery and about 3% of Dentistry.

The estimate of teaching requirements is also different; looking at the year 2014, it is higher for the Health Professions, with a turnover of 4.0% with respect to the 629,490 operators, 2.8% with respect to the 353,000 Physicians and 1.6% of Dentists and Odontologists.

For the Health Professions the increase derives from the great need for personnel for the various auxiliary activities of rehabilitation and safety, which grew over the years up to 28,142 in 2010, decreasing to 26,608 in the academic year 2014-15. Looking at the annual mean of the Degree courses from 2001 the difference of -3,476 (-11%), between the Universities (25,030) and the Regions (28,965), regards above all the places for nurses, with a difference of -3,593 (-20%), between Regions (17,859) and Universities (14,267). The difference is, however, minimal for the set of the other 20 professions with a mean of -342 (-3%) between the 10,764 of the universities and the 11,106 of the Regions.

Distribution of places and sites by profession.

As emerges from the data of the last 5 years (19), and in particular those of 2014-15 (Tables 2 and 3) there are 5 professions with the greatest number of places and teaching sites: nurses, with 15,701 places over 43 courses and 216 sites, physiotherapists, with 2,213 places over 39 courses and 87 sites, Radiology technicians, with 1,007 places over 39 courses and 60 sites, Laboratory technicians, with 959 places over 36 courses and 48 sites, and Midwives, with 916 places over 38 courses and 52 sites. There are 4 professions with the lowest number of places: Orthopaedic technicians, with 141 places over 10 courses, Podiatrists, with 130 places over 6 courses and 7 sites, Neurophysiology technicians, with 120 places over 12 courses, and, finally, Audiometrician, with 60 places over 5 courses.

For the five most numerous professions the number of places per course site is 73 for Nurses; 25 for Physiotherapists, 20 for Laboratory technicians, 18 for Midwives and 17 for Radiology technicians.

However, for the others the lowest values are: 12 for Audio prosthesis technician and 10 for Neurophysiology technicians. These are figures that are in any case in line with the recent Ministry of University Eduction Law no. 544 of 31st October 2007, which fixed the minimum number at 10, the medium number at 25 and the maximum number at 75.

Distribution of places and applications per university

The Universities with the highest number of courses and sites are (Table 5) Milano Statale with 22 courses over 51 sites, the only University to have activated all 22 types of course, followed by Roma Sapienza with 20 courses over 71 sites, Roma Tor Vergata with 19 courses over 40 sites and Genova with 19 courses over 20 sites.

Those with fewest courses are Udine, Trieste, Perugia, Foggia and Cagliari, all with 7 courses, Salerno and Sassari with 5 courses, Milano S. Raffaele and Campobasso with 3 courses, Roma Campus Biomedico with 2 and Milano Humanitas with 1.

The highest application/place ratios for the state universities are 9,7 for Cagliari, 8,6 for Catania and 7,4 for Palermo. The lowest, with a ratio of 1,2, are Torino 2 and Roma Sapienza 2.

The professions most in demand among students

In the academic year 2014-15, as in preceding years, the most popular courses among students (Table 3 and Figure 1) are Physiotherapy and Speech Therapy, with application/place ratios of 12.3 and 9, followed by courses for Dieticians and for Midwives with 6,7 and courses for radiology technicians with 5,3.

The mean application/place ratio among the 22 professions is 3,3, going even lower for the more numerous represented professions, such as nursing with 1,8. The only one with a ratio of less than 1 is that of Sanitary Assistant with 0,8.
Table 5. Distribution of places and applications per university on AA 2014-15

<table>
<thead>
<tr>
<th>Developed by A. Mastrillo</th>
<th>Applications</th>
<th>Places</th>
<th>A/P</th>
<th>Courses</th>
<th>Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torino</td>
<td>3.781</td>
<td>939</td>
<td>4.0</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Torino 2</td>
<td>360</td>
<td>295</td>
<td>1.2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Vercelli</td>
<td>1.410</td>
<td>608</td>
<td>2.3</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Brescia</td>
<td>1.875</td>
<td>770</td>
<td>2.4</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Milano</td>
<td>4.829</td>
<td>1.462</td>
<td>3.3</td>
<td>22</td>
<td>51</td>
</tr>
<tr>
<td>Milano Bicocca</td>
<td>1.932</td>
<td>567</td>
<td>3.4</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Milano Humanitas</td>
<td>225</td>
<td>40</td>
<td>5.6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Milano S. Raffaele</td>
<td>1.079</td>
<td>135</td>
<td>8.0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Pavia</td>
<td>1.445</td>
<td>501</td>
<td>2.9</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Varese</td>
<td>906</td>
<td>324</td>
<td>2.8</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Trieste</td>
<td>595</td>
<td>175</td>
<td>3.4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Udine</td>
<td>865</td>
<td>260</td>
<td>3.3</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Padova</td>
<td>4.376</td>
<td>1.299</td>
<td>3.4</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>Verona</td>
<td>2.472</td>
<td>1.009</td>
<td>2.4</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Genova</td>
<td>2.328</td>
<td>724</td>
<td>3.2</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td>Bologna</td>
<td>2.499</td>
<td>885</td>
<td>2.8</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Ferrara</td>
<td>1.630</td>
<td>451</td>
<td>3.6</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Modena Reggio</td>
<td>1.172</td>
<td>440</td>
<td>2.7</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Parma</td>
<td>1.196</td>
<td>403</td>
<td>3.0</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Ancona</td>
<td>1.720</td>
<td>655</td>
<td>2.6</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Firenze</td>
<td>2.519</td>
<td>880</td>
<td>2.9</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Pisa</td>
<td>2.188</td>
<td>572</td>
<td>3.8</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Siena</td>
<td>1.015</td>
<td>384</td>
<td>2.6</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Perugia</td>
<td>1.018</td>
<td>480</td>
<td>2.1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Roma Campus</td>
<td>313</td>
<td>88</td>
<td>2.6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Roma Cattolica</td>
<td>2.517</td>
<td>805</td>
<td>3.1</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Roma Sapienza 1</td>
<td>6.300</td>
<td>3.077</td>
<td>2.0</td>
<td>20</td>
<td>71</td>
</tr>
<tr>
<td>Roma Sapienza 2</td>
<td>444</td>
<td>358</td>
<td>1.2</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Roma Tor Vergata</td>
<td>4.390</td>
<td>1.393</td>
<td>3.2</td>
<td>19</td>
<td>40</td>
</tr>
<tr>
<td>Chieti</td>
<td>1.999</td>
<td>496</td>
<td>4.0</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>L’Aquila</td>
<td>1.857</td>
<td>457</td>
<td>4.1</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Campobasso</td>
<td>274</td>
<td>112</td>
<td>2.4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Foggia</td>
<td>1.477</td>
<td>313</td>
<td>4.7</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Bari</td>
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<td>Napoli Fed II</td>
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<tr>
<td>Sassari</td>
<td>1.342</td>
<td>222</td>
<td>6.0</td>
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<tr>
<td>TOTAL</td>
<td>88.630</td>
<td>26.608</td>
<td>3.3</td>
<td>452</td>
<td>750</td>
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</table>
Employment figures

Continue according to data of AlmaLaurea employment (20, 21) the decline in a year degree as shown in Figure 1; although in each case the health area still maintains the first place, we must consider the decline of 23 percentage points from 84.4% in 2007 to 61.2% in 2012, with the greatest difference just in the last two years from 69% to 62% with -7 percentage points. This decline also concerns Nurse, compared to five years ago when he complained deficiency: in this case, employment fell by 94% in 2007 to 63% in 2012, while it was 74% in 2011, then as many as 11 points less in just one year. Still higher the decline for Radiology Technician coming down from 93% in 2007 to 42% in 2012, with a difference of 51 percentage points, including 6 on the year 2011, and that remains the biggest drop in absolute among the 22 profiles. To date there are numerous unemployed 3-4 years of graduation and as a result there was an immediate drop in the total of 17,671 applications for admission to the 22 courses, compared to 105,901 last year (-16.5%), Table 3.

This leads to reflection as to the opportuneness of reconsidering the teaching demand criteria. Among these criteria is turnover, which for the last 15 years has been an average 5% over all the 22 professions. Consequently, apart from some exceptions such as that of Audioprothesist, Dental hygienist and Podiatrist, for whom a turnover of at least 10% is needed, in all the other professions there is a teaching demand turnover tending towards 4%.

It should also be taken into account that for the other professions of the health sector (Table 1), the turnover figures for teaching demand have for years been lower - below 3% Medicine at 2.7% (a value calculated by ENPAM), Dentistry at 1.6% and Veterinary at 2.5%.

Figure 1. Ratio of applications to places available and employment rates 1 year from graduation from 2007 to 2012.
THREE YEARS DEGREE COURSES FOR HEALTH PROFESSIONS: APPLICATIONS/PLACES AND EMPLOYMENT
Conclusions

The University training of the Health Professions is characterised by a high level of organisational and didactic cooperation between the Ministry of University Education and the Ministry of Health, the Regions, the local health authorities and the local Universities, with availability of structures and personnel constituting the teaching potential on the basis of which the number of student places is determined. This type of organisation derives from precise legislation issued from 1992 onwards.

The special nature of the limited-number degree courses for the Faculty of Medicine and Surgery stems from the need to provide students with adequate training and the certainty of finding employment in a relatively short time. Although the limited number is at times a subject of contention, especially on the occasion of the annual admission tests, since it raises the question of the “right to study”, the passing years have borne witness to the wisdom of linking the number of university places available to the effective job prospects of the future graduates.

References


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