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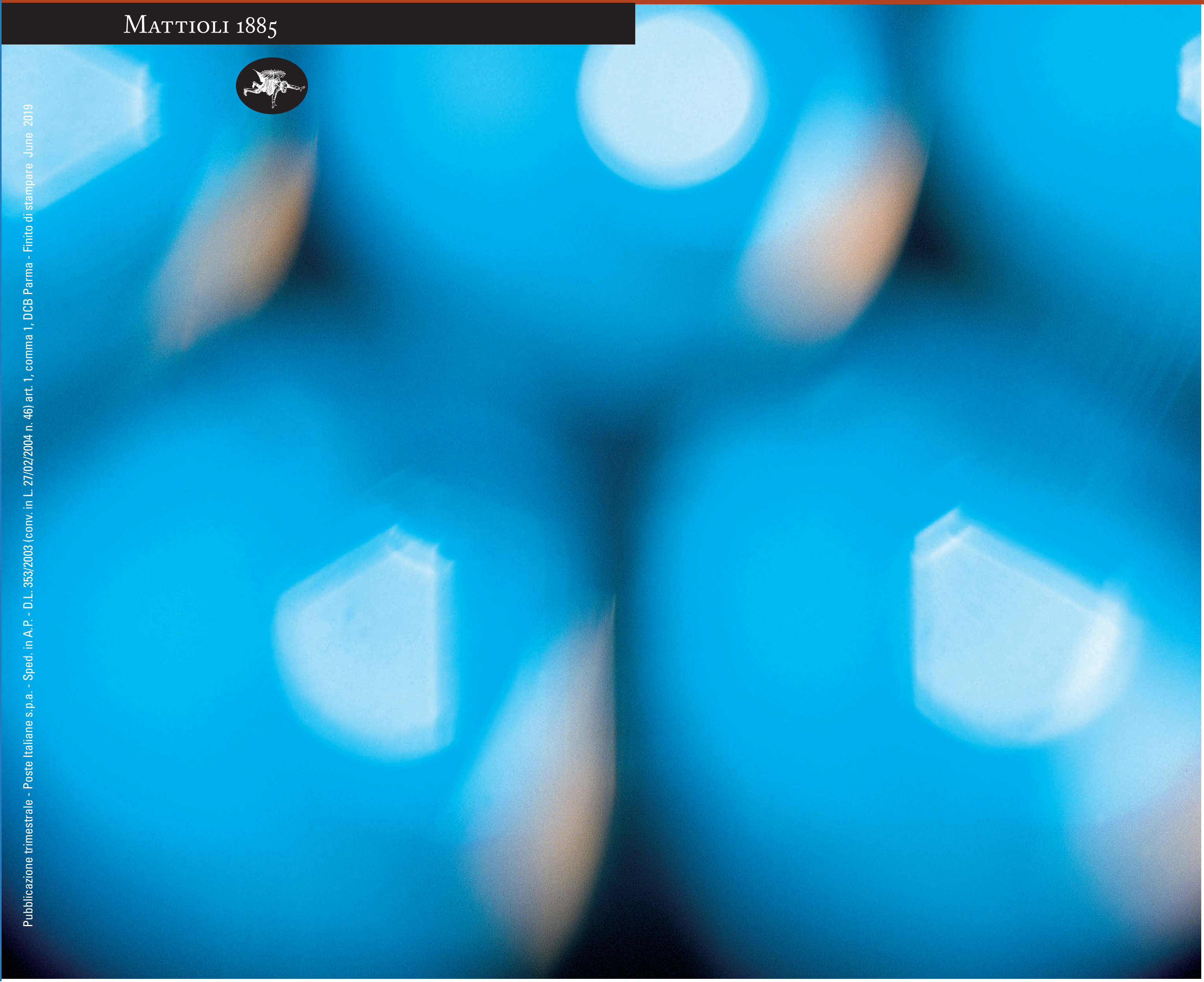

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ORIGINAL ARTICLE: EXPLORING HEALTHCARE PROFESSIONALS' PERCEPTION OF THEIR WORK

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FOREWORD

Interprofessionalism and interprofessional research: a challenge still to be won in Italy

Leopoldo Sarli[1], *Clelia D'Apice*[1], *Sandra Rossi*[1], *Giovanna Artioli*[2]
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Public health and pedagogical institutions have long been calling for collaborative models of assistance and training that provide inter-professional synergy and there is a broad international consensus on the importance of inter-professionalism in the field of assessment and healthcare provision (1-10). In fact, the client/user/patient/citizen has increasingly complex needs that require the development of a cohesive and collaborative practice between professionals from diverse disciplines. The path necessary to achieve this goal is rather complex considering that it must take into account the need to reconcile professional differences, sometimes characterised by opposing and conflicting visions, through continuous interaction and sharing of knowledge and practices among the various professionals involved. It is a practice built around the concepts of sharing values, making decisions and taking responsibility which entails authentic and constructive relationships based on honesty, trust and mutual respect. One of the obstacles to effective collaboration, particularly present in the Italian reality, is the individual perception of different hierarchies (11) from which follows the reluctance to recognise competences to those who are perceived as belonging to lower status groups.

This is the reason why recent research on the approach to healthcare based on interdisciplinarity has focused substantially on communication and group dynamics to the extent that the opinion that research and training play a fundamental role in achieving this goal is widely shared (12-15).

Another great difficulty that needs to be overcome in order to reach this objective lies precisely in the conduct of scientific research. The diverse disciplinary areas which various professionals come from and who collaborate in providing healthcare refer to different scientific literature models as well as to the objectives pursued also for the methodology and quality standards used. Some professional areas refer, in fact, to "quantitative" research which has the "generalisation" as a quality standard which is an act of reasoning that wants to draw wide conclusions from particular observations and to do so uses large numbers along with the statistical method (15). Other professional areas refer to research defined as "qualitative" which does not exclude generalisation, but wants to provide a rich and contextualized understanding of some aspects of human experience through the intensive study of particular cases and does not require large numbers and a statistical method (16). Despite qualitative research is spreading more and more in health sciences (17-22) its appreciation in Italy suffers from the same difficulties linked to the individual perception of different hierarchies to which we have referred to regarding the development of interprofessional practice. On the part of some professional categories, in particular the medical one and the one connected to the biological sciences, there is a reluctance to "give" the status of quality researcher to those who are perceived as belonging to lower status groups. The categories that are perceived as "superior" use the "quantitative" method and perceive quantitative research as the only one capable of providing scientific truth, relegating qualitative research to a "lower" status equal to the perceived status of groups using that type of scientific research.

This situation that we could define as an impasse must be absolutely overcome. The scientific community worldwide has already unequivocally documented the importance and usefulness of the "qualitative" method in healthcare research and the American Medical Association has established an Evidence-Based Medicine Working Group that already ratified the validity in 2000 of qualitative research (23) and outlined the territories within which qualitative and quantitative research best expresses their potential. Quantitative research is designed to test well-specified hypotheses, determine whether an intervention did more harm than good, and find out how much a risk factor predisposes person to the risk. Equally important, qualitative research offers insight into emotional and experiential phenomena on healthcare to determine what, how, why (23).

In more recent years, international literature has documented how, in parallel with interdisciplinarity and inter-professionalism, the integration of diversified research methods applied to a study can significantly increase the scientific value of the study itself (24-26). I believe that in Italy the time is now ripe not only to make the most of the potentialities of inter-professionalism in the healthcare field, but also to support qualitative and quantitative research, starting with the training of researchers, such as in PhD schools thus conferring the same scientific relevance to the two methodologies.

References

1. Baxter SK, Brumfitt SM. (2008) Professional differences in interprofessional working. J. Interprof. Care, 22: 239-251
2. Battie A. (1994) Healthy alliances or dangerous liaison.? Thec hallenge of working together in health promotion. In: Leathard A. (Ed), Going inter-professional. Routledge, London, pp. 109-122.
3. Canadian Interprofessional Health Collaborative (CIHC). (2010) A national interprofessional competency framework. Health San Francisco. Ripreso da http:/www.cihc.ca/files/CIHC_IPCompetencies_Feb1210.pdf
4. De Marinis MG, De Marunis MC. (2013) L'interprofessionalità come risposta unitaria e globale ai problemi di salute: obiettivi, metodologie e contesti formativi. Medicina e Chirurgia, 58: 2586-2591.
5. Kirby A. (2011) Identification of tools and techniques to enhance interdisciplinarity collaboration during design and costruction projects. HERD 19: 103-104.
6. Liu W, Gerdtz M, Manias E. (2016) Creating opportunities for interdisciplinary collaboration and patient-centred care: how nurses, doctors, pharmacists and patient use communication strategies when managing medications in an acute hospital setting. J Clin Nurs 25: 2943-57.
7. Pype P, Mertens F, Helewaut F, Krystallidou (2018). Healthcare teams as a complex adaptive system: understanding team behavior through team members' perception of interprofessional interaction. BMC Health Serv Res. 18:570-9.
8. Sargeant J, Loney E, Murphy G (2008). Effective interprofessional teams: "contact is not enough" to buid a team. J Contin Educ Health Prof 28: 228-234
9. Tomelleri S, Artioli G. (2013) Scoprire la collaborazione resiliente. Una ricerca-azione sulle relazioni interprofessionali in area sanitaria. Milano. Franco Angeli.
10. Zwarenstein M, Goldman J, Reeves S. (2014) Interprofessional collaboration: effects of practice based interventions on professional practice and healthcare outcomes. Cochrane Database of systematic reviews. In: Cochrane Library, art. No CD000072.
11. Sollami A, Caricati L, Sarli L. (2015) Nurse-physician collaboration: a meta-analytical investigation of survey scores. J Interprof Care 29: 223-9.
12. D'Amour D, Oandasan I. (2005) Interprofessionality as the field of interprofessional practice and interprofessional education: an emerging concept. J. Interprof. Care 19: 8-20
13. Herbert CP.(2005) Changing the culture: interprofessional education for collaborative patient-centred practice in Canada. J. Interprof. Care 19: 1-4
14. Gerhardus A, Schilling I, Voss M. (2017) Public health as an applied, multidisciplinary subject: is research-based learning the answer to challenges in learning and teaching? Gesundheitswesen. 79:141-143.
15. House S, Havens D. (2017) Nurses' and physicians' perceptions of nurse.physivian collaboration: a Systematic Review. J Nurs Adm 47: 165-171
16. Polit DF, Beck CT. (2010) Generalization in quantitative and qualitative research: myths and strategies. Int J Nurs Stud 47: 1451-8.
17. Otani T. (2017) What is qualitative research? Yakugaku Zasshi 137: 653-658.
18. Choi BC, Pak AW. (2006) Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. Clin Invest Med 29: 351-364
19. Cruz EV, Hingginbottom G. (2013) The Use of focused ethnography in nursing research. Nurse Researcher, 20: 36-43.
20. Higginbottom GM, Pillay JJ, Boadu NY. (2013). Guidance on performing focused Ethnographies with an emphasis on health care research. The QualitativeReport 18: 1-6.
21. Lindh Falk A, Hult H, Hammar M. et Al. (2018) Nursing assistants matters: an ethnographic study of knowledge sharing in interprofessional practice. Nurs Inq 25: e12216
22. Sasso L, Bagnasco A, Ghirotto L. (2015) La ricerca qualitativa. Una risorsa per i professionisti della salute. Milano: Edra.

23. Giacomini MK, Cook DJ, Evidence. Based Medicine Working Group. (2000) Users' guides ti the medical literature. XIII. Qualitative research in health care. A. Are the results of the study valid? JAMA 284: 357-362.
24. O'Cathain A,Thomas KJ, Drabble SJ, et Al. (2013) What can qualitative research do for randomised controlled trials? A systematic mapping review. BMJ Open 3: 1-15.
25. Cindy Cooper C, Alicia O'Cathain A, Hind D, et al. (2014) Conducting qualitative research within Clinical Trials Units:Avoiding potential pitfalls. Contemporary Clin Trials 38: 338-43.
26. Hennessy M, Hunter A, Healy P. et Al. (2018) Improving trial recruitment processes: how qualitative methodologies can be used to address the top 10 research priorities identified within the PRioRiTy study. BMC Open Access 19: 584

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Original article: Focus on qualitative research in the healthcare

Opening the horizons of clinical reasoning to qualitative research

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Abstract. Clinical Reasoning (CR) is an important aspect of health professional education and effective practice. It is a complex series of factors and cognitive functions, involving higher-level thinking to define problems, examine the evidence and then making decisions and choices to improve the patient's physiological and psycho-social state.CR consists of 3 interconnected and interdependent sub-processes: clinical experience and clinical context and Evidence-Based Practice. This essay focuses on the opportunities that Qualitative Research offers during the CR process when the doctor finds the evidence to address a patient's health problem. Clinicians are often faced with questions that randomized clinical trials or systematic reviews of efficacy studies cannot answer. For this reason, we considered it necessary to offer an expanded view of the process of interpretation of the scientific literature used in daily clinical practice through the complex process of Clinical Reasoning, through the use of studies conducted with qualitative methods, which are able to respond to a different range of clinical questions, and to support studies based on the effectiveness of treatments. (www.actabiomedica.it)

Key words: Clinical reasoning, Evidence-Based Practice, Qualitative Research

Introduction

Clinical reasoning (CR) is an important aspect of health professional education and an effective practice (1). It is a core and essential skill for physicians (2, 3). It represents a critical component in the development and training of healthcare professionals from when they start as students (2). It is a complex series of factors and cognitive functions, involving higher level thinking in order to define problems, examine the evidence and then making decisions and choices to improve the patient's physiological and psycho-social state (1, 4, 5). CR goes beyond the initial diagnosis and extends into all aspects of clinical practice and management (2). Medicine's scientific paradigm has changed and dramatically evolved over the decades, and along with it, the practice of medicine has changed.

During clinical encounters with patients, experienced physicians engage in numerous clinical tasks, including listening to the patient's story, reviewing the patient's past records, performing a physical examination, choosing the appropriate investigations, providing advice or prescribing medications, and/or ordering a consultation. These behaviours which provide the basis of clinical reasoning are influenced and driven by "what" physicians think about "what" and "how" they think (6). The clinical reasoning, therefore, consists in integrating all the acquired knowledge up to that moment, in pondering the evidence and in drawing on the experience to reach the definitive diagnosis for a patient's condition (7). Also, it is important to highlight that medical errors as a consequence of faulty reasoning contribute to patient morbidity and mortality (8-10).

Clinical reasoning is an interpretive practice, not a precise science, and it is made of several processes. CR is an intrinsically contextual clinical competence that develops with practice, reflection on experience and responds to the ability to recover knowledge and the organization of thought during the hypothetical cause analysis. In this complex process, an important role is played by the scientific evidence that the doctor has at his disposal to complete the clinical picture and reinforce his ideas on individual cases. In this sub-process, clinicians adopt the Evidence-Based Practice (EBP) approach. EBP must be considerate as a continuous and intertwined sub-process part of CR, within the complex process of CR interacts continuously with two other sub-processes: clinical experience and clinical context (11).

Despite appeals for medicine to be 'evidence-based' and 'scientific', clinical reasoning does not conform to the conventional criterias' of a scientific methodology. It uses a sample size of one (the patient), employs individual interviews to gather information, qualitatively analyses and interprets imaging information, interprets objective quantitative results and adopts an interactive approach to reach to a final diagnosis. CR is often a shared cognitive process taking place in a busy and time-pressured environment, involving conversations between the patient and clinicians (12). Furthermore, healthcare professionals in this complex process, must identify the consultation of the best, clearest and most undeniable evidence produced by the scientific community (13), in order to be able to put this fundamental skill into practice, sharing the decision-making process with the patient, and guaranteeing a high-quality service.

Figure 1. Clinical reasoning

Evidence-Based Practice and best evidence available to clinical questions

As highlighted previously, Evidence-Based Practice involves basing clinical decisions and practice based on the best available evidence. So, what is "the best evidence available"? The hierarchy of evidence is a fundamental principle of EBP and attempts to answer this question. The hierarchy of evidence allows a top-down approach to be taken to identify the best evidence according to which a recent systematic review is sought first and, if this is not available, (enables to move on) move on to the next level of scientific evidence in order to answer the question. Hierarchies of evidence became popular with the Canadian Task Force on the Periodic Health Examination in late 1979 and since that time many different hierarchies have been developed and used (14-20). EBP hierarchies rank study types based on the rigour (strength and precision) of their research methods (21).

The Hierarchy of evidence in Clinical Reasoning

Medical research has been predominantly quantitative with randomized controlled trials (RCTs) being the gold standard of medical research and systematic reviews of RCTs, considered the highest level of evidence (22, 23). This evaluation method suggests that all clinical questions can be answered by a Systematic Review or Meta-Analysis. And that, if a current, well designed systematic review is not available, it is necessary to consult primary studies to answer the question (24). This type of approach may not be useful for evaluating the evidence that evaluates, from another point of view, the different aspects of clinical care pathways. A limitation of the majority currently considered hierarchies is that most focus exclusively on effectiveness. To this assumption, it is necessary to add that the RCTs are generally conducted on selected and homogeneous populations, excluding the "complex" patients (comorbidities, elderly), women, children, who risk to compromise the internal validity of the study.

In this context, although there has been recognition of the importance of practitioner's expertise and patient's preferences in the expanded formulation of evidence-based medicine (25) and, thus, of EBP, research evidence is still portrayed as greater in value to the extent to which it conforms with the structures of classical experimental methodology, that is, blinded, RCTs and meta-analysis thereof (26). According to the hierarchy of evidence, randomized control trials are the most valid source of evidence. However, randomized control trials overlook certain types of knowledge, and this led to highlighting areas of shadow in the field of medicine (27), relegating largely population-based outcome studies to the lower levels of evidence, even though it would usually be impossible to answer the questions those studies pose by using blind RCTs. In the familiar single-hierarchy EBP model (28), there is no designated place for qualitative evidence. Qualitative methods, are often not included in widely accepted classifications of evidence (e.g. SORT- Strength of Recommendation Taxonomy), or is considered the lowest level of evidence, alongside case-reports, expert opinion, and anecdotal findings (22, 23). Although there is some suggestion of a recognition of the importance of qualitative research by Evidence-Based Medicine proponents as, for example, Sackett & Wennberg, (30) in "Choosing the best research design for each question", the methods of qualitative research are little taken into account, and this implies an obscuration of its specific potential in the attempt to understand holistically the phenomena of daily clinical practice.

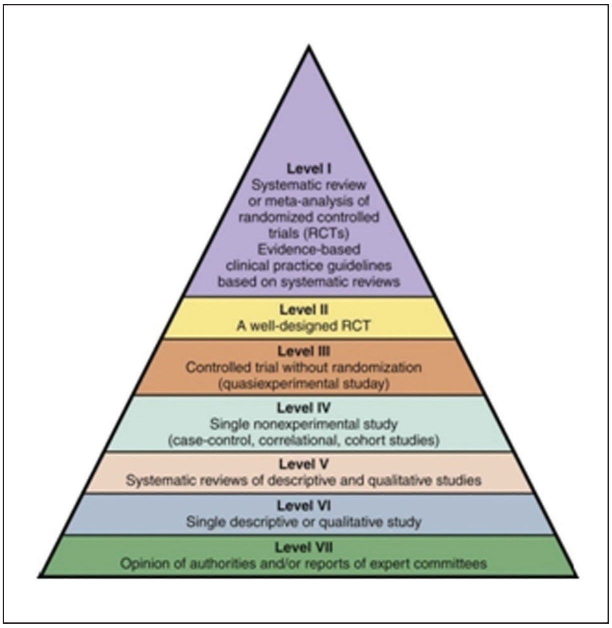

Figure 2. Hierarchy of evidence (28)

The theoretical structure of EBP has not yet evolved so as to align itself with the essential decision-making needs of practitioners (31). This can be problematic for professionals (32), that today are faced with assessments of perceived quality of services (33) and that need to open new horizons to improve the quality of care and the perception of healthcare services (34).

The qualitative evidence to support the Hierarchy of evidence in Clinical Reasoning

Sackett, Rosenberg, Gray, Rosenberg, Gray, Haynes, & Richardson (35) stated: "Evidence based medicine is conscientious, explicit, and judicious use of best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available clinical evidence from systematic research". In this statement, it's possible to find a large space for action for qualitative research.

Although the EBP appears to share very similar definitions, aims, and procedures with reflective practice, this process has not yet been really implemented. Hence, it is possible to identify a large and beneficial maneuver space in the evidence-based practice movement, for the use of reflection on practice, rather than the use of the hierarchical structure of evidence.

The quality of the evidence often refers to its statistical validity and the reproducibility of the research. However, it is necessary to open the field to further perspectives, i.e. those that emphasize contextual feasibility and context comprehension. At this point, a more complex view of the phenomena to be faced emerges, and from which to draw inspiration to obtain more information, in addition to the development of new research areas that have so far remained unexplored.

Clinical reasoning and Qualitative Research: toward contextual feasibility and comprehension

Clinicians are often faced with questions that cannot be answered through a randomized trial, a survey, or a clinical trial. Research methods have given us the ability to expand our knowledge about diseases, but it remains the task of the clinician to apply all of this evidence to patient care (36). In fact, in some cases, the nature of the questions comes out of the predefined schemes of the purpose of these studies for the reasons that were earlier discussed in this essay. In this context there is an increasing need to have available studies that answer these questions more clearly, that address the complexity of the human being, that explore the meaning that people give to the different moments lived in the health field, which reveal the intricacies of psychosocial processes and define theoretical frameworks capable of interpreting these phenomena. These studies can complement clinical research, directing it towards new horizons, with the aim of closing the circle around the assisted person and his family. So, understanding these phenomena can be helpful for professionals, humanising a service that very often, due to technological innovation, hectic times, the need to produce health, a term that in this society often equates to physical well-being, forgetting the psychological and social spheres, which in reality according to the WHO (37), make up this complex framework.

At the same time, a more complex approach to the phenomena addressed in clinical practice, through the consultation of qualitative studies, will allow the assisted persons to feel listened to, understood and probably more involved in the therapeutic process, activating a truthful and harmonious therapeutic relationship, avoiding negative consequences preventable with the extension of the vision that a clinician can learn to implement in the CR process. According to Durning, Artino, Schuwirth & van der Vleuten (38), that conducted a study on an understanding of clinical reasoning, it is possible to identify a space for the adoption of principles of qualitative methods and mixed methods could to add to a framework of clinical reasoning.

Adopting qualitative studies in Clinical Reasoning: why?

The argument that qualitative methods can contribute to answer the questions not easily addressed by randomised controlled trials is not new (39). Evidence-Based Practice share very similar definitions, aims, and procedures with reflective practice (32). Much has been written on the uses and value of sociology for medicine, and indeed there has been a growing acceptance of its methods in healthcare research, including its contribution to randomized controlled trials when these are appropriate (40). In the context of the debate about EBM, it is vital to reiterate that good 'evidence' goes further than the results of meta-analysis of randomised controlled trials. The limitations of these trials, and the evidence about barriers to their utilisation by practitioners should not lead to cynicism about the role of research evidence in health care. It's necessary to be sure that it is the right kind of research to answer the questions posed (39). Therefore, for healthcare professionals, it is essential to ask the right question, focus the evidence from the right perspective, and observing the phenomenon adequately so as to make fluid the discussion on a topic when evaluating the evidence produced by the scientific community, in such a way as to guarantee their correct application, in the daily clinical practice.

Qualitative methods are useful for understanding complex situations in the real world. They do not have the purpose of defining reputable effects: this is the reason why qualitative methods are found at the base of the pyramid and its evidence are considered of low quality. Effectiveness is concerned with whether an intervention works as intended. While this is obviously vital, the scope of any evaluation should be broader (41). In effect, it is also important to know whether the intervention is appropriate for its recipient and for the context. From this perspective, the evidence on context comprehension concerns the psychosocial aspects of the intervention, his/her desires, social conditions, and so would address questions related to its impact on a person and his/her family, also in terms of the life, his/her acceptability, and the ability to adhere by the patient and his/her loved ones. It's important also, to consider how another dimension of evidence, relates to its feasibility, and so involves issues concerning the impact it would have on an organization or provider, and the resources required to ensure its successful implementation. Feasibility encompasses the broader environmental issues related to implementation, cost and practice change.

From the framework shown, the possibility emerges for clinicians to have a further range of studies and approaches that can answer the questions that emerged from the problems identified once they came into contact with the patient. This approach will lead to a widening of the clinical view, opening the door to the identification of problems of a human nature, which, if faced in appropriate times and ways, can help in solving the most complex situations, those not described in effectiveness studies, that concerning the real life, to the problems of the human being who is facing a period of lack of health.

In the last decades an important growth in the number of qualitative studies in the health field is occurring (42, 43). Scholars in diverse health-related disciplines and specialty fields of practice routinely promote qualitative methods as essential components of intervention and implementation programs of research and of a comprehensive evidence base for practice (45). Qualitative methods enable determining in which way evidence are translated into practice as derived from quantitative research (39, 45). Qualitative methods, in particular, address research questions that are different from those considered by clinical epidemiology. Qualitative methods can investigate practitioners' and patients' attitudes, beliefs, and preferences, and the whole question of how evidence is turned into practice. The value of qualitative methods lies in their ability to pursue systematically the kinds of research questions that are not easily answerable by experimental methods (39).

The scientific nature of Qualitative Research

Qualitative research methods could help us to improve our understanding of medicine. Rather than thinking of qualitative and quantitative strategies as incompatible, they should be seen as complementary (46). Although qualitative methods commonly could be viewed as the antithesis of the clinical trial and far removed from the immediate practical aims of intervention studies and practice, qualitative methods can be used to enhance the significance and harness the benefits of clinical trials, and to emphasize the distinctive work and outcomes of nursing care (47). Qualitative health research (QHR) is best characterized not by its qualitative data, but by various hypotheses on how social reality (ontology) is and how we can better learn the truth about this reality (epistemology). These premises differ from those required for conducting, analyzing and believing in the results of quantitative research, such as a randomized controlled trial (48).

The scientific nature of qualitative research is to be understood in terms of rigor: rigor in the imple-

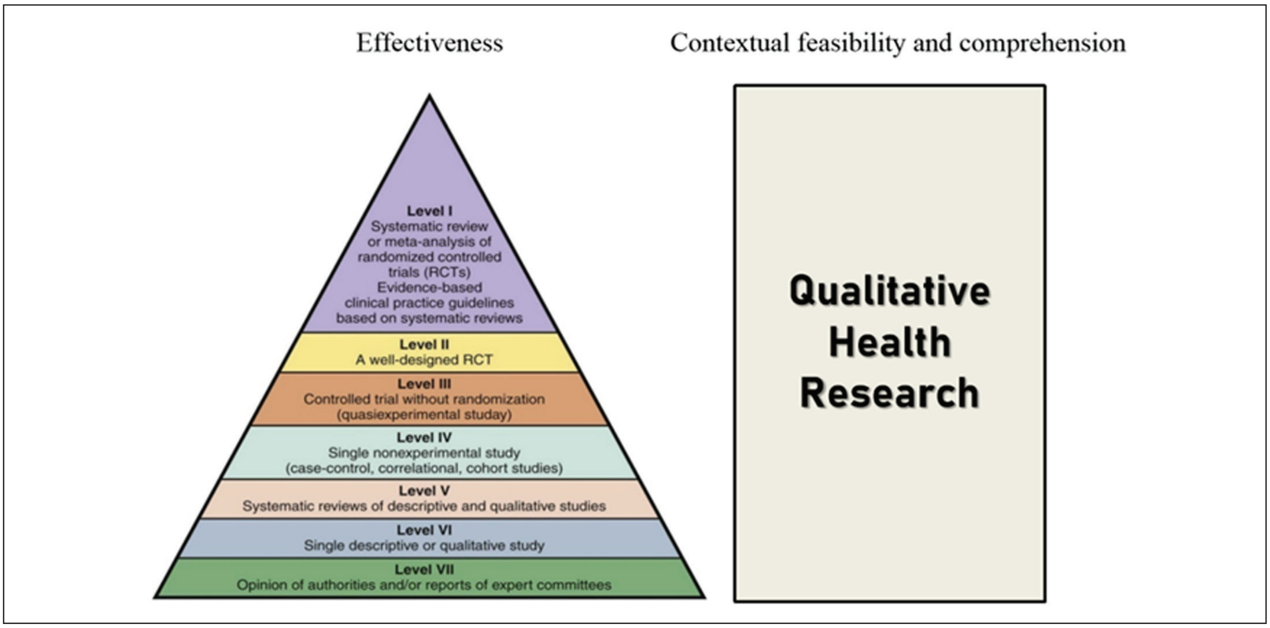

Figure 3. The evidence that best answers the clinical problem

mentation of methodological indications shared in the literature, rigor in the use of logical inferences typical of abductive reasoning, rigor in evaluation (49). In healthcare, qualitative research contributes in particular regarding psycho-social aspects of patient care, health services provision, policy setting, and health administrations. Despite, qualitative research as a whole has been constantly critiqued, and often forgotten because of the lack of consensus for assessing its quality and robustness. As a concept, rigor could be thought of in terms of the quality of the research process, that is to say, that a more rigorous research process will result in more trustworthy findings. To define rigorous qualitative research, it's necessary considered various aspects, like transparency, validity or credibility, reliability, comparability, reflexivity. Moreover, since many elements of rigorous qualitative research are shared between the variety of approaches, and often the overlap of epistemology, ethics, and procedures encourages a generic and flexible view of this type of inquiry (50).

Integrating Qualitative Research in Clinical Reasoning

To obtain the best possible result, in terms of quality of life, quality of services, satisfaction from the community and citizens, need to assess the efficacy of the study intervention, not only in terms of clinical effectiveness but also the patient's acceptability of various aspects of a trial. Moreover, now more than ever, it is necessary to explore aspects concerning how people live after having adhered to a specific treatment, in order to identify the margins for improvement not only of the treatment itself but of the treatment path at a holistic level. In this context, it's possible to affirm that results of randomised clinical trials on their own, restrict the value of clinical studies, and what qualitative methods can fill this gap, entering where necessary, both before, during, and after an intervention. In a patient-centered medical perspective, it is therefore important to reinforce the idea that, if primary studies are conducted with rigor and transparency, they are harbingers of useful evidence. Moreover, if these evidences are systematically collected and analyzed in systematic reviews, then the hierarchy of evidence becomes obsolete, giving space to an opening of perspectives that can really help to understand the complexity of the human being, and consequently to respond adequately to the person's needs.

We propose to rely on the evidence that best meets the different problems that the clinician encounters in daily clinical practice. Adopting this approach, qualitative methods emerge as further points of reference with regards to contextual comprehension and contextual feasibility, offers a more complex view of the way in which problems can be tackled, allowing clinicians to have available a wide range of studies, of different types and that respond to different types of questions, in order to build in an holistic way the different solutions to be shared with the patient.

As previously stated, in the CR process, EBP is a key element, which guides the clinician to interpret and use scientific evidence to facing the health problems presented by the patients, considered single individuals, with different needs and preferences, and who live in complex and unique social contexts.

The doctor cannot be considered a dispenser of effective treatments and solutions, because therapeutic solutions cannot always be considered effective, considering that medicine is a non-exact science. In some cases people do not adhere to the treatments as expected, in others, they decide to suspend them for various reasons, or they do not understand the usefulness of the proposed treatment (this just to give any example). For this reason, we felt it appropriate to propose a model that brings out the usefulness and necessity of knowledge of approaches and consultation of the type of studies suitable for every complex situation that the doctor faces daily, considering the doctor a pivotal point about feasibility and context comprehension, and the importance of protecting the person, inserted in his/her context, with his/her desires, with his/her shortcomings in terms of health literacy, with his/her emotions and perceptions of what health actually is for them.

Conclusion

In everyday's clinical practice, physicians are faced with health problems that affect people's real life who come to them for help. Therefore, they need

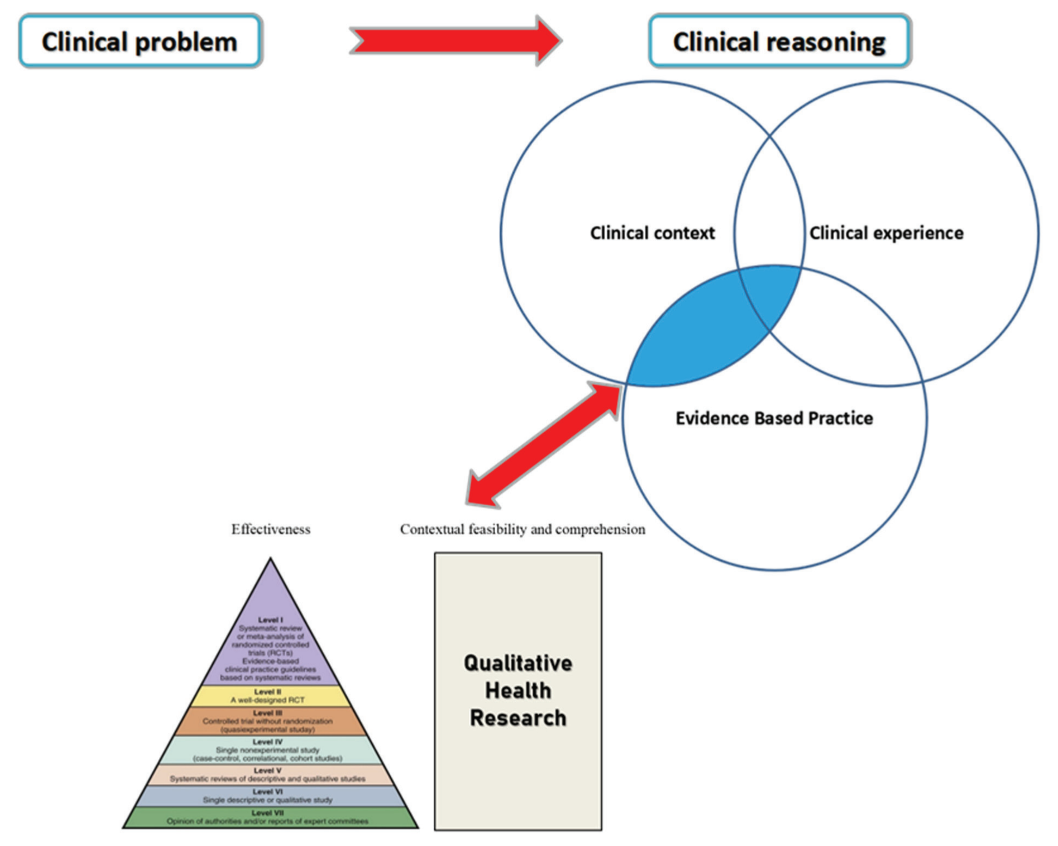

Figure 4. Integrating qualitative methods in Clinical Reasoning

to be ready, competent, and to activate processes that lead them to understand how to help the person, what type of intervention/path/treatment is needed to fulfill this request, and at the same time establish a truthful therapeutic relationship with the patient and his loved ones, in order to reach an agreement on what is best for the patient, in that context, at that particular moment in his/her life. From the previous description it seems obviuos and simple that from the clinicians point of view it involves the needs to activate complex and interpretative mechanisms, to offer a high-quality service, but above all, a service that patient and relatives perceive as such.

In this scenario, clinical reasoning (CR) comes into play, doctors must be able to adopt it and decide which act- acts is-are support tool-tools for them. This process with its use and approach, is learned in university courses, since they allow the doctor to effectively face daily challenges and enables him/her to guarantee the right to health to different people, in different working contexts, with various resources available.

Doctors often find themselves having to understand, interpret, and decide which treatment can solve the health problem presented by the patient. So, after collecting all the patient's information, having performed the physical examination and consulted the available documentation from the patient, the doctor finds himself having to consult scientific literature to identify goals and the best and effective therapeutic approach to be shared with the patient. This can, in some cases, help the doctor. However, this type of approach can represent a reduction of the potential that a clinician has in responding to health needs, considering that in today's society, citizens are more informed and competent, and have become real active consumers of health, namely, who own having the knowledge, skills, and confidence to manage one's health, for which often, clinicians need to adopt an integrated approach to the problem and the individual, and share it with the patient in order to find the right approach.

While as regards the assessments concerning the patient, recognized as a unique individual some many nuances and factors belong to the real-life, such as patient's socio-cultural and economic conditions, or patient's multi-pathology condition, and depending on the clinician's experience and the context. As regards the approach to the evidence to refer to, there' a window of opportunity for improving understanding of the different phenomena that daily clinical practice faces. So, the proposal is to broaden literature's visual toward qualitative research studies, offering clinicians a wider range of studies available and useful to respond to the patient's health needs to draw in the process of identifying studies useful to respond to the health needs of individual patients. Sometimes, to consult studies conducted through qualitative methods may be useful, as they respond to the problems and questions that Randomized Controlled Trials (RCTs) aren't able to address, in terms of structure and objectives, and which may be illuminating for a better understanding of what is happening to the person who presents health problems, in a given context and period of life, adopting a real patient-centered approach.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Higgs J, Jensen G, Loftus S, Christensen N. Clinical reasoning in the health professions. Elsevier; 4th edition; 2018.
2. Lateel F. Clinical Reasoning: The Core of Medical Education and Practice. International Journal of Internal and Emergency Medicine 2018; 1(2): 1015.
3. Pelaccia T, Tardif J, Triby E, Charlin B. An analysis of clinical reasoning through a recent and comprehensive approach: the dual-process theory. Med Educ Online 2011; 16.
4. Barrows HS, Tamblyn RM. Problem based learning: An approach to medical education. Springer Publishing Company; 1980.
5. Yazdani S, Abardeh MH. Clinical Reasoning in Medicine: A Concept Analysis. Journal of Medical Education Summer 2017; 16(3): 154-162.
6. University of Iowa Health Care [Internet]. Department of Internal Medicine. Cited July 11, 2019 from Carver College of Medicine. Available on: https://medicine.uiowa.edu/internalmedicine/education/master-clinician-program/students/clinical-and-diagnostic-reasoning
7. European Heart Association. Cosa è il Ragionamento Clinico e Perché è Importante? [Internet]. Cited July 11, 2019 from European Heart Association. Available on: https://www.heartassociation.eu/cosa-e-il-ragionamento-clinico-e-perche-e-importante/?lang=it
8. Clinical Excellence Commission. Patient safety clinical incident management in NSW: analysis of first year of IIMS data. Annual report 2005-2006. Sydney: CEC; 2006.
9. Hughes CF. Medication errors in hospitals: what can be done? The Medical Journal of Australia 2008; 188(5):267-8.
10. Amey L, Donald, KJ, Teodorczuk A. Teaching clinical reasoning to medical students. British Journal of Hospital Medicine 2017; 2;78(7):399-401.
11. American Occupational Therapy Association. Occupational therapy practice framework: Domain & Process 2nd Edition. American Journal of Occupational Therapy 2008; 62(6):625-83.
12. Welch P, Plummer D, Young L, Quirk F, Larkins S, Evans R, et al. Grounded theory - a lens to understanding clinical reasoning. MedEdPublish 2017; 6, [1], 2.
13. Sackett DL, Rosemberg WM. The need for evidence-based medicine. Journal of the Royal Society of Medicine 1995; 88(11): 620–624.
14. Canadian Task Force on the Periodic Health Examination. The periodic health examination. Canadian Task Force on the Periodic Health Examination. Canadian Medical Association Journal 1979; 3; 121(9): 1193-1254.
15. Sackett DL. Rules of evidence and clinical recommendations on the use of antithrombotic agents. Chest 1986; 89(2 Suppl):2S-3S.
16. Woof SH, Battista RN, Anderson GM, Logan AG, Wang E. Assessing the clinical effectiveness of preventative maneuvers: analytic principles and systematic methods in reviewing evidence and developing clinical practice recommendations. Journal of Clinical Epidemiology 1990; 43(9):891-905.
17. Cook DJ, Guyatt GH, Laupacis A, Sackett DL. Rules of evidence and clinical recommendations on the use of antithrombotic agents. Chest 1992; 102(4 Suppl):305S-311S.
18. Cook DJ, Guyatt GH, Laupacis A, Sackett DL, Goldberg RJ. Clinical recommendations using levels of evidence for antithrombotic agents. Chest 1995; 108(4 Suppl):227S-230S.
19. Guyatt GH, Haynes RB, Jaeschke RZ, Cook DJ, Green L, Naylor CD, et al. Users guide to the medical literature XXV. Evidence-based medicine: Principles for applying the users guides to patient care. JAMA 2000; 284(10):1290-6.
20. Wilson MC, Hayward RS, Tunis SR, Bass EB, Guyatt G. Users guide to the medical literature. VIII. How to use clinical practice guidelines; B. What are the recommendations and will they help you in caring for your patients. JAMA 1995; 22-29;274(20):1630-2.
21. National Health and Medical Research Council [Internet].

NHMRC Levels of Evidence and Grades for Recommendations for Developers of Clinical Practice Guidelines. Cited July 23, 2019 from National Health and Medical Research Council. Available: http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=AEFFDA62A5245D6D07F060B56789ED5A?doi=10.1.1.177.4984&rep=rep1&type=pdf

22. Ebell MH, Siwek J, Weiss BD, Woolf SH, Susman J, Ewigman B, et al. Strength of recommendation taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. The Journal of the American Board of Family Practice 2004; 1;69(3):548-56.
23. Finkelstein A. Levels of evidence: how they help in applying study findings to clinical practice. Journal of Family Practice. 2005; 54:1032.
24. University of Canberra. (2019, July 05). Hierarchy of Evidence. Tratto il giorno July 20, 2019 da University of Canberra: https://canberra.libguides.com/c.php?g=599346&p=4149721
25. Sackett DL, Strauss SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-based medicine: How to practice and teach EBM (2nd ed.). Edinburg, Scotland: Churchill Livingstone; 2000.
26. Abersman M, Scheer J, Lieberman D. Using AOTA's critically appraised topic (CAT) and critically appraised paper (CAP) series to link evidence to practice. OT practice 2008; 18-22.
27. Naylor CD. Grey zones of clinical practice: some limits to evidence-based medicine. Lancet 1995; 345(8953):840-2.
28. LoBiondo-Wood G, Haber J. Nursing research: Methods and critical appraisal for evidence-based practice. St. Louis: Mosby Elsevier; 2014.
29. Grypdonck MH. Qualitative health research in the era of evidence-based practice. Qualitative Health Research 2006; 16(10):1371-85.
30. Sackett DL, Wennberg JE. Choosing the best research design for each question. British Medical Journal 1997; 315(7123): 1636.
31. Tickle-Degnen L, Bedell G. Evidence-based practice forum: Heterarchy and hierarchy: A critical appraisal of the "Levels of Evidence" as a tool for clinical decision making. American Journal of Occupationale Therapy 2003; 57(2):234-7.
32. Mantzoukas S. A review of evidence-based practice, nursing research and reflection: levelling the hierarchy. Journal of Clinical Nursing 2008; 17(2):214-23.
33. Hailemeskal MB, Sereda Y, Latypov A, Kiriazova T, Avaliani N. Perceived quality of HIV care and client satisfaction across different service providers in Ukraine. European Journal of Public Health 2019; pii: ckz124.
34. Tontini G, Vaz E, Neto EV, de Souza JC, da Silva LA, Nowazick MP. Exploring the nonlinear impact of critical incidents on users' satisfaction with healthcare services. International journal of Health Care Quality Assurance 2019; 32(3):621-634.
35. Sackett DL, Rosemberg W, Gray J, Haynes RB, Richardson WS. Evidence-based medicine: what it is and what it isn't. BMJ 1996; 312(7023):71-2.
36. Lefkowitz W, Jefferson TC. Medicine at the limits of evidence: the fundamental limitation of the randomized clinical trial and the end of equipoise. Journal of Perinatology 2014; 34(4):249-51.
37. World Health Organization (1948). Constitution. Cited July 22, 2019 from World Health Organization. Available on: https://www.who.int/about/who-we-are/constitution
38. Durning S, Artino A, Schuwirth L, van der Vleuten C. Clarifying Assumptions to Enhance Our Understanding and Assessment of Clinical Reasoning. Academic Medicine 2013; 88(4):442-8.
39. Green J, Britten N. Qualitative research and evidence based medicine. BMJ 1998; 316(7139): 1230–1232.
40. Oakley A. Who's afraid of the randomised controlled trial? Some dilemmas of the scientific method and good research practice. In Spicker D, Roberts H. Women's health counts. London: Routledge; 1992.
41. Evans D. Hierarchy of evidence: a framework for ranking evidence evaluating healthcare interventions. Journal of Clinical Nursing 2003; 12(1):77-84.
42. Shuval K, Harker K, Bahman R, Groce NE, Mills B, Siddigi Z, et al. Is Qualitative Research Second Class Science? A Quantitative Longitudinal Examination of Qualitative Research in Medical Journals. PLoS One 2011; 6(2):e16937.
43. Sidhu K, Jones R, Stevenson F. Publishing qualitative research in medical journals. British Journal of General Practice 2017; 67(658): 229–230.
44. Sandelowsky M, Leeman J. Writing usable qualitative health research findings. Qualitative Health Research 2012; 22(10):1404-13.
45. Kuper A, Reeves S, Levinson W. An introduction to reading and appraising qualitative research. BMJ 2008; 337:a288.
46. Malterud K. Qualitative research: standards, challenges, and guidelines. The Lancet 2001; 358(9280):483-8.
47. Sandelowsky, M. Using qualitative methods in intervention studies. Res Nurs Health 1996; 19(4):359-64.
48. Giacomini MK. The rocky road: qualitative research as evidence. BMJ Evidence-Based Medicine 2001; 134(1):A11-3.
49. Sasso L, Bagnasco A, Ghirotto L. La Ricerca Qualitativa. Una risorsa per i professionisti della salute. Milano: Edra S.p.A; 2016.
50. Holloway I, Todres L. The Status of Method: Flexibility, Consistency and Coherence. Qualitative research 2003; 3(3), 345–357.

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Original article: Focus on qualitative research in the healthcare

The Case/Care Manager in Eating Disorders: the nurse's role and responsibilities

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Abstract. *Background and aim of the work:* Despite its incidence, the Eating Disorder (ED) is underdiagnosed and, for its complexity, it requires multidisciplinary interventions. The Nurse and Case/Care Manager (CCM) have a central role in taking care of the patients with ED, even if the research concerning their role are lacking. Thus, the aim of the study was to investigate roles, activities and expectations of the nurse and the CCM in taking care of patients with ED. *Method:* 25 Italian different professionals were interviewed (16 women, average age 43.4; SD = 9.23). The semi-structured interview has investigated: nurses' roles and activities; perceptions of nurses' evaluation; expectations on nurses' and CCM's roles; the interprofessional collaboration. *Results:* The nurses analyse patients' care needs and coordinate the multi-professional care with empathic attitude. Their "professionalism, skills, sensitivity, ability to relate to the patient-family unit" are expectations shared by various professionals. About the interprofessional collaboration, the action of professionals is not always well coordinated, the decisions are often not shared and hospital-territory connection is not always realised. The CCM would be the reference in this process for all interviewees. *Conclusions*: In the three examined contexts the figure of the CCM was not present, but his/her importance was acknowledged in the management of the patient's care path and as a point of reference for health professionals. It seems important that CCM is institutionally recognized, because the CCM would ensure an efficient management of the clinical pathway and would guarantee the continuity and appropriateness of care. (www.actabiomedica.it)

Key words: Eating Disorders, Roles; Responsibilities, Health Care Professionals, Nursing, Case/Care Manager, Interview

Introduction

The Eating Disorders (EDs) represent one of the most common health problems among the youth population, and especially among the female population (1). In particular, among EDs, classified by the DSM-V (2) as Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge-eating Disorder (BED), the incidence of AN is at least of 8 new cases for 100,000 women in one year, while that of BN is at least 12 new cases for 100,000 women in one year. In researches conducted on clinical populations, males represent between 5% and 10% of cases of AN, between 10% and 15% of cases of BN, and between 30% and 40% of BED (3, 4, 5).

Although there is a tendency to chronicize in lifetime, the EDs are under diagnosed. People who suffer from it show a delay in access to services and seek medical observation after a long history of disease. These features increase clinical complexity as well as social and relational compromise of patients with EDs.

The Eating Disorders compromise the health of the person on several levels (physical, psychological, social, and relational) with consequences on the patient's quality of life, from the onset of symptoms until the entire course of the disease. Then they require multidimensional skills, multi-professional interventions (by psychiatrists, psychologists, nutritionists, general practitioners, internists, endocrinologists, paediatricians, child neuropsychiatrists), and multidisciplinary interventions (such as specialist outpatient therapy, intensive outpatient therapy or day-time centre, intensive hospital rehabilitation, ordinary and emergency hospitalisation).

There are several guidelines for the diagnosis and treatment of EDs, such as those of the American Psychiatric Association (APA) (6) and of the National Institute of Clinical Excellence (NICE) (7), which are based on a specialist team approach and on the clinical, psychological and social evaluation of the person. In Italy, patients with EDs are treated following the recommendations of the 2012 National Conference (8), combined with the APA and the NICE guidelines. Each Local Health Service (LHS) has a multidisciplinary specialist service for prevention, therapy and rehabilitation of EDs. The LHSs should guarantee the outpatient activity, plan admissions and day rehabilitation activities in Day Hospital regime and schedule possible residential treatments at specialist health structures. In particular, the care network should guarantee the continuity of the therapeutic path, based on 5 care levels:

- First level: general practitioner, free-choice paediatrician;
- Second level: hospital specialist clinic;
- Third level: day service, day hospital (diagnostic, therapeutic, rehabilitation) and day centre;
- Fourth level: intensive residential rehabilitation and rehabilitative therapeutic community;
- Fifth level: ordinary and emergency hospital admissions.

From the various guidelines, it emerges that the nurse and the Case/Care Manager (CCM) play a central role in the taking in charge of the patient as they act as a link between the hospital and the territory, even if in daily practice they play a marginal role compared to the medical one.

The CCM is evolving as a response to the evolution of the changes of the health system, with the primary aim of satisfying the bio-psycho-social needs of the person through the management of the entire course of care and through the coordination of the several health and social assistance services.

The CCM guarantees a global management, promoting a series of integrated interventions so as to achieve a synergistic result. In particular, the CCM guarantees the patient's support throughout the entire therapeutic course, plans care and ensures its implementation, evaluates achieved results and guarantees a high level of cooperation between the health, socio-assistance and territorial professionals involved (9, 10). The CCM is also part of the multi-disciplinary team and plays both a coordinating role and a clinical, managerial and educational one. Therefore, the CCM works in several care settings: ambulatory, day hospital, hospital, residential and semi-residential care (11).

The CCM also helps to improve: the quality of life of the patient through the common identification of care goals; the acknowledgement of the system of values and beliefs; the encouragement in identifying resources and capabilities of patient and family, helping them to develp realistic expectations compared to assistance results (12).

Unlike the United States of America, where the CCM has been present for many years, in Italy the CCM has been present only in the last decade. Similarly, to France, Germany and the United Kingdom, the role of the CCM in Italy is strictly for nursing purposes.

In addition, literature claims that the most suitable professional to hold this role is the nurse. In fact, research shows that nurses play an essential role in the recovery process of EDs (13, 14). They favour a good therapeutic relationship showing listening and reassuring attitudes towards the patient (15, 16, 17, 18).

As part of the patient's assistance with EDs, nurse's behaviour and attitudes are targeted to encouraging dialogue and active listening (19, 20), creating a therapeutic alliance (21), focusing on the patient needs, assisting and supporting the family (22) and ensuring comprehension and empathy (23, 24). The CCM nurse integrates personal/professional and communicative/relational skills to achieve greater effectiveness in achieving objectives and undertaken actions (25).

The CCM therefore represents a figure of mediation of the patient with the family and among the various figures of the team, planning and coordinating the multi-professional implementation of the care pathways and the protection of the rights of the person.

Despite these evidences of the literature, researches concerning the point of view and experiences of nursing care of EDs patients are extremely lacking (26, 27), even if limited scientific material suggests that these professionals find taking care of EDs patients particularly challenging (28, 29, 30).

Aims

The primary aim of the research was to analyse the role and responsibility of the nurse and the CCM in the interdisciplinary management of cases, also in order to prove the importance of the CCM model for the coordination of the EDs assistance.

The secondary aim was to highlight similarities and differences in the diverse treatment contexts analysed, in which these professionals take care of EDs patients.

Method

Study Design

The research included a qualitative study with a descriptive goal in order to elaborate the subjective perceptions of different professionals on regarding nurses and CCMs roles and responsibilities, and in particular on regarding: nurse activities, evaluation compared to the nurse, role expectations regarding the nurse and the CCM.

Instrument

A semi-structured individual interview was conducted with the aim of detecting the perceptions of the nurse and of the other professionals with whom he or she interacts. In particular, the interview has investigated the following 5 areas following the Levati method (31):

1) roles and activities performed by nurses (e.g. *What are the activities that the nurse carries out within the Operational Unit (O. U.) compared to EDs patients?*);
2) perceptions of nurses' evaluation (e.g. *From whom is a nurse evaluated? To whom must he/she answer for his/her work?*);
3) expectations on nurses' role (e.g. *What do you expect from a nurse about EDs patient care?*);
4) perceptions and expectations on Case/Care Manager's role (e.g. *Have you ever heard of the Case/Care Manager? What do you think of his/her role?*);
5) interprofessional collaboration (e.g. *Are there moments of team work? Who participates in them?*).

Data Analysis

On the whole textual corpus, a thematic content analysis (32) was performed by three researchers. The inter-judge accordance was calculated by Cohen's Kappa Coefficient (.087), in order to make a comparison of the narrative themes emerged in reference to the aims of the research.

Healthcare Contexts

Participants were selected through a convenience sampling in three different health contexts: New Children's Hospital of University Teaching Hospital of Parma; Specialized Medicine / Diabetology Hospitalization and Eating Disorders Unit of Reggio Emilia's Santa Maria Nuova Hospital; Day Hospital of Diagnosis Prevention Service and Treatment of the Local Health Service 5 of La Spezia.

In Parma actually a specific DTAP (Diagnostical-Therapic Assistential Pathways) of the EDs patient does not exist. The patient is taken in charge by the internal paediatrician of the Operative Unit of reference, to which the patient arrives after direct access to the Paediatric Acceptance Desk. For EDs patients there is not a unique treatment only but, rather, an ensemble of clinical and psychiatric/psychological treatments. The Eating Disorder treatment is divided into two phases. The first one consists in the re-establishment of body weight in a short time and saving of life, also through hospitalization; during hospitalization, parenteral or enteral therapy is practiced.

The second one consists in the psychology individual sessions. In the Paediatric Unit the hospitalization occurs for patients between 14-17 of age for whom the best accommodation is identified according to the unit's situation and to the patient's features.

Reggio Emilia provides an interdisciplinary approach for both outpatient and intensive partial or total hospitalization treatments. The hospitalization in Specialized Medicine /Diabetology Department and Eating Disorders Unit is necessary in case of serious physical problems or acute psychiatric comorbidities; these are treatments limited in time and aimed to achieving a resolution of the specific acute condition. Specialized psychotherapeutic and nutritional support for Eating Disorders is provided as well as network paths with the territory that allow rehabilitative care and therapeutic continuity. This continuity has the advantage of being able to create a privileged path for the patient who can benefit of the most suitable therapy compared to his state of health and to physical and psychological needs, without interrupting the diagnostic-therapeutic path.

Regarding La Spezia, the Eating Disorders Unit is present at the Mental Health Centre (for patients over 18) and it includes a psychiatrist and a psychologist. Nurses are also always present as well as dieticians. The entire staff has undergone specific training for the treatment of EDs.

Access takes place directly upon request of the patient and/or his/her family members, upon request of the general practitioner or by other services, such as the Counselling Service, the Emergency Department, the Psychiatric Service of Diagnosis and Treatment or other hospital wards. Family counselling and group psycho-educational interventions are planned. Should a taking in charge of family members be necessary, collaboration with psychologists of the multidisciplinary service is provided. Based on the assessments carried out an individualized path is provided which may include the outpatient taking in charge, admission in Day Hospital, hospitalization in medical ward and in the Psychiatric Service of Diagnosis and Treatment or in a specialized department for EDs.

The choice of professionals to be involved was based on the study of the organization chart of the three-healthcare setting, from which the following professionals were identified: Medical Nutritionist, Psychiatrist, Psychologist, Nutritionist Biologist, Nurse, Social-Health Worker, Dietician and Nursing Coordinator.

Participants

Twenty-five participants joined the research (16 women, average age 43.4; SD = 9.23), of which: 10 Nurses, 3 Medical Directors, 4 Nutritionist Biologists, 2 Nursing Coordinators, 3 Social-Health Workes, 1 Psychologist, 1 Dietician and 1 Departmental Director.

In Reggio Emilia and in La Spezia the professionals were balanced for gender (4 men and 4 women in both contexts), while in Parma 8 women and 1 man were interviewed. The professionals average age in Reggio Emilia was 39.62 years old (SD = 8.52), in Parma was 43.33 years old (SD = 9.75) and in La Spezia was 47.25 years old (SD = 8.81).

Table 1 shows the professional roles of the participants of the three selected healthcare contexts.

Ethical considerations

The study has been conducted in agreement with the Ethical Principles for Medical Research Involving Human Subjects of the Helsinki Declaration and it has been approved by the International Research Board of the University of Parma. All the healthcare setting where the study took place was contacted and was asked for their availability to participate in the research. An explanatory document of the study was sent to the Coordinators of the Operating Units in order to inform them, and to agree on the access times in the structures. All eligible participants were informed of the purpose and characteristics of the study and received a clear informative written document, explaining the design, aims, procedure and ethical considerations of the research. Informed consent was obtained before the professionals' participation. Those who signed the consent have been informed that participation in the study was voluntary and that they could withdraw their consent to participate at any time.

Table 1. Professional roles of respondents

Professional role	Santa Maria Nuova Hospital of Reggio Emilia	University Teaching Hospital of Parma	Local Health Service 5 of La Spezia	Total
Nurse	4	3	3	10
Medical Director	1	1	1	3
Nutritionist Biologist	2	1	1	4
Nursing Coordinator	/	1	1	2
Social-Health Worker	2	1	/	3
Psychologist	/	1	/	1
Dietician	/	1	/	1
Departmental Director	/	1	/	1
Total	**9**	**10**	**6**	**25**

Results

1. Roles and activities performed by nurses

For the various professionals, nurses play an essential role in the recovery process, thanks to a therapeutic program, carried out with criteria of adequacy and appropriateness of care, high professionalism and excellent relational skills. In fact, the nurses take into consideration the protocols and the procedures designated, but also and above all the individuality of each patient. The nurses themselves declared:

"Usually we carry out patient care, data collection trying to establish a relationship of trust. We talk to the family explaining the activities of the department. Blood tests are performed, vital signs are checked, electrocardiogram is carried out" (Nurse, Reggio Emilia).

"The activities that a nurse does are multiple, they can be divided into direct assistance activities, such as, for example, withdrawals, positioning of the gastric nose tube, drip and more personal activities, more intimate as trying to understand the patient, listening to him/her in order to build a relationship of trust, which in nursing care is fundamental" (Nurse, Parma).

"The activities I carry out with respect to patients with EDs are: reception, filling out of the nursing record, detection of vital signs, weight control, assisted meal and administration of therapy. Then I participate in interviews with the team, generally composed of nurse, doctor, patient and dietician" (Nurse, La Spezia).

The other professionals also agreed with what was stated by the nurses themselves.

"Nurses not only have a high quality of communication and interpersonal skills, but are able to build a relationship and trust with the patients themselves. The fundamental values are: commitment, trust, empathy, sincerity, honesty, support, confidence, ability to not judge, responsibility and consistency" (Social-Health Worker, Parma).

"In addition to a high level of professionalism and competence, I believe it is essential to have a good dose of empathy, that is very useful with these patients" (Medical Director, La Spezia).

2. Perceptions of nurses' evaluation

In the three healthcare contexts, the common thought which emerged was that nurses are evaluated primarily by the patient and family, as well as by the Nursing Coordinator and all the professionals with whom they work.

"First of all, I am evaluated by the patient and his family" (Nurse, Reggio Emilia).

"I am evaluated by the patient, by the doctor, by the Nurse Coordinator and by the family members" (Nurse,

Reggio Emilia).

"By everyone: patients, parents, relatives, coordinator, colleagues, and doctors. I must respond above all to myself, secondarily to my colleagues, to the doctors and above all to the Departmental Director" (Nurse, Reggio Emilia).

"By the Nursing Coordinator, by the doctors of the department and by the primary doctor .... Whereas from an ethical point of view, by the patient or from who takes his place" (Nurse, Parma).

"From a legal point of view, I am evaluated by the Nursing Coordinator, but, from an ethical point of view, I am evaluated by the patient" (Nurse, Parma).

Several professional figures focused on the importance that the nurse is evaluated based on his/her ability to relate to the team.

"I think that the nurse must guarantee a correct application of the planning and diagnostic therapeutic prescriptions and must act individually and in collaboration with all the professional figures he/she meets every day" (Departmental Director, Parma).

"The nurse [...] must respond to the professional rules, to the ability to adhere to the care protocols and to work in groups" (Medical Director, La Spezia).

"I think they should answer to the Coordinator. Surely to all the figures of the multidisciplinary group with whom he/she interacts" (Nursing Coordinator, La Spezia).

Finally, the professionals underlined some indispensable criteria in the evaluation of nurses such as: professional skill, reliability, responsibility and professional training.

"I am evaluated according to the criteria of productivity, professionalism and appropriateness of behaviour during the working hours" (Nurse, La Spezia).

"When you enter a specific department such as Paediatrics, there must be the sense of responsibility, the great propulsion to learning, the desire to learn, to get involved, to continue studying. In short, the willingness to change adopting a not rigid attitude" (Departmental Director, Parma).

3. Expectations on nurses' role

The participants showed the expectation that the nurse's responsibility is to take care of the person, respecting his life, health and dignity.

"Professionalism, empathy, moral support and above all non-judgment, which are not always easy to implement. I do not set myself goals to reach because the hospital stay is the smallest thing compared to the whole therapeutic path to achieve the remission of the disease" (Nurse, Reggio Emilia).

"I expect them to provide an adequate welcome, that they can establish a cordial and above all empathetic relationship. And that they can, from the first moments, put patients at ease" (Nursing Coordinator, La Spezia).

There was also the common expectation that the nurse take care of the reception of the person and also of the family through dialogue, therapeutic alliance and support.

"Professionalism, skills, sensitivity and optimal ability to relate to the patient-family unit are all expectations felt and shared by the various health professionals" (Psychologist, Parma).

"First of all we have to evaluate their way of approaching parents, because we have been able to observe that the problem of feeding the adolescent is more of a family problem […] so the nurse must know how to address parents without making them feel guilty" (Nursing Coordinator, Reggio Emilia).

"In reality we relate mainly with parents and family members who revolve around children, more than with children" (Nurse, Parma).

The participants also have show the expectation that the nurse involved in the care of EDs mediates between patient and family and among the other professionals of the team.

"The expectation is that the nurse who meets the needs of care, assistance and is able to plan and collaborate in the implementation of appropriate care pathways for the patient's well-being. Moreover, he/she is able to interact with the patient's relatives and with the various multidisciplinary figures of the team" (Social-Health Worker, Reggio Emilia).

"I would say an empathic attitude in the treatment phases from the acceptance to the management of the pathology in its clinical aspects and in the educational aspects of nutrition. I also expect the ability to work in groups and according to protocols" (Medical Director, La Spezia).

On the part of nurses, there was the desire to be supported by specific training courses on the problems of patients with eating disorders to ensure the best care and care of these patients.

"My expectations are a suitable insertion in team to be able to reach the objectives, but above all an improvement of the empathic contact with the patient. I am expecting to be able to improve my knowledge through professional practice and through refresher courses" (Nurse, La Spezia).

"To have training on this pathology as targeted as possible and to be surrounded by professionals who are able to collaborate with my work and direct me to targeted interventions. I hope in the future that there will be more training courses for us nurses and for health or social assistants because we are in contact with these patients 24 hours a day. Our training has been always in the field, in the department dealing with the situations proposed day after day" (Nurse, Reggio Emilia).

In addition to the importance of training, the active participation of the nurse in the decisions of the multi-professional team was also highlighted.

"Eating disorders are a group of psychiatric disorders that require a multidisciplinary approach and a care and therapy plan that involves not only the hospital but also all territorial assistance. All the professional figures involved should therefore be coordinated and trained to work as a team. The nurse and the various figures involved should carry out their professional skills by cooperating and coordinating according to a common therapeutic plan (Medical Director, Parma).

"To actively participate in the care pathway by carefully monitoring the patient with regards to compliance with the treatment in progress and to attends specific professional refresher courses in order to help the doctor in optimizing the treatment in progress. He/She must be able to better understand and interpret the needs of the patient, this is very important as the nurse is the professional figure who has the greatest daily contact with the patient" (Medical Director, Reggio Emilia).

In Reggio Emilia, however, nurses did not always feel adequately involved in the decision-making process.

"I would expect more involvement in the team that follows the cases. I believe that the opinion of both nurses and social-health workers can be useful in the decision-making process. Currently, only doctors and psychologists are involved. Empathy, professionalism, knowledge and a good communication among various professionals" (Nurse, Reggio Emilia).

4. Perceptions and expectations on Case/Care Manager's role

In the three contexts the figure of the CCM was not present, but the importance of the CCM was acknowledged in the management of the patient's care path and as a point of reference for the family and health professionals.

"Yes, I have heard about the CCM. I think the CCM can be very useful" (Dietician, Parma).

The presence of a professional CCM trained in taking care of the patient can improve the management of the patient's path with EDs.

"Then, the CCM allows the flow of information between the various professionals, manages the urgency and addresses the most suitable professional to manage it, collects the instances of the family and directs them towards solutions in general can also reassure patients on the management of their problem in a complete and careful way. As part of a multidisciplinary service dedicated to EDs, a CCM is indispensable to accompany the patient in the ongoing communication between the various professionals involved "(Medical Director, La Spezia).

"There is no real path of connection between the hospital and the territory that allows a gradual transition between the two health areas. It would be useful a professional to ensure compliance with the established path. A professional figure with specific skills in the field of health care management of EDs would be essential to ensure the efficiency and effectiveness of the care pathway; in particular as a point of reference for the patient's family in resolving the critical issues that occurred, both in exposing the difficulties to the territorial healthcare structure, with the aim of proposing in a rational manner possible solutions in agreement with the two actors. Certainly a CCM would be fundamental in the management part of the care path in order to guarantee that the continuity of the care path is respected. Moreover the CCM would be a point of reference for the family in order to help in solving any intercurrent problems and a point of reference for health professionals in organizing the path, adapting it to the individual patient" (Medical Director, Reggio Emilia).

The CCM could manage the exchange of information within the team and guarantee a connection between hospital to territorial structures.

"He/She is a professional who should know the pos-

sibility of intervening especially in all these difficult cases and it is perhaps the one that should act as a link between the hospital and the territory, with the possibility of creating more networks than just about at EDs, but also on other difficulties on the management of hospital discharge and helping families on the territory" (Departmental Director, Parma).

"In my opinion, the CCM would be useful if there were a figure that could act as a bridge between the multidisciplinary professionals and the patient. It would guarantee continuity of care and the passage of important information. At the moment I do not know if this CCM exists in the territory, but, in any case, I believe it is important to have a connection between family and assistance, both outside and inside the hospital. I believe it is important and fundamental that there is a figure dedicated exclusively to covering this role that is able to interact with all the professionals in order to be able to create a 360° assistance" (Social-Health Worker, Reggio Emilia).

The introduction of the CCM could entail an advantage for controlling the duration of admissions, the services performed and the related costs, crucial elements for the budget of health facilities.

"Sometimes we have had cases that have been hospitalized, that have been prolonged precisely because the figure that acted as a link was missing, that really took care of the case, and therefore not only that he founding an accommodation but founding it adequate to the situation. Even here we had long, perhaps even improper, hospitalization, but we could not leave them on a street" (Nursing Coordinator, Parma).

5. Interprofessional collaboration

We have already emphasized how taking charge of subjects with EDs is long, poly-structured and multidimensional, based on a bio-psychosocial model that adopts a global approach of the person. Thus the interprofessional collaboration becomes fundamental.

In this case, some differences emerge between the contexts investigated. In La Spezia, the knowledge of the connections between hospital and territory is well known by all the team members. The latter is encountered during the weekly meetings for the management of new cases and the planning of cases already taken into account and whenever the need emerges.

"During the meetings and the meetings with the users I relate with the psychiatrist the psychologist and the nurse who is a constant and fundamental "presence" (Nutritionist, La Spezia).

"I relate to the department team: nurses, psychologists, psychiatrists. Food, medical and psychological information are shared" (Nurse, La Spezia).

In Parma and Reggio Emilia, the moments of inter-professional sharing were more infrequent and were missed moments dedicated to briefings, collegial decisions. Also was scarce the knowledge of the structures and the tasks of the territorial context that can guarantee therapeutic continuity and adequate family support at the time of discharge.

"Information is shared in a piecemeal way, if there is no conductor, that is, if there is no definite time to possibly share all together to be able to make the point.... Understanding what is good and what is not. Understanding in what sense we are proceeding. The optimum would be to have a meeting to discuss the case. If there is not a CCM who allows all this often the way to exchange information becomes fragmented" (Psychologist, Parma).

"I do not participate in moments of teamwork: they are managed above all by the care team I am not a member" (Nurse, Reggio Emilia).

"I deal with the ward team, the doctors, the nurses, the nutritionist and the psychologist, but currently there are no moments of team work" (Nurse, Parma).

"With the nursing colleagues and with the department doctors, but there are no team moments, at least not with the nurses. Only the doctors, the nutritionist and the psychologist participate" (Nurse, Reggio Emilia)

"I relate mainly with users, the relationship with users is fundamental... in fact having a certain empathy, sympathy, esteem helps the user to feel good and improve his conditions" (Social-Health Worker, Parma).

Another critical aspect was found in the poor communication between the structures and in the scarce knowledge of the healthcare path on the territory, penalizing the continuity between hospital and territory.

"Eating disorders are a group of psychiatric disorders that require a multidisciplinary approach and a care and therapy plan that involves not only the hospital but also .... and above all... territorial assistance. All the professional figures involved should therefore be coordinated and

trained to work as a team.... The nurse and the various professionals involved should carry out their professional skills by cooperating and coordinating according to a common therapeutic plan" (Psychologist, Parma).

Discussion

On the basis of the three healthcare contexts analysed, results can be summarized as follows.

In Reggio Emilia the perception about the *roles and activities performed by nurses* was uniform among the various participants, which highlighting the tendency of nurses towards relationships with patient and family and emphasizing their empathic and professional attitude.

As for Parma, the professionals' perception was the nurses have an essential role in the process of the patient's recovery through their daily involvement. They have to analyse patients' care needs and coordinate the most suitable personalised multi-professional care. The importance of having interpersonal skills, such as: hospitality, predisposition to dialogue, observation and empathic listening was also declared.

In La Spezia what emerged was that the nurses have the task of welcoming, analysing the person's healthcare needs, coordinating the implementation of multi-professional care programs and protecting the person's rights.

As for the *perceptions of nurses' evaluation*, In Reggio Emilia different opinions were manifested. In brief, what emerged was that the nurses should be evaluated by all the healthcare members with whom they interact, and particularly by the Coordinator, by Medical Director, but also by patients and family members. In the same way, the professionals of La Spezia believed that the nurses should be evaluated by the Coordinator and by the Medical Director, according to the hierarchy of the organisation, but also by patients and family members. Alike In Parma, the nurses claimed to be evaluated by the patient and family as well as by colleagues and the Coordinator. The latter reinforced the importance of the nurses' responsibility to respond to the patient and the ability to know how to relate even with other nurses. The Medical Director and the Departmental Director emphasised the importance of some criteria in the nurses' evaluation, such as: professional skills, reliability and the ability to work in a team.

Regarding the *expectations on nurses' role,* in Reggio Emilia, the nurses did not felt sufficiently involved in the decision-making process of patient care, even if the Medical Director and the nutritionist deemed essential that nurses' actively participate in the care process. There were therefore conflicting opinions on the professional relationships and on the team work, while there was uniformity of opinion about the importance of having specific training on EDs.

In Parma, the nurses' *"professionalism, skills, sensitivity, optimal ability to relate to the patient-family unit"* were the expectations shared by the healthcare professionals. The Medical Director, in particular, reported the importance of a multidisciplinary approach emphasising the role of nursing. Even the psychologist attributed high value to the nursing role in the care process, as nursed are the "spokesman" of valuable observations in moments of team discussion. As in Reggio Emilia, nurses of Parma reported the need to participate in specific training courses on patients with EDs.

In the same way in La Spezia emerged that the nurses must be prepared both from a clinical point of view and from a relational point of view, in order to work as a team.

Regarding the *perceptions and expectations on Case/Care Manager's role* all participants of Reggio Emilia recognised their role in managing personalised care and they were perceived ad reference point for families and health professionals. This highlights a need for CCMs' training, as they take on a "fundamental" role in the organization of each person's personalised care.

Also in Parma the need for a hospital-territory connection was felt by all the professionals, even if this was not always realised. The CCM would be the professional reference in this process for all interviewees. The interviewees of La Spezia declared equally that the CCM could be the interface between the patient, the family and the multidisciplinary team. To do this the CCM must have technical and professional skills, as well as clinical and relationship ones.

In Reggio Emilia, the need for greater *interprofessional collaboration* and shared actions emerged. Particularly, nurses and social-health workers felt the lack of a moment to share information among teams and they reported the need for greater interaction between professionals. In Parma, at the same way, was emerges that the action of different professionals is not well coordinated, the decisions is often not shared, and the context of care of the territory is not adequately known.

In La Spezia the model of care considered most suitable is the multidisciplinary one and this is one practiced most: the professionals who work in teams must know how to collaborate. The interprofessional collaboration is considered essential as it leads not only to a greater healing result, but also to a reduction in treatment times.

Conclusions

Based on the results, the three examined healthcare contexts differed for two reasons.

The first was the age at which patients are taken into care: in Reggio Emilia and in La Spezia, patients are taken into care in adulthood, while in Parma patients are treated at a paediatric age.

The second related to the context of care: in Parma and Reggio Emilia treatment settings are treated at the 4th-5th stage (intensive residential rehabilitation and rehabilitative therapeutic community; ordinary and emergency hospital admissions), while in La Spezia they are treated at 2 th-3th stage (specialist hospital outpatient, day service, diagnostic, therapeutic, rehabilitative and day care centre).

Similarities can instead be found in the way patients are treated with EDs, since all the healthcare contexts follow the APA guidelines, as foreseen in the document drawn up in the "National Consensus Conference for Eating Behaviour Disorders in adolescents and young people adults" (33).

Based on these results, was appears that taking charge of people with EDs considers all levels of patient functioning: biological, psychological and socio-relational. In all the three examined contexts, it seems that nurses play an essential role in the recovery process through the involvement with the patient, implemented with criteria of adequacy and appropriateness of care, ensuring a good therapeutic relationship.

The results have also shown that nurses have high technical-specialist professionalism and excellent interpersonal skills that would make them the principal candidates for the role of CCM.

In the examined contexts, the nurse's responsibility in treating a person with respect for life, health and dignity was also clear. A nurse must be professionally prepared and able to treat the user both clinically and on a relational scale; nurses must know how to collaborate and stay in close contact with the multidisciplinary team and must encourage a strong professional understanding to guarantee the performance of the various activities.

The importance of teamwork was also highlighted, where the transfer of information about the patient and the active participation of the nurse in the care process are both fundamental. According to the multidisciplinary model (34) to ensure a benefit to patients and reduce treatment time, it is necessary to make the different professional positions interact while working in teams. This means that the individual actions of the various professionals are coordinated and that the decisions taken on different competence levels can be shared. This occurred above all in La Spezia, unlike Parma and Reggio Emilia, where difficulties in sharing information on the patient's conditions with EDs emerged. The moments of participation and interprofessional collaboration were therefore a bit lacking.

A final consideration regards the perceptions and expectations from the CCM. Located at the centre of a multidisciplinary team (in which we find a nutritionist doctor, a psychiatrist, a psychologist, a nutritionist biologist, a dietician, an healthcare assistance, a nurse, and a social worker), he/she accompanies the patient along the entire personalised care (territory-hospital), he/she takes part in decisions to be made and ensures cooperation between the professions, being aware of all the patient's clinical, welfare and social problems.

He/she is called to perform or coordinate in a multidisciplinary team, to govern and monitor the process of planning the services requested in a prompt and efficient manner, while preserving the person's interest and the sustainability of the system.

The activity of the CCM therefore includes the communication, the setting of goals and all the psychological, guidance, training, social and educational interventions. The CCM evaluates the results achieved, proposing innovative solutions starting from one's own experience and questioning, if necessary, established methods that can represent obstacles. In fact, the CCM is required to carry out evaluations, to make decisions, as well as cooperate in coordinating work within the multi-professional team, assessing the requirements for access to services and needs that require their activation. Thanks to the activation of a network of interventions, he/she leads to the resolution of user problems and to the relative satisfaction of their requests. To do this, the CCM must be able to actively listen to all the interlocutors, to value their requests, to express personal opinions and to resolve differences. Requirements and abilities therefore outline a medium-high professional profile, capable of operating in a wide variety of contexts and fit a considerable degree of autonomy and responsibility.

In the three different care contexts it appeared therefore that the CCM is the most suitable figure in sustaining and supporting the patient and their family for all their requests of information relevant to the times, and to the modalities of the personalised clinical healthcare.

Especially in Parma, the professionals declared that the CCM could lighten the work of other professionals in both a bureaucratic and clinical way.

However, in all the healthcare considered contexts the absence of an institutionalised CCM position was evident. Such position, carried out informally by professional nurses, does not therefore appear to be adequately recognized.

The results of the study therefore have shown the need for professionals to include this position within the EDs team supporting the importance that the CCM is also institutionally recognized, in order to ensure continuity of assistance from the hospital to the territory, to improve hospital care and improve the quality of life of patients with EDs, becoming a point of reference for patients and healthcare professionals. This organizational example could be an important step forward for the coordination and assistance of patients with EDs, as it would ensure a more effective and more efficient management of the healthcare.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Treasure J, Claudino AM, Zucker N. Eating disorders. Lancet 2010; 375: 583-93.
2. American Psychiatric Association, Ed. it. Massimo Biondi (a cura di), DSM-5. Manuale diagnostico e statistico dei disturbi mentali [Diagnostic and Statistical Manual of Mental Disorders]. Raffaello Cortina Editore, Milano, 2014.
3. Miller CA, Golden NH. An introduction to eating disorders: clinical presentation, epidemiology, and prognosis. Nutr Clin Pract 2010; 25: 110-15.
4. Smink FR, van Hoeken D, Hoek HW. Epidemiology of eating disorders: incidence, prevalence and mortality rates. Curr Psychiatry Rep 2012; 14: 406-14.
5. Hudson JI, Hiripi E, Pope HG Jr, Kessler RC. The prevalence of eating disorders in the National Comorbidity Survey Replication. Biol Psychiatry 2007; 61: 348-58.
6. American Psychiatric Association. Practice guideline for the treatment of patients with eating disorders (revision). American Psychiatric Association Work Group on eating disorders. Am J Psychiatry 2000; 157: 1-39.
7. National Institute for Health and Clinical Excellence: Guidance. Eating disorders: core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders. National Collaborating Centre for Mental Health, United Kingdom, 2004.
8. Gigantesco A, Masocco M, Picardi A, Lega I, Conti S, Vichi M. Hospitalization for anorexia nervosa in Italy. Riv Psichiatr 2010; 45: 154-62.
9. Berti L. La prassi del case management infermieristico in Emilia-Romagna: l'identikit professionale del case manager infermieristico [The practice of nursing case management in Emilia-Romagna: the professional identikit of the nursing case manager]. L'infermiere 2013; 2: 41-53.
10. Case Manager Society of America. Standards of practice for case management. Case Management Society of America, Arkansas, 2016.
11. Chiari P, Santullo A. L'infermiere case manager – dalla teoria alla prassi. [The case manager nurse – from theory to practice]. McGraw-Hill, Milano, 2010.
12. Smith AT, Kelly-Weeder S, Engel J, McGowan KA, Anderson B, Wolfe BE. Quality of eating disorders websites: what adolescents and their families need to know. J Child Adolesc Psychiatr Nurs 2011; 24: 33-7.
13. King SJ, de Sales Turner. Caring for adolescent females with anorexia nervosa: registered nurses' perspective. J Adv Nurs 2000; 32: 139-147.
14. Micevski, V, Mccann TV. Developing interpersonal relationships with adolescents with anorexia nervosa. Contemp Nurse 2005; 20: 102-16.

15. Button EJ, Warren RL. Living with anorexia nervosa. The experience of a cohort of sufferers from anorexia nervosa 7.5 years after initial presentation to a specialized eating disorders service. Eur Eat Disord Rev 2001; 9: 74-96.
16. Colton A, Pistrang N. Adolescents' experiences of inpatient treatment for anorexia nervosa. Eur Eat Disord Rev 2004; 12: 307-16.
17. De la Rie S, Noordenbos G, Donker M, van Furth E. Evaluating the treatment of eating disorders from the patient's perspective. Int J Eat Disord 2006; 39: 667-76.
18. Federici A, Kaplan AS. The patient's account of relapse and recovery in anorexia nervosa: A qualitative study. Eur Eat Disord Rev 2008; 16: 1-10. 19.
19. Tierney S. The individual within a condition: a qualitative study of young people's reflections on being treated for anorexia nervosa. J Am Psychiatr Nurses Assoc 2008; 13: 368-75.
20. Reid M, Burr J, Williams S, Hammersley R. Eating disorders patients' views on their disorders and on an outpatient service: a qualitative study. J Health Psychol 2008; 13: 956-60.
21. Bakker R, van Meijel B, Beukers L, van Ommen J, Meerwijk E, van Elburg A. Recovery of normal body weight in adolescents with anorexia nervosa: the nurses' perspective on effective interventions. J Child Adolesc Psychiatr Nurs 2011; 24: 16-22.
22. MacDonald P, Murray J, Goddard E, Treasure JL. Carer's experience and perceived effects of a skills based training programme for families of people with eating disorders: a qualitative study. Eur Eat Disord Rev 2011; 19: 475-86.
23. Wright KM. Therapeutic relationship: developing a new understanding for nurses and care workers within an eating disorder unit. Int J Ment Health Nurs 2010; 19: 154-61.
24. Wright KM, Hacking S. An angel on my shoulder: a study of relationships between women with anorexia and healthcare professionals. J Psychiatr Ment Health Nurs 2012; 19: 107-15.
25. Pernigotto C. Profilo professionale del case manager dell'inserimento lavorativo [Professional profile of the case manager of job placement]. Novara, 2011.
26. Newell C. Nursing and eating disorders. Eur Eat Disorders Rev 2004; 12: 1-3.
27. Ramjan LM. Nurses and the 'therapeutic relationship': caring for adolescents with anorexia nervosa. J Adv Nurs 2004; 45: 495-503.
28. Ryan V, Malson H, Clarke S, Anderson G, Kohn M. Discursive constructions of 'eating disorders nursing': an analysis of nurses' accounts of nursing eating disorders patients. Eur Eat Disorders Rev 2006; 14: 125-135.
29. King SJ, de Sales Turner. Caring for adolescent females with anorexia nervosa: registered nurses' perspective. J Adv Nurs 2000; 32: 139-147.
30. Ramjan LM, Gill BI. Original research: an inpatient program for adolescents with anorexia experienced as a metaphoric prison. AJN 2012; 112: 24-33.
31. Levati W, Saraò MV. Il modello delle competenze. Un contributo originale per la definizione di un nuovo approccio all'individuo e all'organizzazione [The skills model. An original contribution for the definition of a new approach to the individual and to the organization]. Franco Angeli, Milano, 2004.
32. Mazzara MV. Metodi qualitativi in psicologia sociale. Prospettive teoriche e strumenti operativi [Qualitative methods in social psychology. Theoretical perspectives and operational instruments]. Carocci, Roma, 2002.
33. Istituto Superiore di Sanità. Conferenza di Consenso. Disturbi del Comportamento Alimentare (DCA) negli adolescenti e nei giovani adulti [Consensus Conference. Eating Disorders (EDs) in teenagers and in young adults]. Roma, 24-25 Ottobre 2012.
34. Sly R, Mountford VA, Morgan JF, Lacey JH. Premature termination of treatment for anorexia nervosa: differences between patient-initiated and staff-initiated discharge. Int J Eat Disord 2014; 1: 40-46.

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Original article: Focus on qualitative research in the healthcare

Peer-support: a coping strategy for nurses working at the Emergency Ambulance Service

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Abstract. *Background and aim of the study:* Working in the emergency medical service often exposes nurses to highly stressful situations and can impact their quality of life. Among the strategies aimed at mitigating the effects of this phenomenon, peer-supporting represents an emerging model used in the emergency medical service setting. The aim of the study is to explore the experiences, the opinions and feelings of emergency medical service nursing staff in relation to the use of the peer supporting model. *Methods:* A semi-structured interview was carried out. Participants were recruited on a voluntary basis from an emergency medical service in the north of Italy. Interviews were audio-recorded and the data extracted were anonymised. *Results:* 14 nurses participated in the study. The totality of the participants recognized that their daily clinical practice, especially when involving paediatric patients, can have a profound emotional impact on their life in general. Furthermore, interviewees admitted that their personal copying mechanisms did not seem to be entirely effective when processing their painful experiences. The majority of the participants were in favour of introducing a peer-supporter in the ambulance service. *Conclusions:* This study emphasises the need to implement emotional support tools for non-hospital emergency nurses in daily clinical practice, in order to facilitate emotional decompression secondary to particularly stressful interventions as soon as possible. The peer-supporting strategy could represent, in this direction, a valid and shared model. (www.actabiomedica.it)

Key words: peer support, coping, resilience, nurse

1. Introduction

Daily care practice clearly demonstrates how it is not always possible to achieve complete recover or even stable results of change within the treatment processes that allow a person to return to an initial health condition. In such situations, nurses often can only observe the pain of another human being and accept the emotions and feelings that this brings out. When nurses feel overwhelmed by a feeling, in order for this feeling to become an opportunity for inner strength and personal resilience, they should not dismiss it but they should try to listen to it and recognize its origin, giving it meaning. This allows the person to accept those feelings and still relate to the client, without fearing the feelings and sensations that could arise in the nurse from this relationship (1). When emotions and feelings experienced by the nurse are not adequately elaborated and accepted, they can become a source of enormous stress with related consequences on a psychological, physical, social and working level, which in turn can result in emotional exhaustion, depersonalization, a low sense of personal fulfilment and psychiatric disorders (2).

The context of emergency-urgency seems to represent in this sense a particularly critical area. In fact, nurses in such settings frequently face intense existential and emotional experiences and at the same time they are required to constantly guarantee high levels of health services in work contexts in which human and instrumental resources are often limited (3).

Emergency nurses are very well clinically trained but they often admit having difficulties in an interpersonal relationships and communication (4). There are numerous stressors that affect the staff in the extra-hospital emergency and these range from the unpredictability of the emergency event to the variable age of the patients, from the high level of responsibility to the absence of feedback for the work performed (5). Several studies have shown that the rate of nurses working in the critical field and showing indicators of Post-Traumatic Stress (PTSD) and burnout fluctuates between 20-30% (6, 7).

The ability to pay attention to one's emotional health should be an important resource for nurses in order to provide quality of care. This approach is defined by the American Holistic Nursing Association as "self-care", an expression that refers to the self-care that the health worker exercises towards his health and includes the promotion and maintenance of his state of well-being, as well as the treatment and management of acute, chronic, and physical and or mental disabilities (8).

There are numerous strategies that aim to manage emotional wellbeing and mental health, from mindfulness techniques (9) to proactive coping methods, which consist in hypothesising a situation that could potentially occur and plan possible methods to deal with the problem (10). In last few years, the concept of "defusing" has been applied to the context of the territorial emergency. This term refers to emergency psychological assistance or to an emotional first aid (11). This is a peculiar form of debriefing, which allows the creation of a protected environment, where the health care professional can talk about personal emotional experiences. Therefore, the "defuser" is trained to be a facilitator in the elaboration of the person's experience, through empathic listening and the way the conversation is structured. A more recent model is that of the peer-supporter, or peer support, described as: "A voluntary, non-evaluative and mutually beneficial collaboration between two health care professionals of similar experience who have participated in the training and who wish to incorporate new knowledge and skills into the practice"(12).

In this regard, McDonald argues that the support of social networks, or support among work colleagues, is an essential and effective form of protection against adverse work events. Over the years, relationships of mutual help are built, among colleagues, through sharing similar experiences that allow to face the daily work challenges in a positive way. Furthermore, the importance of external support represented by good family relationships, friendships and sentimental relationships is highlighted, as they promote self-esteem and increase personal emotional security (13).

In 2001, the hospital managers of the Department of Paediatrics at the Johns Hopkins Hospital in Baltimore recognized the need to provide a support program to employees, following the difficulties faced by the staff in dealing with the management of the experience of a critical event. This was implemented following a clinical audit during which some staff reported to have been emotionally and professionally negatively impacted by traumatic events. A project called Resilience in Stressful Events (RISE) was therefore launched, which was a peer support program among health care professionals who collaborate in everyday care. This was created on the basis of an initial survey from which emerged that workers who had suffered stress after critical events where very keen to participate in such a project. The RISE program was created to provide assistance to healthcare professionals who experience a stressful event and aims at ensuring timely multidisciplinary peer-to-peer support in a non-judgmental environment, providing new tools to healthcare professionals who can thus identify healthy coping strategies and promote their general well-being. The trained health care professional (peer responder) calls back the requesting colleague within a maximum of 30 minutes after receiving the request and they have a phone interview in the event they are unable to meet him in person. During the interview, the peer responders do not ask questions related to the event. The support provided is in fact focused on the feelings, emotions and psychological experience of the caller (defusing) rather than on the technical details of the event (debriefing). According to privacy laws, all interactions and information are confidential and protected by professional secrecy, with the exception of receiving information of possible imminent damage to self or others (14).

Helping nurses cope more effectively with stress after major critical events, the program has the potential to reduce nurse turnover and productivity losses associated with burnout and moral distress related to adverse events. The cost-benefit analysis showed that the application of the peer support program provided substantial investment savings of $ 1.81 million on the annual budget for each nurse who participated in the program (15). Furthermore, in Italy there are experiences of application of peer-supporting techniques among the nursing population. For instance, since 2011, the Regional Emergency Urgency Association (AREU), based in Lombardy, designed and implemented a program of peer-support post critical event, based on active listening, managed by peers trained and assisted by health emergency psychologists. The objective was to facilitate emotional decompression and to reduce the phenomenon of isolation by identifying social support networks and promoting individual and team resilience (16).

2. Purpose of the research

The purpose of this research is to investigate any signs of emotional distress related to clinical performance with a strong emotional impact in emergency ambulance service nurses. Furthermore, this study aims at exploring whether the presence in the team of one or more colleagues, specifically trained to provide emotional support as facilitators for emotional decompression (peer-supporter), can represent according to participants' perceptions an effective tool for managing work-related stress.

3. Methods and tools

This is a qualitative study, carried out through a semi-structured interview, consisting of two main questions taken from qualitative studies conducted on critical area nurses in the literature. The questions are: "Could you describe how you felt when faced with one or more particularly significant and intense events related to your work, including sensations, thoughts and emotions?" (17) and "Could you describe the strategies you employed to deal with the emotional impact of these experiences?" (18). To this question it was added: "And have you ever tried to talk and find support in your colleagues?".

Participants were invited to discuss and express their emotions and perceptions in various situations that occurred during work. The research, with the authorization of the organization, was conducted at the Italian emergency ambulance service, called "118" and it was focused on nursing staff. The recruitment of the participants took place on a voluntary basis and the consent form for data processing for research purposes was signed. The non-probabilistic sampling included, with no distinctions, nurses working at the emergency ambulance service "118" in a hospital in northern Italy, who had experience in the extra-hospital emergency.

Data collection took place in July 2018, after consent for carrying out this study was given by the Bioethical Committee of the University of Bologna. The interviews were audio-recorded and conducted anonymously, in an environment known to the participants, in which they could feel at ease, in order to facilitate them expressing their experiences and emotions. The interviews were conducted and analyzed by all the researchers after having been faithfully transcribed on digital text documents, reporting in brackets some relevant non-verbal gestures, and after having evaluated the nodes and relationships generated by the nVivo qualitative research software12.

4. Results

The participants who voluntarily joined the project were 14 nurses (28.6%), 6 men and 8 women, out of a total of 49 nurses working on ambulances. The total duration of the interviews was 224 minutes and 53 seconds, average interview duration is 16 minutes and 4 seconds. Participants had been working at emergency ambulance service 118 for a minimum of 8 months to a maximum of 17 years.

The results of the study can be classified into three main macro areas:

1. the need to receive emotional support from colleagues
2. individual coping strategies implemented
3. participants' perceptions of peer-supporting as a resource that could facilitate processing personal experiences and feelings concerning subjectively complex events on an emotional level.

4.1 The need for emotional support

The need to receive support from colleagues as a result of interventions of strong emotional impact seems to be widely recognized and shared by the participants in the study. In fact, half of the participants tend to express it in a rather clear and explicit way, as it can been seen by the following reported comments.

Nurse 1

"The only thing I regret is that no one asked me: "Do you want to talk about it with someone? Do you need to talk to someone about your emergency intervention?" I kept my experience inside, I elaborated the event by myself".

Nurse 3

"A colleague who is very dear to me joined me at the ambulance station and as soon as I saw him I threw my arms around his neck and I started crying".

Nurse 8

"I see that my colleague needs to say something".

Half of the interviewed nurses remember and report having experienced at least one significant and traumatic experience shortly after the beginning of their professional career in the emergency ambulance service 118, particularly within the first 2 years. Taking this into consideration, it clearly emerged that the most feared intervention in terms of emotional repercussions is the one related to the management of paediatric patients. In fact, all the participants indicated this as the most significant experience from an emotional point of view, due to the difficulty in managing the relationship with the victim's parents.

Nurse 1

"I uncover the child from this blanket and there was ... something ... it is difficult to describe, but it was completely crashed, this child was destroyed [...]. The really burdensome task was really this, those twenty minutes during which the family was looking for an answer from me".

Nurse 3

"What really scared me, or at least at the beginning, I had just been left by myself immediately after the orientation, is the death by submersion syndrome of a 7-year-old child in a pool of sewage on a farm. [...] I found myself alone and my inexperience caused me to lose control, feeling unable to properly perform".

Nurse 4

"Because pediatric intervention is a high stress factor, not so much because you are treating a child, but the parents are the ones you must deal with".

Nurse 6 reported:

"What scares us the most are paediatric accidents. So, I never want to hear a child… that there is a child in cardiac arrest or about an accident with children involved".

Nurse 13

"But like with any intervention on the child, you get more emotionally involved".

Suicides, road accidents, deaths from cardiac arrest in young adults follow the list of the most feared interventions. During the interviews, a significant presence of intrusive thoughts and details concerning the event emerged. This shows how some particularly intense events are indelibly engraved in the memory of the nurse who lived them.

Nurse 3

"I remember this sunset, the nauseating smell coming from the sewage and the waste in contact with the sun must have emitted... and another thing that I remember is that my eyes burned and [puts a hand around his neck and swallows] this acrid taste in my mouth definitely caused by the gas".

Nurse 11

"One thing I remember, often it's the small details that touch you the most, trying to fix the braces on the child's teeth that had practically jumped out and you could see this piece of iron coming out ... so at least I tried to fix it for him before his father could see him".

Nurse 5

"And I remember the darkness, I remember a bit of fog, the flashing lights, the torches of the traffic police…".

Even the intervention on suicides seems to have a significant emotional impact.

Nurse 4

"I felt a bit of burnout because of all these suicides, which were linked to pre-existing family problems".

Nurse 6

"Suicide is something that has a huge emotional impact on me, not because the image I see, but because I wonder what drives a person to do this".

From the analysis of the interviews collected, some prevailing emotions emerged in particular: helplessness, caused by the impossibility of offering an effective and fully successful intervention, desperation and fear. These can be seen from the comments below:

Nurse 1

"Helplessness, because I couldn't do anything, nobody could do anything".

Nurse 6

"It made me feel helpless".

Nurse 7

"There and then I couldn't stop massaging him, it was maybe something ... I didn't want to".

Nurse 10

"We were all terrified, whether we showed it or not we all were".

When the need for emotional support was investigated, the issue of the consequences of health interventions on the personal life clearly emerged. These consequences have effects on the short-term and long-term. In fact, more than one third of the interviewees pointed out that, in some way, the emergency clinical event did not end with the clinical performance, but continued to have an impact on their emotional, physical, social and family sphere. This is clear in the following reported comments:

Nurse 1

"I don't know, I know I managed to get over it, but I can't really tell you how I processed it. I know I've thought about it every day for at least 6 months".

Nurse 8

"In the following years I had a big problem with hand dermatitis and I work with my hands, so and I have always wondered "why hand dermatitis?" […] and afterwards, I don't know but I just couldn't be in a confined space".

Nurse 3

"I find it hard to talk about it" [...] "That was the worst summer of my life and my family's life… in the pool, by the sea, in short, anything".

Nurse 12

"Those thoughts about the emergency interventions are the ones you can't get rid of, and you think about them over and over… you take them home and think about them over and over again".

4.2 Self-care and coping

From the elaboration of the interviews it can be noted that, consciously or unconsciously, all nurses have somehow adopted personal coping strategies in response to the stress caused by some very difficult emergency interventions mentioned above. A number of nurses claim that in order to deal with the repercussions of the emotional impact some care interventions cause, it is necessary to apply a real emotional detachment. Others advocate the need to be detached in order to ensure effective work performance, while others find that having only a restricted contact within a limited time frame with the patient and his family proves to be beneficial. Some coping strategies employed by emergency nurses are reported below:

Nurse 5

"I'm applying a great detachment to the limit of cynicism".

Nurse 4

"I can't get emotionally involved, it can't touch me, otherwise I can't work".

Nurse 2

"Be immediately detached…because anyway at that precise moment I had to put my emotions aside because I have a duty to carry out ".

Nurse 7

"So when you arrive you have work to do, so the mind gets focused on what you have to do." "[...] maybe on one side it protects you because you see the patient only for 10 minutes and then he's gone".

Nurse 12
"The ambulance service 118 has the characteristic of treating patients as quickly as possible and so it's easier. In the hospital emergency room the traumatic situation persists because the patient's relatives are still there".

It should be noted that other participants in the study face the clinical event through psychological mechanisms such as denial and removal. Furthermore, in order to reduce the emotional burden, defusing a situation and using irony seem to be effective tools employed by emergency nurses, while others show that they let go of what they experienced through crying.

Nurse 2
"I remove emergency interventions from my mind. I hardly remember them. I do my duties, I live the situation in the moment and then I let go, but letting go is a rational response".
Nurse 4
"I don't filter those experiences, otherwise I can't survive. It's an automatic process, it's like an emotional self-defence".
Nurse 12
"The strategy that we all put into practice, in my opinion everyone does it, is playing down".
Nurse 3
"I immediately cried, I cried, I cried my eyes out".

Another category of participants seems to find in games, sports or recreational activities a valid answer to face the need to decompress the emotions related to their work.
Nurse 12
"I don't know, I manage quite well stress and anger doing sport...".
Nurse 14
"Do you know how decompress my emotions? I run".
Nurse 8
"I noticed that maybe being in contact with nature, animals, helps me a lot".

4.3 Peer support

The answer to the question that aimed at investigating the possible benefits of relating to one another using peer-support shows that more than half of the interviewed nurses find relief in talking with their colleagues after a particularly stressful emergency intervention. In addition, talking with colleagues after the day shift seems a well-established practice that maintains group cohesion through sharing what happened during shift work, as suggested by the comments reported below:

Nurse 5
"Once the emergency intervention is over, we are back… yes, perhaps we are fortunate that when an intervention ends, we find ourselves together and we talk about it among ourselves. You start telling each other about your feelings a bit".
Nurse 11
"At the end of the day we take coffee together in the kitchenette and we process it, we talk about the most complicated situation ... and there it is ... a nice emotional outlet, a nice moment of growth, sharing...".
Nurse 6
"Well, I did this job thanks to my colleagues, who listened to me relating the events that happened".

A high number of the interviewed nurses considered as a positive solution the possible integration within the group of a peer supporter, as a tool that could facilitate the expression of what nurses felt during an emergency intervention perceived as traumatic. The main motivation for having a peer supporter is the feeling of certainly being understood, compared to the possibility of simply opening up with a different professional therapist.

Nurse 1
"Therefore, talking to a person who has the same skills, abilities and knowledge you have would probably be more meaningful".
Nurse 2
"We speak the same language, we felt the same emotions and then maybe we also related to each other from a technical point of view, but the technical as-

pects about your job come later. Listening is essential and yes dialogue is too".

Nurse 12

"I have in front of me someone who understand perfectly what I'm saying. 90% of the time he went through the same, more or less...".

Some nurses have declared that they would prefer to consider the inclusion of a psychologist with respect to peer-supporters, without dismissing how useful and beneficial the presence of peer-supporters could guarantee. This idea put forward by this group of interviewees stems from the possibility of choosing whom to contact and from knowing that there would be adequate training at the base of group discussions among colleagues. The reasons for this are: fear of being judged, possible distortion of reality, lack of respect for one's privacy, fear of overwhelming colleagues and fear of having someone new, such as the peer supporter, in their team. This is evident form the following comments:

Nurse 5

"The psychologist is someone you trust, your colleague, you know, you need to go and look for him".

Nurse 13

"Why does someone do this? And why doesn't he do that? How much does he earn do this job? This is how tensions are generated".

Nurse 12

"In front of an external figure, most likely someone feels more free to open up. [...] I mean we all maybe talk to someone you know you can talk to ... and avoid other people you are certain would refer your personal matters to others ... or that make a mountain out of a molehill".

Nurse 14

"... surely it can be useful to have an external person, but in this context, as I said before, we are not prepared, a professional figure of this type could be seen as something foreign to the ambulance service 118".

The main results of the study are summarized in table 1.

5. Conclusions

The totality of the participants identifies as a factor of high stress, as well as the most feared event, the emergency management of paediatric patients, in particular when they are traumatized. This is evident not only from the fact that the paediatric emergency is the event most frequently talked about, but also from the fear associated to the idea that such an event could happen. Furthermore, suicide is mentioned by some nurses as emotionally critical especially in the event this might involve acquaintances or adolescents. It was found that direct contact with these events can often trigger feelings of helplessness, fear and despair in the emergency nurses.

Since paediatric and suicide events cause serious repercussions on nurses' emotional state, there is a strong need to pay particular attention to those nurses who carry out these types of emergency interventions, even more so if they have been working in this setting for a short period of time, in order to facilitate emotional decompression as quickly as possible and minimize any undesirable consequences. In fact, some participants admit that their work often also influences their personal sphere, both short and long term. During the interviews, precise details regarding some environmental features of the scene of an accident emerged (eg: smells, sunset, flashing lights, noises and objects on the scene) and some characteristics of the scene (where the victims' parents / relatives were and some words they said). These details are significant as they reveal how profound the emotional impact can be.

The most common self-care strategies employed to cope with emotional stress appears to be conversing with colleagues who were at the scene of the accident present or on the same shift. This fact confirms what has been written in the literature, regarding the importance for nurses to perceive and actually receive support from their colleagues (12). Other employed and mentioned strategies during the interviews are emotional detachment on the verge of cynicism, removal, denial, physical activity, wanting to be close to a loved one, limiting contacts with the victim, playing down. Some participants mentioned crying as a way to cope with emotion and let them out. It emerged that these adopted strategies are sufficient to overcome the event

Table 1. Results divided into subcategories

High emotional impact healthcare services	Paedriatic trauma Suicide
Time when the reported event occurred	Half of the interviewed nurses report some highly intense emotional experience soon after the beginning of their working experience at the emergency ambulance service 118. The majority of them had such an experience in the first two years of their career
Main experienced emotions	Helplessness Fear Disperation
Repercussions on nurses' personal life	Short term Long term
Employed coping strategies	Talking to a colleague about a clinical intervention perceived as traumatic, emotional detachment almost to the point of cynicism, physical activity, playing down, removal, denial, limiting any contact with the victim and the victim's relatives, crying, wanting to be close to a loved one
Personal opinions regarding the presence of peer-supporters compared to the presence of a phycologist at the ambulance station 118	The majority of nurses is in favour of peer-supporters. The motivation is based on the fact that they recognise the peer-support as someone that can understand what nurses really mean when relating a traumatic event, being one of their colleagues
Nurses' Perceived obstacles	A minority of nurses does not exclude the effectiveness and the value of a peer-supporter, however the perceived obstacles are: fear of being judged, possible distortion of reality, lack of respect for one's privacy, fear of overwhelming colleagues and fear of having someone new, such as the peer supporter, in their team

at first, but often do not help in complete emotional processing.

The idea of a peer supporter was introduced and it was clearly explained to nurses that the person would be precisely a "peer" who, following a specific training in psychological first aid, is willing to listen to colleagues who identify the need to talk about an emotionally complex event in order to facilitate the elaboration of the emotion related to the experience. When interviewees were asked what their opinion was regarding the presence at the ambulance station of a peer-supporter, the majority of nurses were in favour. The main motivation behind this high consensus appears to be the fact that the peer-supporter is by definition a peer, therefore a person able to fully understand the type of experience related by nurses, thus identify oneself with it. A minority of the participants, although they do not exclude the usefulness and validity of a peer-supporter, report some perceived obstacles, such as fear of being judged, possible distorted of reality of an intense personal experience, no respect for privacy, fear of overwhelming one's peers, fear of a new person within the group and the need to work on the group in preparation for the inclusion of this new person.

At the end of the study it can be stated that emergency nurses working at the ambulance service 118, due to the critical nature of the interventions they carry out, at times experience emotions capable of affecting their emotional well-being and in some cases they struggle to cope with these adverse work events. These types of events occurred during their work and personal life experiences can become dangerously intertwined in identification dynamics that increase the psychological burden of an event, with repercussions on contexts other than work related, even in the medium and long term. The results emerged underline that, in order to prioritise prevention, the peer-supporting model, viewed as a non-judgmental interview with a suitably trained colleague, could prove to be a valuable aid to be activated especially in specific situations deemed to have a high emotional impact, such as the management paediatric patients or suicide.

Limitations

Limitations are due to the small sample size.

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Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Artioli G, Montanari R, Saffioti A. Counseling e professione infermieristica. Teoria, tecnica, casi. Carocci Faber 2015, I Ed., Roma.
2. Phyllis MJ, Trollope-Kumar K, Heather W, Everson J. Building physician resilience. Can Fam Physician 2008, 54:722-729.
3. Gelling L. An insight into nursing today. Nurse Res 2014, 21(4):5.
4. Foà C, Cavalli L, Maltoni A, Tosello N, Sangilles C, Maron io Borghini M, Artioli G. Communications and relationships between patient and nurse in Intensive Care Unit: knowledge, knowledge of the work, knowledge of the emotional state. Acta Biomed 2016, 87(4-S):71-82.
5. Laposa JM, Alden LE, Fullerton LM. Work stress and posttraumatic stress disorder in ED nurses/personnel. J Emerg Nurs 2003; 29:23-8.
6. Mealer M, Burnham EL, Goode CJ, Rothbaum B, Moss M. The prevalence and impact of post traumatic stress disorder and burnout syndrome in nurses. Depress Anxiety 2009, 26(12):1118–1126.
7. Carmassi C, Gesi C, Corsi M, Cremone IM, Bertelloni CA, Massimetti E, Olivieri MC, Conversano C, Santini M, Dell’Osso L. Exploring PTSD in emergency operators of a major University Hospital in Italy: a preliminary report on the role of gender, age, and education. Ann Gen Psychiatry 2018, 17:17.
8. Singleton JK. Nurses’ perspectives of encouraging clients’ care of self in a short-term rehabilitation unit within a long-term care facility. Rehabil Nurs 2000, 25(1):23-35.
9. Fortney L, Luchterhand C, Zakletskaia L, Zgierska A, Rakel D. Abbreviated mindfulness intervention for job satisfaction, quality of life, and compassion in primary care clinicians: a pilot study. Ann Fam Med 2013, 11, 412-20.
10. Aspinwall LG, Taylor SE. A stitch in time: Self-regulation and proactive coping. Psychol Bull 1997, 121:417-36.
11. Neil T, Oney J, DiFonso L, Thacker B, Reichart W. Emotional first aid. Louisville: Kemper-Behavioral Science Associates 1974.
12. Waddell DL, Dunn N. Peer coaching: the next step in staff development. J Contin Educ Nurs 2005, 36: 84-9.
13. McDonald G, Jackson D, Vickers MH, Wilkes L. Surviving workplace adversity: a qualitative study of nurses and midwives and their strategies to increase personal resilience. J Nurs Manag 2016, 24:123-31.
14. Edrees H, Connors C, Paine L, Norvell M, Taylor H, Wu A. Implementing the RISE second victim support programme at the Johns Hopkins Hospital: a case study. BMJ Open 2016, 6(9) :e011708.
15. Moran M, Walker M, Alexander T, Jordan J, Wagner D. Why peer crowds matter: Incorporating youth subcultures and values in health education campaigns. Am J Public Health 2017, 107 (3): 389-395.
16. AREU. Benessere in emergenza, consultabile al sito internet https://www.areu.lombardia.it/web/home/benessere-in-emergenza 2013, ultima consultazione in data 16/10/2018.
17. Yue P, Ling W, Chang L, Ying W. A qualitative study on experience of nurses caring for patients with delirium in ICUs in China: Barriers, burdens and decision making dilemmas. Int J Nurs Sci 2015, 2(1):2-8.
18. Mealer M, Jones J, Moss M. A qualitative study of resilience and posttraumatic stress disorder in United States ICU nurses. Intensive Care Med 2012, 38:1445-1451.

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Original article: Instruments and competences to improve patients' outcome

A Therapeutic Education Program for patients that underwent at temporary tracheotomy and total laryngectomy: leading to improved the "Diagnostic, Therapeutic and Assistance Path"

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Abstract. *Background and aim of the study:* Therapeutic education helps patients with a chronic disease to acquire and maintain the ability to live their life while handling their illness. Patients with temporary medium-term tracheotomy or permanent tracheostomy need to acquire skills to be able to handle the stoma, tracheal tube, related issues, and other apparatuses. This was the purpose of our therapeutic education program, which was aimed to take patients and caregiver to an efficient level of self-care. *Methods:* In 2018, was created a CME-accredited (Continuing Medical Education) "Workplace-based Learning Project" involving all the nurses in the Otolaryngology Head and Neck Operational Unit, along different specialists on the Disease Management Team, thereby forming an "Improvement Group". We established parallel workgroups for bibliography research on data-based like PubMed, Cinahl, Cochrane, Google scholar, in order to obtain the information to write up a shared document. *Results:* We wrote out an Operational Protocol which lined up nursing skills – when handling patients with medium-term tracheotomy or tracheostomy – with scientific evidence. Our standard educational plan (customizable, based on each patient's characteristics) promote the patient's learning with respect to self-care. *Conclusions:* This project has set the basis for the improvement of the quality of assistance given to the patients and therapeutic education provided them. It has encouraged the development of the skills of the nurses involved, along with their motivation, and their integration on the Disease Management Team. But, it will be necessary in the future to further evaluate the effectiveness of the program in terms of self-care. (www.actabiomedica.it)

Key words: Therapeutic Education Program, self-care, nursing skills, workplace-based learning, tracheotomy, tracheostomy and laryngectomy

Introduction

At this moment in time, health services are experiencing increasing demands for assistance. This reflects the fact that people are living longer, often to advanced old age, accompanied by chronic health problems (1, 2). This evolution led to reflection on the various aspects of nursing and care-taking entities with respect to the professional skills which enable them to respond in an appropriate manner to the needs of their citizens (2).

Due to the above, attention now shifts from the hospital, which handles acute cases, to locations which deal with chronic stages. The medium and long-term problems found here create the need for an integrated care pathway which connects them (2). In the intensive care hospitals the acute phases are treated. They are a resource to be used only when strictly necessary. This is where the patient, with his/her specific health problem, is taken into charge to face his/her specific pathology by an integrated multidisciplinary team.

With this model, a different response mode comes to the fore. Appropriate technologies and skills provided by the appropriate quantity and quality of personnel are assigned in differing degrees to clinical instability and its accompanying complexity in terms of assistance. This combination gives the patient the most appropriate and timely of responses (2-4).

In this setting, a Diagnostic-Therapeutic-Assistance Path standardizes processes using scientific evidence. It is designed to ensure professional integration and coordination, guaranteeing adequate and equal clinical outcomes, even though it does not depend wholly on professionals. Each professional, with his/her own specific competences, contributes to achieving the patient's goals, which have been identified in a shared manner (1-5).

Thus, it becomes essential to involve the patient in the decisions that concern him/her (1, 2, 5, 6). Carrying this concept further, investment must be made in the patient's therapeutic education. This then becomes part of the process which helps sick people acquire and maintain their ability to best conduct their own lives while living with the illness itself. This, in turn, enhances the effect of other therapeutic effects derived from other sources (5, 7).

The patient's family is also encouraged to participate. The context of the patient's lifestyle and experiences is also considered. And content is designed to stimulate learning how to promote empowerment and efficient self-care especially when dealing with chronic illness(5). This outcome is central to nursing assistance, and it encompasses the other goals (8).

In this manner, therapeutic education becomes a fundamental process in a structured health context. The multidisciplinary team, on a clinical assistance path with case/care management, places the patient (and his/her specific condition) at the center, while the related outcomes to pursue are studied (5). This involves the entire professional team. They interact in a focused way to guarantee coordinated and timely assistance, thereby increasing patient satisfaction and the effectiveness of the services (5).

Middle-Range Theory for Self-Care in Chronic Pathologies analyzes the characteristics and the factors necessary to make it efficient. The goal is to enable the patient to:(9)

- Better understand his/her illness, treatments, and complications
- Handle his/her new condition in a competent way, having been given info and knowhow
- Avoid complications by reforming existing behavior modes

Scientific literature has shown that training that employs active involvement, can produce better results in terms of learning and provide positive practical effects. For this to occur, three essential elements are involved: concrete problems to resolve, interactivity, and direct involvement in favorably organized contexts (10). In optimal situations, one's own work context provides both training needs and satisfaction (10).

To support this, in 2003, the CME (Continuing Medical Education) National Commission introduced what was called "Workplace-based Learning". This was a new mode that totally integrated the work environment and clinical-assistance procedures. As a result, the added value was actually determined by a motivational push which led professional into carrying out individual or group investigations/research, finding solutions for concrete problems (10).

"Workplace-based Learning" emerged from an intentional and well-organized search for solutions to real problems. And since its origins lie in real problems, monitored over time, it is clear that the evaluation of organizational change is as decisive as the learning process. And therefore, project methodology must be rigorous enough to guarantee the quality of the results while maintaining the right flexibility for the context (10).

One way to carry out this type of training uses "The Improvement Group". This was created to show the concept of change and multidisciplinary training in one's own work environment (10).

"Improvement groups use multi-professional and multidisciplinary activities in the workplace to promote health; the continual improvement of clinical assistance, management, or organizational processes; and the consequent accreditation or certification of the health structure involved. Here the learning process occurs through the integration of a group of equals." (10, 11)

Improvement groups give operators responsibility for their own training (self directed learning), thereby encouraging colleagues to reflect upon their own work. Exchanges and reciprocal learning are promoted by sharing. Though always retaining methodological rigor, this mode encourages the possibility of incurring changes in the overlying organization. It enables it to meet the needs of the professionals involved, thereby encouraging their participation (10).

The process used to design, implement, and carry out an improvement group is divided up into the following phases (10):

1. Once a problem is identified along with the corresponding aspects that need to be faced, the head of the project writes out a program which identifies goals, participants, work phases and their duration, and a way to evaluate the project's success. Then he proposes it to the training service.
2. This document is then evaluated by a special multidisciplinary and multi-professional committee consisting of health professionals who then guarantee its appropriateness.
3. Once modified or approved by the committee, the project may start.

The head of the project must guide the work done by the participants, assign responsibility, and work on making the project transferrable, watching out for the effects. In addition the head formulates the final report, giving extra credit to those whose efforts stood out.

Training of this type – fine-tuned starting from 2005 by the Training Service of the Azienda Sanitaria Provinciale in the Province of Trento – was then initiated in 2017 at the San Martino Polyclinic Hospital in Genoa. Its usefulness was revealed as a way to focus on skills, performance, and health successes regarding the patient (10).

Method

In agreement with the considerations described above, our project was designed for Otolaryngology Head and Neck Unit of the San Martino Polyclinic Hospital (Genoa, Italy). It used workplace-based learning carried out by an improvement group, and it was conduced by the nursing referenced to the Diagnostic-Therapeutic-Assistance-Path for the oncologic head neck disease, who worked with the other members of the multidisciplinary team.

Patients who undergo open surgery, which creates medium-term temporary tracheotomies or permanent tracheostomies, need to be provided with specific skills which allow them to handle – on their own – the stoma, the tracheal tube, and all that which is affected by this and other devices, to guarantee air passage in their airways and prevent the onset of complications.

A customized therapeutic education program was set up to take patients and their related caregivers to the point of efficient self-care. Up till now, there had been no clear operational methodology which defined the contents, instruments, methods, times, places, actions, and roles involved, and so, this lack of standardization also made it difficult to track and records the outcomes. Confirming this, both the day clinic nurses who participated in check-ups and follow-ups after the patient was released, and the speech therapists who then worked with this type of patient, noted the patients lacked ability for self-care and needed for further explanations.

The most critical phase has been identified as that immediately after discharge. This is the point where patients leave a protected environment – inside of which they are safe and receive answers to all their needs – to reenter a context in which they must measure themselves against their own ability for self-care and management. And yet, these abilities are consolidated only by continual practice and the gradual acquisition of experience.

As a result, the therapeutic education carried out in the recovery phase, needs to be as complete and efficient as possible. It must focus in particular on the prevention of more serious complications (i.e. airway obstruction, infections, and hemorrhages).

By planning early and providing follow-up meetings with discharged patients, we have found that this can help them and their caregivers to acquire additional skills and greater confidence. This is turn allows the health professionals to monitor their learning process and intervene in an appropriate manner where necessary.

Patients need to be able to take care of their daily needs, carrying out the main procedures in a safe and efficient way. Additional educational can then be given on an outpatient basis, an its evolution can be monitored over time. The educational program that we designed serves to reach this goal.

But there is a difference in the training to be given to a patient who underwent temporary tracheotomy versus a patient with a tracheostomy, after a total laryngectomy. This is due to the fact that while a tracheotomy is temporary, the latter modifies permanently the upper respiratory airways. Thus, in the first case, autonomous management is more limited. Professional experts intervene in the execution of some risky maneuvers, done in the hospital. The opposite holds true with regards to total laryngectomy. In this case, the patient learns to handle and live with it, turning him/her into the main subject of the therapeutic education program of self-care.

Our goal was intended to draw up an educational project using this scenario, an intermediate phase with respect to the whole process. And only after having done so, we would create a data bank which verified the efficiency of the training program provided.

The project was divided into five phases. The **first phase** directly involved the coordinator of the Otolaryngology Head and Neck Unit of the San Martino Polyclinic Hospital in Genoa Italy and her promoter. It provided a detailed educational plan which was shared with the Chair of the Operational Unit and with the Director of the Health Professions Operational Unit.

The project was presented in December 2017 to the Scientific Committee through the Simple Departmental Structure for Training and Communication to enable a training program that would be accredited by Continuing Medical Education, carried out in accordance with its "Workplace-based Learning" methodology. Approval was obtained in February 2018.

In March, the head (and coordinator) of the project, along with a representative of the nursing group, attended a course designed to supply methodological support for the development and implementation of this type of program. This involved teaching experts and support from a distance. Once the training was completed, the project was begun.

A work team was set up as an "Improvement Group". It consisted of 25 nurses, and 13 DMT (Disease Management Team) specialists for oncologic pathologies in the cervico-facial district (two otolaryngologists, a radiotherapist, an oncologist, two psychologists, a physiatrist, a physiotherapist, two speech therapists, two dieticians, and a health assistant), actively working as experts. It was also involved a nurse infection control.

Though well aware that the number of participants was rather high, it was decided to involve the whole nursing group, the principal students from the training course subjected to the proposed project, in order to permit the latter to become a source of motivation, producing consolidation/development of skills through the training.

In this specific context it is, in particular, the nurse who works the most to activate the educational program with the patient and/or caregiver.

Seeking our goal in self-care terms, we felt that it was necessary to work on the updating of nursing skills with regards to recent scientific research when dealing with patients with tracheotomies or tracheostomies. We also felt it necessary to plan and extend the program of therapeutic education by specifying its subject, methodology, and tools. A major role was also played by dieticians and speech-therapists, working more independently. The time required for each of these, including nursing, was 25 hours in total.

The **second phase** was begun in April 2018. It established three secondary groups of nurses, working in parallel, who researched:

1. Scientific evidence regarding the handling and the necessary devices for tracheotomy-tracheostomy.
2. Therapeutic education concepts and related methods, along with the identification of tools for recording educational actions that have been carried out and an evaluation of their effectiveness in teaching the patient/caregiver, the concept of self-care, and the quality of life for patients who have undergone tracheostomy.
3. Brochures and booklets providing information for laryngectomized patients, in order to write a specific booklet to be given to the user and/or caregiver at the same of the learning period.

These groups worked independently, though under the guidance and supervision of the head and coordinator of the project. Some work was done at home, and then discussed with the group.

Databases like PubMed, Cinahl, Cochrane, Google scholar, were consulted. The key words we selected were: “tracheotomy”, “tracheostomy”, “tracheostomy management”, “laryngectomy”, “tracheostomy tube”, “tracheostomy guidelines”, “laryngectomy management”, “tracheostomy care”, “laryngectomy tube”, “pneumonia infection”, “suction”, “suction management”, “self-care”, and “patient education”.

As for point 1 inclusion criteria have been: documents both in English and Italian, covered the years from 2008 to 2018, and all dealt with adult patients. 10 guidelines were analyzed, along with 2 operational protocols, 1 policy, 1 procedure, 7 articles, and 3 manuals. We did not include publications which did not provide detailed procedures for the handling of tracheotomy-tracheostomy or those which did not seem pertinent (Table 1, Figure 1).

As for point 2 inclusion criteria have been: publications, both in English and in Italian, dating from 1998 to 2018, that discuss therapeutic education, self-care in general, and tracheostomized patients and their relative quality of life.

We consulted 5 books, 1 guideline, 3 operational protocols, 18 articles, and 1 training program for educators. We excluded documents which describe educational methodologies that were not very applicable in our specific context of reference. We did not use those that were too generalized, and texts that did not focus directly on patient learnings (Table 2, Figure 2).

As for point 3 just a few booklets were consulted, without doing an in-depth search, because we had decided to write our own. Our booklet would discuss basic subjects and supply useful information that our patients, having undergone a total laryngectomy, would need.

The product of the work groups’ research was shared on many occasions. On the basis of the data that emerged, we made decisions regarding the next phases to be taken, until a final document was approved by all.

The **third phase** began in May 2018. It expanded up an operational protocol which included both skilled procedures for the nurses handling a tracheotomy-tracheostomy and the therapeutic education program for the patient or his/her caregiver in the recovery phase. A booklet for the laryngectomized patients was also written to be provided them at the start of the training program. These tools were the specific goal of the training project, and will be described in detail when we speak of results.

The experts involved in this phase were various specialists from the Disease Management Team. They were chosen on the base of their subject and specific competences, and greatly helped us write out the information material given to the patient. Each specialist contributed with his/her specialty. The final documents were then shared among the operators.

The **fourth phase** was begun in September 2018. In this phase, both the Chair of the Otolaryngology Head and Neck Unit and the Director of the Health Professions Unit checked and approved the operational protocol and the information booklet. Publication on the official website was requested after an evaluation carried out by the Clinical Risk Management Unit, Quality Accreditation, and Public Relations Office.

The **fifth phase**, started in January 2019, is still ongoing, and involved the application of the operational protocol created.

Results

The guidelines and the operational protocols that we chose were considered to be specifically instituted for tracheotomy-tracheostomy, and provided detailed information for the various procedures. These documents were carefully evaluated and from those were extracted our operational protocol described below.

With regards to the theme of therapeutic education and self-care, we selected documents which provided definitions, methods, tools, and variables which could affect results. We also considered articles related to the quality of life of patients with tracheostomy. Our research found only two instruments to register the occurrence of educational interventions, and none related to the traceability of the self-care level evaluation.

Four instruments were found to evaluate the skills of health service operators for the various procedures

Table 1. Records selected related to Tracheostomy management

N.	Authors	Title	Record	Source and Date
1	ACI – NSW Agency for Clinical Innovation – ICCMU – Intensive Care Coordination & Monitoring Unit. Guideline Owner: NSW Agency for Clinical Innovation Primary authors: Chaseling W. Guideline Management Team Chaseling W., Bayliss S.L., Rose K., Prof. Davidson P., Armstrong L., Boyle M., Chung C., Caldwell J., Griffiths K., Johnson K., Lowe S.P., Reddy N., Thackray N., Zimbiti C.	Suctioning an Adult ICU Patient with an Artificial Airway: A Clinical Practice Guideline	Guideline	2014 https://www.aci.health..nsw.gov.au/_data/assets//pdf_file/0010/239554/ACI14_Suction_2-2.pdf
2	General Direction S.I.T.R.A, Regione Lombardia, ASL Brescia. Manager: Dr. Di Meo S. SITRA ASL Brescia. Working groups coordinator: Crescini L. - SITRA - ASL Brescia Working group: Agazzi C., Baruffaldi S., Bertozzi E., Bianchetti S., Di Benedetto F., Fappani M., Fiorini J., Luvriti C., Franzini M. A., Guarneri S., Menchi V., Pollini S., Roberti O., Shaban Y., Venturi A., Festa G., Foglia V., Gaia M., Leali R., Raccagni M., Romagnoli P., Sbaraini C., Beruffi M. S.	L'assistenza e l'intervento educativo alla persona portatrice di cannula tracheale [Assistance and training for the patient with a tracheal tube]	Operational protocol	December 2011 https://docplayer.it/10074015-L-assistenza-e-l-intervento-educativo-alla-persona-portatrice-di-cannula-tracheale.html
3	NHS – Southern Health – NHS Foundation Trust – SH CP 214 Author: Guy S.	Tracheostomy Care Guidelines	Guideline	October 2017 https://www.southernhealth.nhs.uk/resources/assets/attachment/full/0/153927.pdf
4	West Suffolk – NHS Foundation Trust Document owner: Lewis S., Ingalla G.	Tracheostomy/ Laryngectomy: Managing the Patient	Trust Policy and Procedure Document Reference: PP(17) 315 Guideline	August 2017 https://www.wsh.nhs.uk/CMS-Documents/Trust-policies/301-350/PP(16)315TracheostomyLaryngectomyManagingthePatient.pdf
5	NSW – Health - Nepean Blue Mountains Local Health District Author: Carpen H.	Care of Adult Patients with a Tracheostomy Tube	Procedure	January 2015 http://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0008/292580/Tracheostomy-care-nbm.pdf
6	NHS – QE Gateshead – Quality and excellence in health Authors/Reviewer Wood M. & Marr H.	Management of adult patients with a tracheostomy or laryngectomy	Policy No OP80	February 2017 https://www.qegateshead.nhs.uk/sites/default/files/users/user10/OP80%20Management%20of%20Adult%20Patients%20with%20a%20Tracheostomy%20or%20Laryngectomy%20v2.pdf

(continued)

Table 1 *(continued)***.** Records selected related to Tracheostomy management

7	Regione Lombardia –ASST Pavia Working group: Bassi S., Corsi P., Di Martino B., Galloni D., Lazzati R., Mirabile P., Noto C., Zampieri G. Collaborators Castigliola L., Filippone M., Lanza L., Martinotti R., Targa M.	Gestione cannule tracheali e l'educazione al paziente [Tracheal tube management and the patient education]	Operational protocol	January 2016 https://docplayer.it/44173796-L-educazione-al-paziente.html
8	St .James's Hospital Nursing, Owner: Ms Norton J. Tracheostomy Care Working Group Reviewed by: Prof. Timon C., Mr Kinsella J., Prof. Stassen L., Dr. Fagan C., Dr. Moriarty J., Ms. Roche M., Ms. Brady A. Approved by: Mr Gallagher P.	Tracheostomy Care Guidelines	Guidelines	December 2013 http://www.stjames.ie/GPsHealthcareProfessionals/ConferencesCourses/TracheostomyTalks/Tracheostomy%20Guidelines%20(2013).pdf
9	St George's Healthcare NHS Trust Brunker C., Dawson D., Dr Kourteli E., Maistry N., More M., Wilkinson O., Kelly G.	Guideline for the Care of Patients with Tracheostomy Tubes	Guideline	2012 Edition http://replantmed.hu/tudaskozpont-replantmed/category/6-intenziv-terapia-es-aneszezia?download=24:guidleine-tracehosztomias-betegeknek
10	Tracheostomy Care – Intensive care Society Standards Prepared on behalf of the Council of the Intensive Care Society by: Bodenham A. (Chair), Bell D., Bonner S., Branch F., Dawson D., Morgan P., McGrath B., Mackenzie S.	Standards for the care of adult patients with a temporary Tracheostomy; STANDARDS AND GUIDELINES	Guideline	2014 https://www.theawsomecourse.co.uk/ICS/ICS%20Tracheostomy%20standards%20(2014). pdf

to assist patients with tracheostomies. One evaluated the patient upon his/her arrival in the hospital with a check list for the procedures and evaluations to be carried out. Five forms recorded the evaluation of the patient's condition and/or the presence of apparatus. And one was a check list of the material and equipment that were available to the patient upon release from the hospital. But we did not analyzed them as they were not on topic with regards to our project.

An operational protocol was created called "***Assistance and Therapeutic Education for the Laryngectomized or Tracheotomized Patient Belonging to the Diagnostic-Therapeutic-Assistance Path for the Oncologic Head Neck Disease.***". Its goal was to line up nursing skills with recent scientific evidence – while also standardizing behavior inside the group – and to set up a standard educational plan customized for each patient/caregiver to promote his/her self-care.

The document was divided into two parts. It also had two attachments which were equivalent to self-standing documents:

- **PART I** - A detailed description was given for all the procedures that nurses carry out – completely on their own, or in the presence of an otolaryngologist – related to the handling of a medium-term tracheotomy or a tracheostomy, tracheal tube, along with any other apparatuses, devices, or dispositions designed to guarantee the airway patency and prevent the onset of complications. The second part of the operational protocol is based on this.

- **PART II** – After the concept of therapeutic education and self-care was introduced, a description of the methodology regarding both the patient and the caregiver was presented. Next, the subjects were

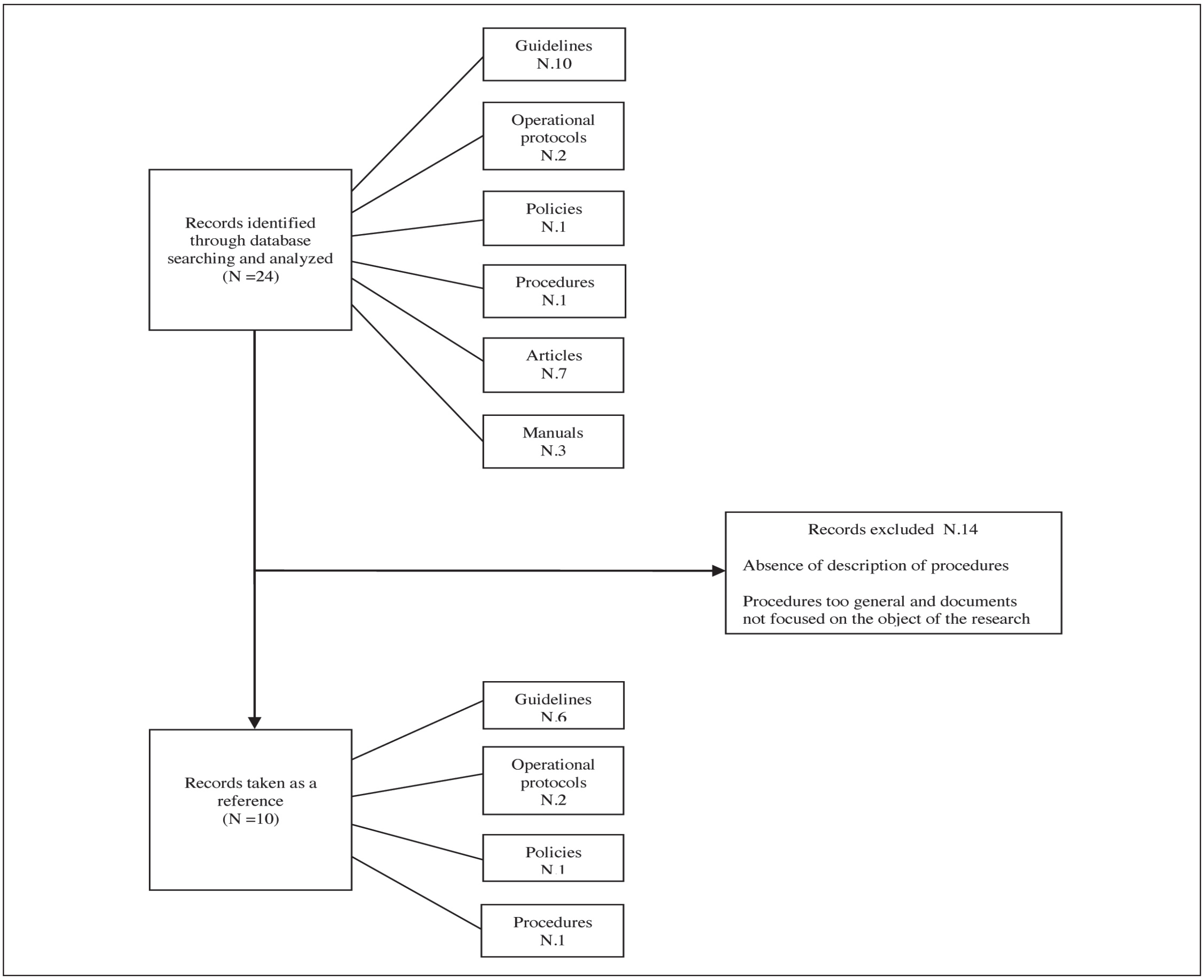

Figure 1. Tracheostomy management literature review flow diagram

described in detail: the specific goals, contents, methods, roles, instruments employed, and the modes used to evaluate the patient's understanding. A distinction was made between the patient who has undergone a total laryngectomy and the patient with a temporary tracheotomy, as some of the procedures can be done autonomously in the former case, but not in the latter.

Evaluation of the patient's learning is a rather difficult process. It is necessary to use validated and objective methods and instruments that are addressed to the patient and/or the caregiver. The former is totally or partially unable to express himself/herself in words during the days that followed the surgery. And so, we decided to verify the patient's understanding of our explanation of procedure techniques by simply observing the patient/caregiver, using the procedures summarized in this part of the protocol. But the evaluation of the patient's ability to handle this new condition – and namely the level of self-care reached – is much more complex, and therefore a more appropriate instrument should be used in the future. (12)

• ATTACHMENT I – *"Form used to record tracheostomized patient education"*

We created a form which records training given to patients and/or caregivers. It is intended to highlight and record the subjects explained, along with the extent to which they are able to understand what is

Table 2. Records selected about Therapeutic Education and Self-Care

N.	Authors	Title	Record	Source and Date
1	Bagnasco A., Calza S., Petralia P., Aleo G., Fornoni L., Sasso L.	Investigating the use of Barrows Cards to improve self-management and reduce healthcare costs in adolescents with blood cancer: a pilot study	Article	J Adv Nurs. 2016 Apr; 72(4):754-8.
2	Beghelli A., Ferraresi A., Manfredini M.	Educazione terapeutica. Metodologia e applicazioni [Therapeutic Education. Methodology and applications]	Book	Carocci Faber 2015
3	Bickford J.M., Coveney J., Baker J., Hersh D.	Support following total laryngectomy: Exploring the concept from different perspectives	Article	Eur J Cancer Care (Engl) 2018 May; 27(3):e12848.
4	Bobbo N.	Fondamenti pedagogici di educazione del paziente [Pedagogical foundations of education to the patient]	Book	CLEUP Editore 2012
5	Bowers B., Scase C.	Tracheostomy: facilitating successful discharge from hospital to home	Article	Br J Nurs 2007 Apr 26-May 9;16(8):476-9
6	Prof. Brook I., Italian translation by Dr. D'Ascanio L.,Dr. Ori M.	La Guida per il Paziente Laringectomizzato [The Laryngeectomee Guide]	Book	November 2017 www.aooi.it/wp-content/uploads/2017/11/Guida-al-Paziente-Laringectomizzato.pdf
7	Cnossen I.C., van Uden-Kraan C.F., Eerenstein S.E., Rinkel R.N., Aalders I.J., van den Berg K., de Goede C.J., van Stijgeren A.J., Cruijff-Bijl Y., de Bree R., Leemans C.R., Verdonck-de Leeuw I.M.	A Partecipatory Design Approach to Develop a Web-Based Self-Care Program Supporting Early Rehabilitation among Patients after Total Laryngectomy	Article	Folia Phoniatr Logop 2015; 67(4):193-201
8	General Direction S.I.T.R.A, Regione Lombardia, ASL Brescia. Manager: Dr. Di Meo S. SITRA ASL Brescia. Working groups coordinator: Crescini L. - SITRA - ASL Brescia Working group: Agazzi C., Baruffaldi S., Bertozzi E., Bianchetti S., Di Benedetto F., Fappani M., Fiorini J., Luvriti C., Franzini M. A., Guarneri S., Menchi V., Pollini S., Roberti O., Shaban Y., Venturi A., Festa G., Foglia V., Gaia M., Leali R., Raccagni M., Romagnoli P., Sbaraini C., Beruffi M. S.	L'assistenza e l'intervento educativo alla persona portatrice di cannula tracheale [Assistance and training for the patient with a tracheal tube]	Operational Protocol	December 2011 https://docplayer.it/10074015-L-assistenza-e-l-intervento-educativo-alla-persona-portatrice-di-cannula-tracheale.html

(continued)

Table 2 ***(continued)*****.** Records selected about Therapeutic Education and Self-Care

9	Jaarsma T., Cameron J., Riegel B., Strömberg A.	Factors Related to Self-Care in Heart Failure Patients According to the Middle-Range Theory of Self-care of Chronic Illness: a Literature Update	Article	Curr Heart Fail Rep. 2017 Apr; 14 (2):71-77
10	McDonald J., McKinlay E., Keeling S., Levack W.	Becoming an expert carer: the process of family carers learning to manage technical health procedures at home	Article	J Adv Nurs. 2016 Sep;72(9):2173-84
11	Mehta A.B., Wiener R.S., Reardon C.C.	Living with a Tracheostomy	Article	Am J Respir Crit Care Med. 2016 Aug 1;194(3):P5-6
12	World Health Organization – Office for Europe Copenhagen Report of a WHO Working Group	Educazione terapeutica del paziente [Therapeutic education of the patient]	Training program for educators	1998- Italian translation March 2007 www.assdiabre.it/files/Raccomandazione-OMS-su-Educazione-Terapeutica-.pdf
13	Regione Lombardia – ASST Pavia Working group: Bassi S., Corsi P., Di Martino B., Galloni D., Lazzati R., Mirabile P., Noto C., Zampieri G. Collaborators Castigliola L., Filippone M., Lanza L., Martinotti R., Targa M.	Gestione Cannule Tracheali e l’educazione al paziente [Tracheal tube management and the patient education]	Operational protocol	January 2016 https://docplayer.it/44173796-L-educazione-al-paziente.html
14	Riegel B., Jaarsma T., Strömberg A.	A Middle-Range Theory Of Self-Care Of Chronic Illness	Article	ANS Adv Nurs Sci. 2012 Jul-Sep; 35(3): 194-204
15	Singer S., Danker H., Guntinas-Lichius O., Oeken J., Pabst F., Schock J., Vogel H.J., Meister E.F., Wulke C., Dietz A.	Quality of life before and after total laryngectomy: results of a multicenter prospective cohort study	Article	Head Neck. 2014 Mar;36(3):359-68
16	St George’s Healthcare NHS Trust Brunker C., Dawson D., Dr Kourteli E., Maistry N., More M., Wilkinson O., Kelly G..	Guideline for the Care of Patients with Tracheostomy Tubes	Guideline	2012 Edition http://replantmed.hu/tudaskozpont-replantmed/category/6-intenziv-terapia-es-anesztezia?download=24:guidleine-tracehosztomias-betegeknek
17	Woisard V., Galtier A., Baumann L., Delpierre C., Puech M., Balaguer M.	Therapeutic education of total laryngectomy patients: Influence of social factors	Article	Rev Laryngol Otol Rhinol (Bord). 2015;136(5):171-9
18	Wong K., Gilad A., Cohen M.B., Kirke D.N., Jalisi S.M.	Patient education materials assessment tool for laryngectomy health information	Article	Head Neck. 2017 Nov;39(11):2256-2263

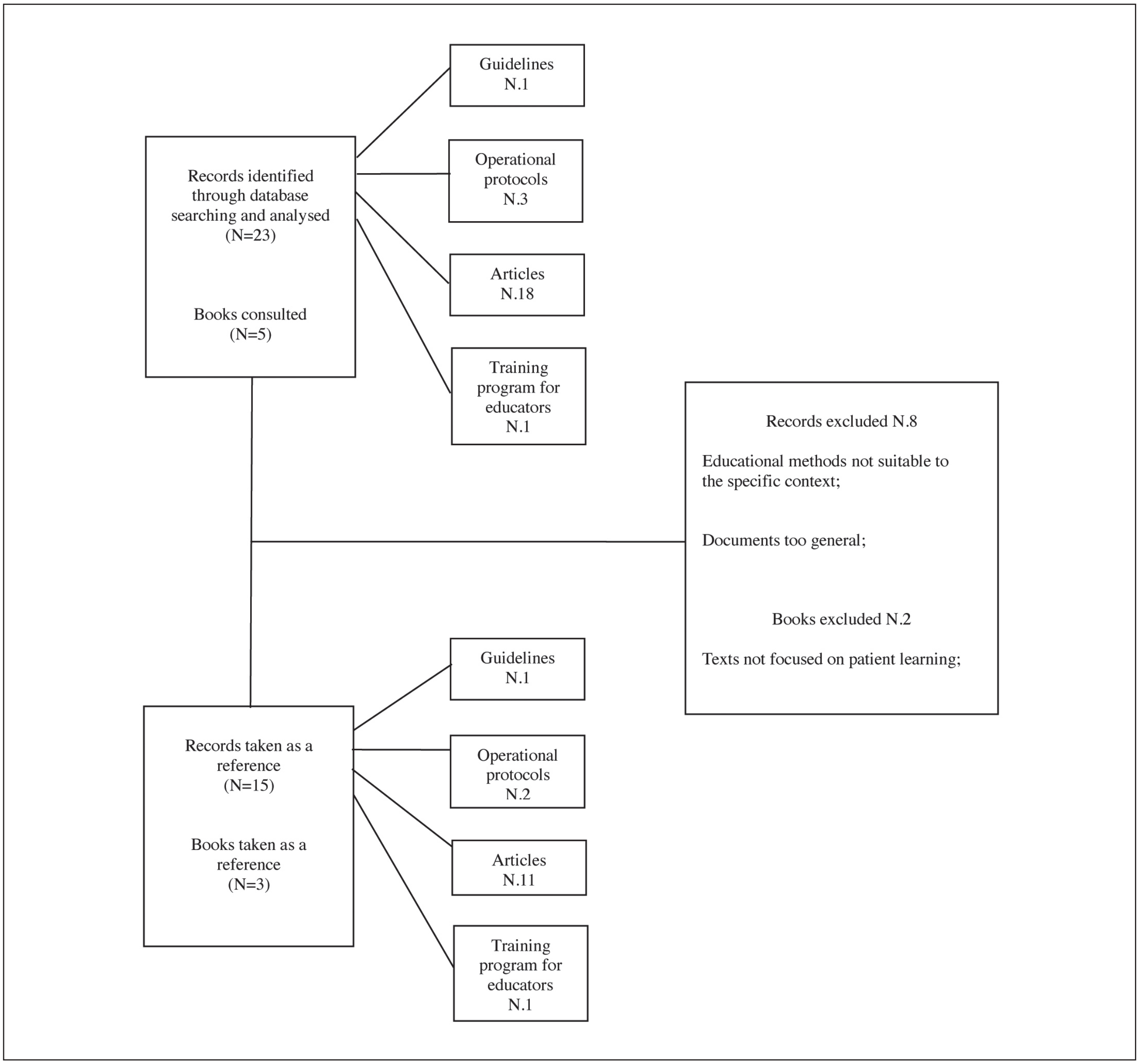

Figure 2. Therapeutic education and Self-Care literature review flow diagram

proposed to them. We used as a reference one of the two forms that we had found during our bibliographical research, because it conformed with our needs and our context (13).

The top of the form provides space for the user's personal data (that of the patient or the caregiver). Next comes the identification of the subjects dealt with by the nurses. For each of these, the date of the training session is to be submitted, along with the name of the operator responsible for it, data regarding the extent of the patient's learning and comprehension, and if the set goal has been achieved or not.

Given the importance of customizing the training plan and the need to give the patient and/or caregiver time to assimilate the information provided and the procedures explained, several observations could be recorded on the same subject. Space is not included for observations related to speech therapists and dietitians, as these are to be recorded in a counseling report.

• **ATTACHMENT II –** Booklet entitled, ***"Useful information for a person undergoing a total laryngectomy".***

This document is to be given to the patient or caregiver at the start of his/her education. It reinforces the training and acts as a useful reference upon the patient's return home. It supplies general and procedural information, but also helps the patient and family members become familiar with care and assistance upon discharge. Subjects dealt with during this educational phase is summarized in a booklet designed for consultation when in need. The subjects are as follows:

1. Anatomy and physiology of the upper aero and digestive tract.
2. Total laryngectomy
3. Tracheal tube and accessories
4. The humidification, filtration, and heating of the respiratory mucous membrane
5. The rules of hygiene and the awareness of other factors
6. The suction of the endotracheal secretions
7. The substitution and cleaning of the inner tracheal tube (if present)
8. Substitution of the tracheostomy tube
9. Care of the tracheal stoma
10. Recovering the ability to speak
11. Cleaning of the vocal prosthesis (if present)
12. Alimentation
13. Treatments after discharge from the hospital
14. Physiotherapy
15. Protected discharge
16. How to reach us by phone

Once the documentation produced and approved by both the Chair of the Operational Unit and by the Director of the Health Professions Operational Unit, we proceeded to make it official on the hospital website and moved on to the implementation of the educational program that we had created.

These last stages also concluded the related training project. The documents produced and the final results were sent to the Simple Departmental Structure for Training and Communication. This led to Continuing Medical Education accreditation, along with recognition given to all the participants.

Conclusion

This project combined training, research, and organization with assistance for the patient. It provides food for thought as a starting point for improving normal procedures. By procedures we mean both the handling of tracheotomies-tracheostomies and the implementation of therapeutic education for the patient/caregiver.

This subject demands the confirmation that one can and should change one's own behavior. "Workplace-based Learning" can provide this. Through this methodology the nurses of the "Improvement group" have increase their knowledge of subjects of daily interest, aligning their skills. Moreover it gave them the opportunity to take part in a training exercise that was organized "ad hoc" with the additional intention of minimizing personal discomfort, while still guaranteeing preset objectives within set times.

Only too often nurses who wished to participate in training courses related to their specialty, found it difficult to attend these courses – due to family reasons and personal inhibitions deriving from the need to respect the rules inherent in work schedules.

Even the other specialists showed themselves to be favorable and available to undertake this route of improvement. Their involvement also encouraged the integration of the multidisciplinary and multi-professional team, creating yet more added value and giving birth to valuable collaborations.

Surely this project has shown one of the many contributions that the nurse can make during the patient's pathway. The nurse's work thereby becomes more visible. This is a starting point which should lead to active participation in Disease Management Team activities, also through the establishment of a Case/Care Manager.

Discussion

This project stimulated reflection on some themes and proposals such as:

- Adding at least one indicator of the nursing process to the budget
- Organizing training courses for all those who carry out therapeutic educational activities in

their own work contexts to help them acquire adequate skills
- Organizing Continuing Medical Education accredited seminars for external health operators, with the goal of optimizing the handling of this type of patient in a home environment, and also encouraging integration with the hospital
- Instituting an outpatient nursing clinic dedicated to continuing therapeutic education after the patient's discharge from the hospital, monitoring his/her learning until the patient/caregiver is completely autonomous
- Formally setting up a group of nurses who can provide their colleagues in other operational units with advice regarding tracheostomy patients, upon request
- A better research for the appropriate instruments to evaluate patient self-care

In a health context which deals, to an ever increasing degree, with chronic illness, it is essential to be able to face patients' various needs for assistance. It becomes ever more important to be able to recognize and evaluate the contribution of each single professional, the skills that they have, and their personal ability to develop and apply them.

To do so, action must be taken through training, organization able to support the various processes, and professionals to motivate them and bring out their value, are all necessary. Conditions must also be created to help them to work to their best, guaranteeing positive results for the users (4, 14, 15).

For some time now, researchers have been occupied with outcomes, evaluating the effect of nursing activities on patients. Successes have been identified that relate directly to this. They focus on all the tools which allow them to be measured and monitored, and on all the factors which influence their creation (8, 14, 15).

In addition, scientific literature shows that quality assistance is reached in settings in which there is a high degree of satisfaction both on the part of the patient, as on the part of the doctors and nurses (14, 15).

Nurses have a greater impact when they are given charge of the patient. They need to feel they have more autonomy and control over practices; that they can influence decisions, participate in the logic behind them and the handling of priorities, even while fully participating in organizational choices. Coordinators and managers at various levels need to take action to make this occur. And the training project we have initiated intends to work precisely on all these aspects.

We set the promotion of Self-Care as our overall goal, as the main palpable outcome of nursing a patient afflicted by a chronic illness. We managed to act on both the quality of assistance given to the patients with medium-term tracheotomy or laryngectomy and on the skills of the nurses involved, along with their motivation and multidisciplinary and multi-professional integration on the Disease Management Team.

"Workplace-based Learning" methodology has surely shown itself as added value. It has indirectly allowed for the achievement of organizational-related goals in addition to ones regarding training. And so, to continue to improve quality, it is not just a point of arrival, but also a point of departure towards a further implementation of the culture of taking charge of a patient. We feel that the real difficulty was not in the making of this project, in spite of its complexity, but will be in the guaranteeing of the constant application of the operational protocol which we have created. Many different critical points are present in the organizational context. They must be taken into consideration in order to produce real change. This study should not remain a work unto itself.

Furthermore, though training shows its efficiency by enabling learning, seen as a process which leads to a change in the learner's way of thinking, feeling, and acting (16), we feel that it is important to identify an appropriate mode for evaluating the skills that have been acquired by health operators at the end of this path. The impact of the quality of assistance given also strongly impacts outcome.

Limits

- The modes used to evaluate how the patient or caregiver learns to deal with a new psycho-physical condition after surgery could be improved by using more appropriate tools.
- The large size of the work group created the need for a great deal of time and coordination.

- Five of the nurses (20%) for personal reasons were not able to finish the training process.
- The bibliographic searches carried out were not systematic reviews of the literature.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Ministero della Salute. Direzione Generale della programmazione sanitaria. Piano Nazionale della Cronicità. Accordo tra lo Stato, le Regioni e le Province Autonome di Trento e di Bolzano del 15 settembre 2016 [National Plan for Chronic Illnesses. Agreement between the State, the Regions, and the Autonomous Province of Trento and Bolzano, dated September 15, 2016].
2. Cavaliere B., Manzoni E., Piu F.. Innovazione e Governance delle Professioni Sanitarie. Scenari di sviluppo per una sanità a misura d'uomo. [Innovation and Governance of Health Professions. Development scenarios for human health]. Casa Editrice Ambrosiana, 2015.
3. Servizio Sanitario Regionale Emilia-Romagna, Azienda Ospedaliera di Reggio Emilia. Arcispedale S. Maria Nuova, Direzione Professioni Sanitarie – D.P.S., Dott.ssa Marina Iemmi Direttore. Il modello per intensità di cura e complessità assistenziale: il punto di vista della DPS [The model for intensity and complexity of care: the point of view of the Directorate of Health Profession]. Emissione 21 Maggio 2012.
4. A cura di Orlandi C., Calamandrei C.. Manuale di management per le professioni sanitarie [Health Professionals Management Manual], McGraw-Hill Education, 2015.
5. Chiari P., Santullo A.. L'infermiere case manager dalla teoria alla prassi. [The Nurse as the Case Manager: from theory to practices] Mc Graw Hill, Milano, 2011.
6. Beers E., Lee Nilsen M., Johnson J.T.. The Role of Patients: Shared Decision-Making. Otolaryngol Clin North Am. 2017 Aug;50(4):689-708.
7. World Health Organization Regional Office for Europe Copenhagen. Terapeutic Patient Education – Continuing Education Programmes for Health Care Providers in the Field of Prevention of Chronic Disease. Report of a Who Working Group, 1998. EUR/ICP/QCPH 01 01 03 Rev. 2 Original: English.
8. Doran D. M.. Nursing outcomes – gli esiti sensibili alle cure infermieristiche [Nursing outcomes]. Mc GrawHill Education, 2013.
9. Riegel B., Jaarsma T., Strömberg A.. A middle-range theory of self-care of chronic illness. ANS Adv Nurs Sci . 2012 Jul-Sep; 35 (3):194-204.
10. Marzano A., Parisi G.. Organizzare la formazione sul campo. Metodi, modelli ed esperienze [Organizing Training in the Field: Methods, models, and experiences]. Tutor. Vol.17, N..3, 2017:21-28.
11. AGENAS. FSC e criteri per l'assegnazione dei crediti ECM alle attività di FSC [Workplace-based learning and the criteria for the assignment of CME credit to workplace-based learning activities]. In: http://ape.agenas.it/documenti/3.Formazione_sul_campo.pdf.
12. Bagnasco A., Calza S., Petralia P., Aleo G., Fornoni L., Sasso L.. Investigating the use of Barrows Cards to improve self-management and reduce healthcare costs in adolescents with blood cancer: a pilot study. J Adv Nurs. 2016 Apr;72(4):754-8.
13. Direzione Generale S.I.T.R.A, Regione Lombardia, Asl Brescia. L'assistenza e l'intervento educativo alla persona portatrice di cannula tracheale [Assistance and training for the patient with a tracheal tube] Dicembre 2011, Rev.00.
14. Aiken L.H., Clarke S.P., Sloane D.M., Lake E.T., Cheney T.. Effects of hospital care environment on patient mortality and nurse outcomes. J Nurs Adm. 2008 May;38(5):223-9.
15. Aiken L.H., Sermeus W., Van den Heede K., Sloane D. M., Busse R., McKee M., Bruyneel L., Rafferty A.M., Griffiths P., Moreno-Casbas M.T. Tishelman C., Scott A., Brzostek T., Kinnunen J., Schwendimann R., Heinen M., Zikos D., Sjetne I.S., Smith H.L., Kutney-Lee A.. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. BMJ 2012;344:e1717.
16. Gilbert J.J.. Guida Pedagogica per il personale sanitario. [Teaching Guide for health personnel]. Edizioni Dal Sud, 2002.
17. Woisard V., Galtier A., Baumann L., Delpierre C., Puech M., Balaguer M.. L'éducation thérapeutique du patient laryngectomisé total: influence des facteurs sociaux. [Therapeutic education of total laryngectomy patients: Influence of social factors]. Rev. Laryngol. Otol. Rhinol. (Bord). 2015;136(5):171-179.
18. Wong K., Gilad A., Cohen M.B., Kirke D.N., Jalisi S.M.. Patient education materials assessment tool for laryngectomy health information. Head Neck. 2017 Nov;39(11):2256-2263.
19. Pérol D., Toutenu P., Lefranc A., Régnier V., Chvetzoff G., Saltel P., Chauvin F.. L'éducation thérapeutique en cacérologie: vers une reconnaissance des compétences du patient. [Therapeutic education in oncology: involving patient in the management of cancer]. Bull Cancer 2007;94(3):267-74.
20. Buiret G., Chidiac F., Pujo K., Combe C.. Comment concilier éducation thérapeutique des patients et parcours de soin en cancérologie: application pour le voies aérodigestives supérieures. [How to reconcile therapeutic patient education and care pathology in oncology: Application in head and neck neoplasm]. Bull Cancer 2019;106:468-478.
21. McDonough K., Crimlisk J., Nicholas P., Cabral H., Quinn EK., Jalisi S. Standardizing nurse training strategies to improve knowledge and self-efficacy with tracheostomy and laryngectomy care. Appl Nurs Res. 2016 Nov;32:212-216;.

22. Singer S., Danker H., Guntinas-Lichius O., Oeken J., Pabst F., Schock J., Vogel H.J., Meister E.F., Wulke C., Dietz A.. Quality of life before and after total laryngectomy: Results of a multicenter prospective cohort study. Head Neck. 2014 Mar;36(3):359-68.
23. Pereira da Silva A., Feliciano T., Vaz Freitas S., Esteves S., Almeida E Sousa C., Quality of life in patients submitted to total laryngectomy. J Voice. 2015 May;29(3):382-8.
24. McDonald J., McKinlay E., Keeling S., Levack W.. Becoming an expert carer: the process of family carers learning to manage technical health procedures at home. J Adv Nurs. 2016 Sep;72(9):2173-84.
25. Cnossen I.C. van Uden-Kraan C.F., Eerenstein S.E.J., Rinkel R.N.P.M., Aalders I.J., van den Berg K., de Goede C.J., van Stijgeren A.J., Cruijff-Bijl Y., de Bree R., Leemans C.R., Verdonck-de Leeuw I.M.. A Partecipatory Design Approach to Develop a Web-Based Self-Care Program Supporting Early Rehabilitation among Patients after Total Laryngectomy. Folia Phoniatr Logop. 2015;67(4):193-201.
26. Beghelli A., Ferraresi A., Manfredini M.. Educazione terapeutica. Metodologia e applicazioni. [Therapeutic Education..Methodology and applications]. Carocci Edizioni, 2015.
27. Bobo N., Fondamenti pedagogici di educazione al paziente. [Pedagogical foundations of education to the patient]. CLEUP editore, 2012.
28. Kolb D.A.. Experiential learning. Englewood Cliffs, N.J.: Prentice Hall, 1984.
29. Copanitsanou P., Fotos N., Brokalaki H.. Effects of work environment on patient and nurse outcomes. Br J Nurs. 2017 Feb 9;26(3):172-176.
30. Choi J., Boyle D.K.. Differences in nursing practice environment among US acute care unit types: a descriptive study. Inf J Nurs Stud. 2014 Nov;51(11):1441-9.

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A Therapeutic Education Program for patients that underwent at temporary tracheotomy and total laryngectomy: leading to improved the "Diagnostic, Therapeutic and Assistance Path"

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Abstract. *Background and aim of the study:* Therapeutic education helps patients with a chronic disease to acquire and maintain the ability to live their life while handling their illness. Patients with temporary medium-term tracheotomy or permanent tracheostomy need to acquire skills to be able to handle the stoma, tracheal tube, related issues, and other apparatuses. This was the purpose of our therapeutic education program, which was aimed to take patients and caregiver to an efficient level of self-care. *Methods:* In 2018, was created a CME-accredited (Continuing Medical Education) "Workplace-based Learning Project" involving all the nurses in the Otolaryngology Head and Neck Operational Unit, along different specialists on the Disease Management Team, thereby forming an "Improvement Group". We established parallel workgroups for bibliography research on data-based like PubMed, Cinahl, Cochrane, Google scholar, in order to obtain the information to write up a shared document. *Results:* We wrote out an Operational Protocol which lined up nursing skills – when handling patients with medium-term tracheotomy or tracheostomy – with scientific evidence. Our standard educational plan (customizable, based on each patient's characteristics) promote the patient's learning with respect to self-care. *Conclusions:* This project has set the basis for the improvement of the quality of assistance given to the patients and therapeutic education provided them. It has encouraged the development of the skills of the nurses involved, along with their motivation, and their integration on the Disease Management Team. But, it will be necessary in the future to further evaluate the effectiveness of the program in terms of self-care. (www.actabiomedica.it)

Key words: Therapeutic Education Program, self-care, nursing skills, workplace-based learning, tracheotomy, tracheostomy and laryngectomy

Introduction

At this moment in time, health services are experiencing increasing demands for assistance. This reflects the fact that people are living longer, often to advanced old age, accompanied by chronic health problems (1, 2). This evolution led to reflection on the various aspects of nursing and care-taking entities with respect to the professional skills which enable them to respond in an appropriate manner to the needs of their citizens (2).

Due to the above, attention now shifts from the hospital, which handles acute cases, to locations which deal with chronic stages. The medium and long-term problems found here create the need for an integrated care pathway which connects them (2). In the intensive care hospitals the acute phases are treated. They are a resource to be used only when strictly necessary. This is where the patient, with his/her specific health problem, is taken into charge to face his/her specific pathology by an integrated multidisciplinary team.

With this model, a different response mode comes to the fore. Appropriate technologies and skills provided by the appropriate quantity and quality of personnel are assigned in differing degrees to clinical instability and its accompanying complexity in terms of assistance. This combination gives the patient the most appropriate and timely of responses (2-4).

In this setting, a Diagnostic-Therapeutic-Assistance Path standardizes processes using scientific evidence. It is designed to ensure professional integration and coordination, guaranteeing adequate and equal clinical outcomes, even though it does not depend wholly on professionals. Each professional, with his/her own specific competences, contributes to achieving the patient's goals, which have been identified in a shared manner (1-5).

Thus, it becomes essential to involve the patient in the decisions that concern him/her (1, 2, 5, 6). Carrying this concept further, investment must be made in the patient's therapeutic education. This then becomes part of the process which helps sick people acquire and maintain their ability to best conduct their own lives while living with the illness itself. This, in turn, enhances the effect of other therapeutic effects derived from other sources (5, 7).

The patient's family is also encouraged to participate. The context of the patient's lifestyle and experiences is also considered. And content is designed to stimulate learning how to promote empowerment and efficient self-care especially when dealing with chronic illness(5). This outcome is central to nursing assistance, and it encompasses the other goals (8).

In this manner, therapeutic education becomes a fundamental process in a structured health context. The multidisciplinary team, on a clinical assistance path with case/care management, places the patient (and his/her specific condition) at the center, while the related outcomes to pursue are studied (5). This involves the entire professional team. They interact in a focused way to guarantee coordinated and timely assistance, thereby increasing patient satisfaction and the effectiveness of the services (5).

Middle-Range Theory for Self-Care in Chronic Pathologies analyzes the characteristics and the factors necessary to make it efficient. The goal is to enable the patient to:(9)

- Better understand his/her illness, treatments, and complications
- Handle his/her new condition in a competent way, having been given info and knowhow
- Avoid complications by reforming existing behavior modes

Scientific literature has shown that training that employs active involvement, can produce better results in terms of learning and provide positive practical effects. For this to occur, three essential elements are involved: concrete problems to resolve, interactivity, and direct involvement in favorably organized contexts (10). In optimal situations, one's own work context provides both training needs and satisfaction (10).

To support this, in 2003, the CME (Continuing Medical Education) National Commission introduced what was called "Workplace-based Learning". This was a new mode that totally integrated the work environment and clinical-assistance procedures. As a result, the added value was actually determined by a motivational push which led professional into carrying out individual or group investigations/research, finding solutions for concrete problems (10).

"Workplace-based Learning" emerged from an intentional and well-organized search for solutions to real problems. And since its origins lie in real problems, monitored over time, it is clear that the evaluation of organizational change is as decisive as the learning process. And therefore, project methodology must be rigorous enough to guarantee the quality of the results while maintaining the right flexibility for the context (10).

One way to carry out this type of training uses "The Improvement Group". This was created to show the concept of change and multidisciplinary training in one's own work environment (10).

"Improvement groups use multi-professional and multidisciplinary activities in the workplace to promote health; the continual improvement of clinical assistance, management, or organizational processes; and the consequent accreditation or certification of the health structure involved. Here the learning process occurs through the integration of a group of equals." (10, 11)

Improvement groups give operators responsibility for their own training (self directed learning), thereby encouraging colleagues to reflect upon their own work. Exchanges and reciprocal learning are promoted by sharing. Though always retaining methodological rigor, this mode encourages the possibility of incurring changes in the overlying organization. It enables it to meet the needs of the professionals involved, thereby encouraging their participation (10).

The process used to design, implement, and carry out an improvement group is divided up into the following phases (10):

1. Once a problem is identified along with the corresponding aspects that need to be faced, the head of the project writes out a program which identifies goals, participants, work phases and their duration, and a way to evaluate the project's success. Then he proposes it to the training service.
2. This document is then evaluated by a special multidisciplinary and multi-professional committee consisting of health professionals who then guarantee its appropriateness.
3. Once modified or approved by the committee, the project may start.

The head of the project must guide the work done by the participants, assign responsibility, and work on making the project transferrable, watching out for the effects. In addition the head formulates the final report, giving extra credit to those whose efforts stood out.

Training of this type – fine-tuned starting from 2005 by the Training Service of the Azienda Sanitaria Provinciale in the Province of Trento – was then initiated in 2017 at the San Martino Polyclinic Hospital in Genoa. Its usefulness was revealed as a way to focus on skills, performance, and health successes regarding the patient (10).

Method

In agreement with the considerations described above, our project was designed for Otolaryngology Head and Neck Unit of the San Martino Polyclinic Hospital (Genoa, Italy). It used workplace-based learning carried out by an improvement group, and it was conduced by the nursing referenced to the Diagnostic-Therapeutic-Assistance-Path for the oncologic head neck disease, who worked with the other members of the multidisciplinary team.

Patients who undergo open surgery, which creates medium-term temporary tracheotomies or permanent tracheostomies, need to be provided with specific skills which allow them to handle – on their own – the stoma, the tracheal tube, and all that which is affected by this and other devices, to guarantee air passage in their airways and prevent the onset of complications.

A customized therapeutic education program was set up to take patients and their related caregivers to the point of efficient self-care. Up till now, there had been no clear operational methodology which defined the contents, instruments, methods, times, places, actions, and roles involved, and so, this lack of standardization also made it difficult to track and records the outcomes. Confirming this, both the day clinic nurses who participated in check-ups and follow-ups after the patient was released, and the speech therapists who then worked with this type of patient, noted the patients lacked ability for self-care and needed for further explanations.

The most critical phase has been identified as that immediately after discharge. This is the point where patients leave a protected environment – inside of which they are safe and receive answers to all their needs – to reenter a context in which they must measure themselves against their own ability for self-care and management. And yet, these abilities are consolidated only by continual practice and the gradual acquisition of experience.

As a result, the therapeutic education carried out in the recovery phase, needs to be as complete and efficient as possible. It must focus in particular on the prevention of more serious complications (i.e. airway obstruction, infections, and hemorrhages).

By planning early and providing follow-up meetings with discharged patients, we have found that this can help them and their caregivers to acquire additional skills and greater confidence. This is turn allows the health professionals to monitor their learning process and intervene in an appropriate manner where necessary.

Patients need to be able to take care of their daily needs, carrying out the main procedures in a safe and efficient way. Additional educational can then be given on an outpatient basis, an its evolution can be monitored over time. The educational program that we designed serves to reach this goal.

But there is a difference in the training to be given to a patient who underwent temporary tracheotomy versus a patient with a tracheostomy, after a total laryngectomy. This is due to the fact that while a tracheotomy is temporary, the latter modifies permanently the upper respiratory airways. Thus, in the first case, autonomous management is more limited. Professional experts intervene in the execution of some risky maneuvers, done in the hospital. The opposite holds true with regards to total laryngectomy. In this case, the patient learns to handle and live with it, turning him/her into the main subject of the therapeutic education program of self-care.

Our goal was intended to draw up an educational project using this scenario, an intermediate phase with respect to the whole process. And only after having done so, we would create a data bank which verified the efficiency of the training program provided.

The project was divided into five phases. The **first phase** directly involved the coordinator of the Otolaryngology Head and Neck Unit of the San Martino Polyclinic Hospital in Genoa Italy and her promoter. It provided a detailed educational plan which was shared with the Chair of the Operational Unit and with the Director of the Health Professions Operational Unit.

The project was presented in December 2017 to the Scientific Committee through the Simple Departmental Structure for Training and Communication to enable a training program that would be accredited by Continuing Medical Education, carried out in accordance with its "Workplace-based Learning" methodology. Approval was obtained in February 2018.

In March, the head (and coordinator) of the project, along with a representative of the nursing group, attended a course designed to supply methodological support for the development and implementation of this type of program. This involved teaching experts and support from a distance. Once the training was completed, the project was begun.

A work team was set up as an "Improvement Group". It consisted of 25 nurses, and 13 DMT (Disease Management Team) specialists for oncologic pathologies in the cervico-facial district (two otolaryngologists, a radiotherapist, an oncologist, two psychologists, a physiatrist, a physiotherapist, two speech therapists, two dieticians, and a health assistant), actively working as experts. It was also involved a nurse infection control.

Though well aware that the number of participants was rather high, it was decided to involve the whole nursing group, the principal students from the training course subjected to the proposed project, in order to permit the latter to become a source of motivation, producing consolidation/development of skills through the training.

In this specific context it is, in particular, the nurse who works the most to activate the educational program with the patient and/or caregiver.

Seeking our goal in self-care terms, we felt that it was necessary to work on the updating of nursing skills with regards to recent scientific research when dealing with patients with tracheotomies or tracheostomies. We also felt it necessary to plan and extend the program of therapeutic education by specifying its subject, methodology, and tools. A major role was also played by dieticians and speech-therapists, working more independently. The time required for each of these, including nursing, was 25 hours in total.

The **second phase** was begun in April 2018. It established three secondary groups of nurses, working in parallel, who researched:

1. Scientific evidence regarding the handling and the necessary devices for tracheotomy-tracheostomy.
2. Therapeutic education concepts and related methods, along with the identification of tools for recording educational actions that have been carried out and an evaluation of their effectiveness in teaching the patient/caregiver, the concept of self-care, and the quality of life for patients who have undergone tracheostomy.
3. Brochures and booklets providing information for laryngectomized patients, in order to write a specific booklet to be given to the user and/or caregiver at the same of the learning period.

These groups worked independently, though under the guidance and supervision of the head and coordinator of the project. Some work was done at home, and then discussed with the group.

Databases like PubMed, Cinahl, Cochrane, Google scholar, were consulted. The key words we selected were: "tracheotomy", "tracheostomy", "tracheostomy management", "laryngectomy", "tracheostomy tube", "tracheostomy guidelines", "laryngectomy management", "tracheostomy care", "laryngectomy tube", "pneumonia infection", "suction", "suction management", "self-care", and "patient education".

As for point 1 inclusion criteria have been: documents both in English and Italian, covered the years from 2008 to 2018, and all dealt with adult patients. 10 guidelines were analyzed, along with 2 operational protocols, 1 policy, 1 procedure, 7 articles, and 3 manuals. We did not include publications which did not provide detailed procedures for the handling of tracheotomy-tracheostomy or those which did not seem pertinent (Table 1, Figure 1).

As for point 2 inclusion criteria have been: publications, both in English and in Italian, dating from 1998 to 2018, that discuss therapeutic education, self-care in general, and tracheostomized patients and their relative quality of life.

We consulted 5 books, 1 guideline, 3 operational protocols, 18 articles, and 1 training program for educators. We excluded documents which describe educational methodologies that were not very applicable in our specific context of reference. We did not use those that were too generalized, and texts that did not focus directly on patient learnings (Table 2, Figure 2).

As for point 3 just a few booklets were consulted, without doing an in-depth search, because we had decided to write our own. Our booklet would discuss basic subjects and supply useful information that our patients, having undergone a total laryngectomy, would need.

The product of the work groups' research was shared on many occasions. On the basis of the data that emerged, we made decisions regarding the next phases to be taken, until a final document was approved by all.

The **third phase** began in May 2018. It expanded up an operational protocol which included both skilled procedures for the nurses handling a tracheotomy-tracheostomy and the therapeutic education program for the patient or his/her caregiver in the recovery phase. A booklet for the laryngectomized patients was also written to be provided them at the start of the training program. These tools were the specific goal of the training project, and will be described in detail when we speak of results.

The experts involved in this phase were various specialists from the Disease Management Team. They were chosen on the base of their subject and specific competences, and greatly helped us write out the information material given to the patient. Each specialist contributed with his/her specialty. The final documents were then shared among the operators.

The **fourth phase** was begun in September 2018. In this phase, both the Chair of the Otolaryngology Head and Neck Unit and the Director of the Health Professions Unit checked and approved the operational protocol and the information booklet. Publication on the official website was requested after an evaluation carried out by the Clinical Risk Management Unit, Quality Accreditation, and Public Relations Office.

The **fifth phase**, started in January 2019, is still ongoing, and involved the application of the operational protocol created.

Results

The guidelines and the operational protocols that we chose were considered to be specifically instituted for tracheotomy-tracheostomy, and provided detailed information for the various procedures. These documents were carefully evaluated and from those were extracted our operational protocol described below.

With regards to the theme of therapeutic education and self-care, we selected documents which provided definitions, methods, tools, and variables which could affect results. We also considered articles related to the quality of life of patients with tracheostomy. Our research found only two instruments to register the occurrence of educational interventions, and none related to the traceability of the self-care level evaluation.

Four instruments were found to evaluate the skills of health service operators for the various procedures

Table 1. Records selected related to Tracheostomy management

N.	Authors	Title	Record	Source and Date
1	ACI – NSW Agency for Clinical Innovation – ICCMU – Intensive Care Coordination & Monitoring Unit. Guideline Owner: NSW Agency for Clinical Innovation Primary authors: Chaseling W. Guideline Management Team Chaseling W., Bayliss S.L., Rose K., Prof. Davidson P., Armstrong L., Boyle M., Chung C., Caldwell J., Griffiths K., Johnson K., Lowe S.P., Reddy N., Thackray N., Zimbiti C.	Suctioning an Adult ICU Patient with an Artificial Airway: A Clinical Practice Guideline	Guideline	2014 https://www.aci.health..nsw.gov.au/_data/assets//pdf_file/0010/239554/ACI14_Suction_2-2.pdf
2	General Direction S.I.T.R.A, Regione Lombardia, ASL Brescia. Manager: Dr. Di Meo S. SITRA ASL Brescia. Working groups coordinator: Crescini L. - SITRA - ASL Brescia Working group: Agazzi C., Baruffaldi S., Bertozzi E., Bianchetti S., Di Benedetto F., Fappani M., Fiorini J., Luvriti C., Franzini M. A., Guarneri S., Menchi V., Pollini S., Roberti O., Shaban Y., Venturi A., Festa G., Foglia V., Gaia M., Leali R., Raccagni M., Romagnoli P., Sbaraini C., Beruffi M. S.	L’assistenza e l’intervento educativo alla persona portatrice di cannula tracheale [Assistance and training for the patient with a tracheal tube]	Operational protocol	December 2011 https://docplayer.it/10074015-L-assistenza-e-l-intervento-educativo-alla-persona-portatrice-di-cannula-tracheale.html
3	NHS – Southern Health – NHS Foundation Trust – SH CP 214 Author: Guy S.	Tracheostomy Care Guidelines	Guideline	October 2017 https://www.southernhealth.nhs.uk/resources/assets/attachment/full/0/153927.pdf
4	West Suffolk – NHS Foundation Trust Document owner: Lewis S., Ingalla G.	Tracheostomy/ Laryngectomy: Managing the Patient	Trust Policy and Procedure Document Reference: PP(17) 315 Guideline	August 2017 https://www.wsh.nhs.uk/CMS-Documents/Trust-policies/301-350/PP(16)315TracheostomyLaryngectomyManagingthePatient.pdf
5	NSW – Health - Nepean Blue Mountains Local Health District Author: Carpen H.	Care of Adult Patients with a Tracheostomy Tube	Procedure	January 2015 http://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0008/292580/Tracheostomy-care-nbm.pdf
6	NHS – QE Gateshead – Quality and excellence in health Authors/Reviewer Wood M. & Marr H.	Management of adult patients with a tracheostomy or laryngectomy	Policy No OP80	February 2017 https://www.qegateshead.nhs.uk/sites/default/files/users/user10/OP80%20Management%20of%20Adult%20Patients%20with%20a%20Tracheostomy%20or%20Laryngectomy%20v2.pdf

(continued)

Table 1 *(continued)***.** Records selected related to Tracheostomy management

7	Regione Lombardia –ASST Pavia Working group: Bassi S., Corsi P., Di Martino B., Galloni D., Lazzati R., Mirabile P., Noto C., Zampieri G. Collaborators Castigliola L., Filippone M., Lanza L., Martinotti R., Targa M.	Gestione cannule tracheali e l'educazione al paziente [Tracheal tube management and the patient education]	Operational protocol	January 2016 https://docplayer.it/44173796-L-educazione-al-paziente.html
8	St .James's Hospital Nursing, Owner: Ms Norton J. Tracheostomy Care Working Group Reviewed by: Prof. Timon C., Mr Kinsella J., Prof. Stassen L., Dr. Fagan C., Dr. Moriarty J., Ms. Roche M., Ms. Brady A. Approved by: Mr Gallagher P.	Tracheostomy Care Guidelines	Guidelines	December 2013 http://www.stjames.ie/GPsHealthcareProfessionals/ConferencesCourses/TracheostomyTalks/Tracheostomy%20Guidelines%20(2013).pdf
9	St George's Healthcare NHS Trust Brunker C., Dawson D., Dr Kourteli E., Maistry N., More M., Wilkinson O., Kelly G.	Guideline for the Care of Patients with Tracheostomy Tubes	Guideline	2012 Edition http://replantmed.hu/tudaskozpont-replantmed/category/6-intenziv-terapia-es-aneszteziaʔdownload=24:guidleine-tracehosztomias-betegeknek
10	Tracheostomy Care – Intensive care Society Standards Prepared on behalf of the Council of the Intensive Care Society by: Bodenham A. (Chair), Bell D., Bonner S., Branch F., Dawson D., Morgan P., McGrath B., Mackenzie S.	Standards for the care of adult patients with a temporary Tracheostomy; STANDARDS AND GUIDELINES	Guideline	2014 https://www.theawsomecourse.co.uk/ICS/ICS%20Tracheostomy%20standards%20(2014). pdf

to assist patients with tracheostomies. One evaluated the patient upon his/her arrival in the hospital with a check list for the procedures and evaluations to be carried out. Five forms recorded the evaluation of the patient's condition and/or the presence of apparatus. And one was a check list of the material and equipment that were available to the patient upon release from the hospital. But we did not analyzed them as they were not on topic with regards to our project.

An operational protocol was created called "***Assistance and Therapeutic Education for the Laryngectomized or Tracheotomized Patient Belonging to the Diagnostic-Therapeutic-Assistance Path for the Oncologic Head Neck Disease.***". Its goal was to line up nursing skills with recent scientific evidence – while also standardizing behavior inside the group – and to set up a standard educational plan customized for each patient/caregiver to promote his/her self-care.

The document was divided into two parts. It also had two attachments which were equivalent to self-standing documents:

- **PART I** - A detailed description was given for all the procedures that nurses carry out – completely on their own, or in the presence of an otolaryngologist – related to the handling of a medium-term tracheotomy or a tracheostomy, tracheal tube, along with any other apparatuses, devices, or dispositions designed to guarantee the airway patency and prevent the onset of complications. The second part of the operational protocol is based on this.

- **PART II** – After the concept of therapeutic education and self-care was introduced, a description of the methodology regarding both the patient and the caregiver was presented. Next, the subjects were

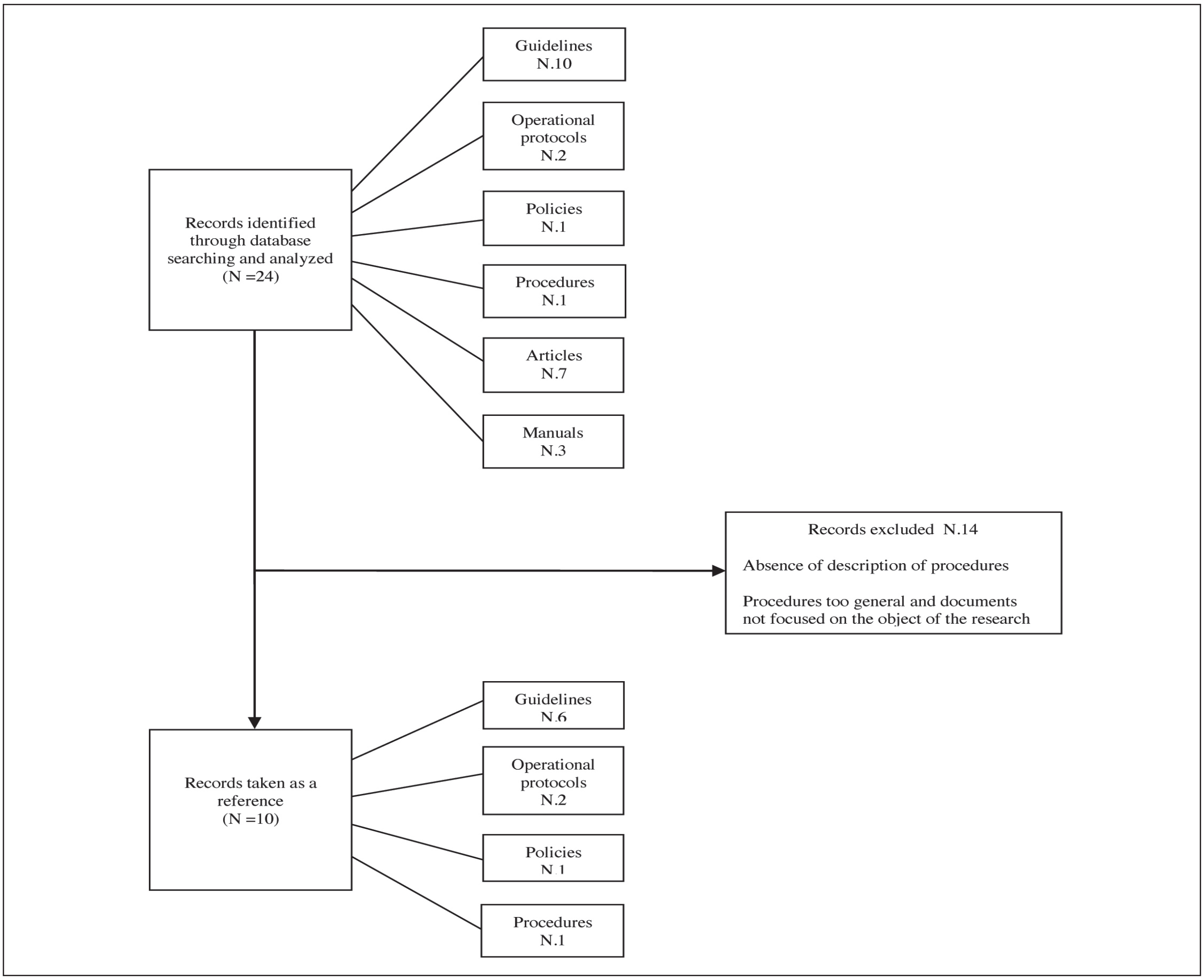

Figure 1. Tracheostomy management literature review flow diagram

described in detail: the specific goals, contents, methods, roles, instruments employed, and the modes used to evaluate the patient's understanding. A distinction was made between the patient who has undergone a total laryngectomy and the patient with a temporary tracheotomy, as some of the procedures can be done autonomously in the former case, but not in the latter.

Evaluation of the patient's learning is a rather difficult process. It is necessary to use validated and objective methods and instruments that are addressed to the patient and/or the caregiver. The former is totally or partially unable to express himself/herself in words during the days that followed the surgery. And so, we decided to verify the patient's understanding of our explanation of procedure techniques by simply observing the patient/caregiver, using the procedures summarized in this part of the protocol. But the evaluation of the patient's ability to handle this new condition – and namely the level of self-care reached – is much more complex, and therefore a more appropriate instrument should be used in the future. (12)

- **ATTACHMENT I –** ***"Form used to record tracheostomized patient education"***

We created a form which records training given to patients and/or caregivers. It is intended to highlight and record the subjects explained, along with the extent to which they are able to understand what is

Table 2. Records selected about Therapeutic Education and Self-Care

N.	Authors	Title	Record	Source and Date
1	Bagnasco A., Calza S., Petralia P., Aleo G., Fornoni L., Sasso L.	Investigating the use of Barrows Cards to improve self-management and reduce healthcare costs in adolescents with blood cancer: a pilot study	Article	J Adv Nurs. 2016 Apr; 72(4):754-8.
2	Beghelli A., Ferraresi A., Manfredini M.	Educazione terapeutica. Metodologia e applicazioni [Therapeutic Education. Methodology and applications]	Book	Carocci Faber 2015
3	Bickford J.M., Coveney J., Baker J., Hersh D.	Support following total laryngectomy: Exploring the concept from different perspectives	Article	Eur J Cancer Care (Engl) 2018 May; 27(3):e12848.
4	Bobbo N.	Fondamenti pedagogici di educazione del paziente [Pedagogical foundations of education to the patient]	Book	CLEUP Editore 2012
5	Bowers B., Scase C.	Tracheostomy: facilitating successful discharge from hospital to home	Article	Br J Nurs 2007 Apr 26-May 9;16(8):476-9
6	Prof. Brook I., Italian translation by Dr. D'Ascanio L.,Dr. Ori M.	La Guida per il Paziente Laringectomizzato [The Laryngeectomee Guide]	Book	November 2017 www.aooi.it/wp-content/uploads/2017/11/Guida-al-Paziente-Laringectomizzato.pdf
7	Cnossen I.C., van Uden-Kraan C.F., Eerenstein S.E., Rinkel R.N., Aalders I.J., van den Berg K., de Goede C.J., van Stijgeren A.J., Cruijff-Bijl Y., de Bree R., Leemans C.R., Verdonck-de Leeuw I.M.	A Partecipatory Design Approach to Develop a Web-Based Self-Care Program Supporting Early Rehabilitation among Patients after Total Laryngectomy	Article	Folia Phoniatr Logop 2015; 67(4):193-201
8	General Direction S.I.T.R.A, Regione Lombardia, ASL Brescia. Manager: Dr. Di Meo S. SITRA ASL Brescia. Working groups coordinator: Crescini L. - SITRA - ASL Brescia Working group: Agazzi C., Baruffaldi S., Bertozzi E., Bianchetti S., Di Benedetto F., Fappani M., Fiorini J., Luvriti C., Franzini M. A., Guarneri S., Menchi V., Pollini S., Roberti O., Shaban Y., Venturi A., Festa G., Foglia V., Gaia M., Leali R., Raccagni M., Romagnoli P., Sbaraini C., Beruffi M. S.	L'assistenza e l'intervento educativo alla persona portatrice di cannula tracheale [Assistance and training for the patient with a tracheal tube]	Operational Protocol	December 2011 https://docplayer.it/10074015-L-assistenza-e-l-intervento-educativo-alla-persona-portatrice-di-cannula-tracheale.html

(continued)

Table 2 ***(continued).*** Records selected about Therapeutic Education and Self-Care

9	Jaarsma T., Cameron J., Riegel B., Strömberg A.	Factors Related to Self-Care in Heart Failure Patients According to the Middle-Range Theory of Self-care of Chronic Illness: a Literature Update	Article	Curr Heart Fail Rep. 2017 Apr; 14 (2):71-77
10	McDonald J., McKinlay E., Keeling S., Levack W.	Becoming an expert carer: the process of family carers learning to manage technical health procedures at home	Article	J Adv Nurs. 2016 Sep;72(9):2173-84
11	Mehta A.B., Wiener R.S., Reardon C.C.	Living with a Tracheostomy	Article	Am J Respir Crit Care Med. 2016 Aug 1;194(3):P5-6
12	World Health Organization – Office for Europe Copenhagen Report of a WHO Working Group	Educazione terapeutica del paziente [Therapeutic education of the patient]	Training program for educators	1998- Italian translation March 2007 www.assdiabre.it/files/Raccomandazione-OMS-su-Educazione-Terapeutica-.pdf
13	Regione Lombardia – ASST Pavia Working group: Bassi S., Corsi P., Di Martino B., Galloni D., Lazzati R., Mirabile P., Noto C., Zampieri G. Collaborators Castigliola L., Filippone M., Lanza L., Martinotti R., Targa M.	Gestione Cannule Tracheali e l'educazione al paziente [Tracheal tube management and the patient education]	Operational protocol	January 2016 https://docplayer.it/44173796-L-educazione-al-paziente.html
14	Riegel B., Jaarsma T., Strömberg A.	A Middle-Range Theory Of Self-Care Of Chronic Illness	Article	ANS Adv Nurs Sci. 2012 Jul-Sep; 35(3): 194-204
15	Singer S., Danker H., Guntinas-Lichius O., Oeken J., Pabst F., Schock J., Vogel H.J., Meister E.F., Wulke C., Dietz A.	Quality of life before and after total laryngectomy: results of a multicenter prospective cohort study	Article	Head Neck. 2014 Mar;36(3):359-68
16	St George's Healthcare NHS Trust Brunker C., Dawson D., Dr Kourteli E., Maistry N., More M., Wilkinson O., Kelly G..	Guideline for the Care of Patients with Tracheostomy Tubes	Guideline	2012 Edition http://replantmed.hu/tudaskozpont-replantmed/category/6-intenziv-terapia-es-aneszteziaʔdownload=24:guidleine-tracehosztomias-betegeknek
17	Woisard V., Galtier A., Baumann L., Delpierre C., Puech M., Balaguer M.	Therapeutic education of total laryngectomy patients: Influence of social factors	Article	Rev Laryngol Otol Rhinol (Bord). 2015;136(5):171-9
18	Wong K., Gilad A., Cohen M.B., Kirke D.N., Jalisi S.M.	Patient education materials assessment tool for laryngectomy health information	Article	Head Neck. 2017 Nov;39(11):2256-2263

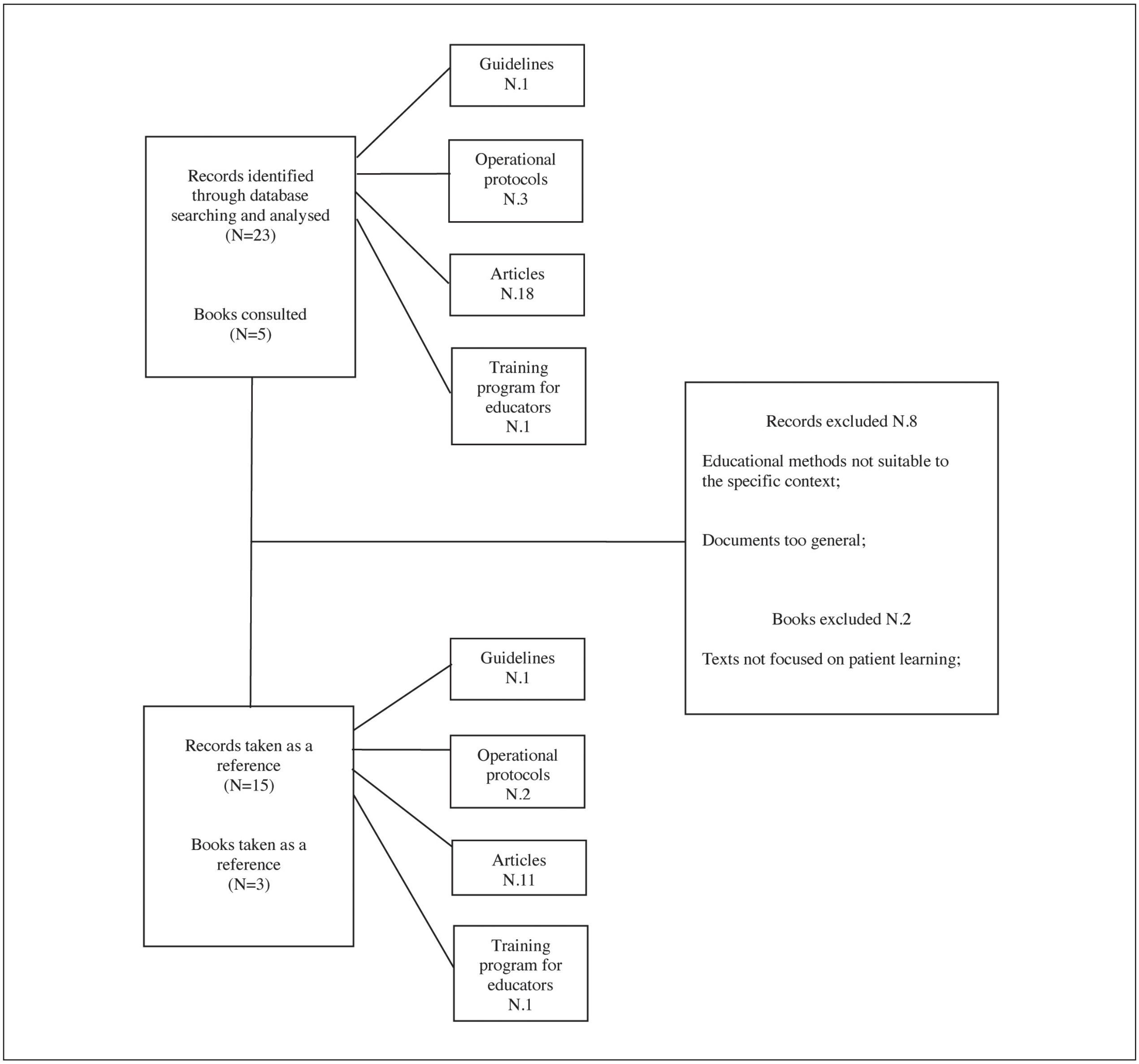

Figure 2. Therapeutic education and Self-Care literature review flow diagram

proposed to them. We used as a reference one of the two forms that we had found during our bibliographical research, because it conformed with our needs and our context (13).

The top of the form provides space for the user's personal data (that of the patient or the caregiver). Next comes the identification of the subjects dealt with by the nurses. For each of these, the date of the training session is to be submitted, along with the name of the operator responsible for it, data regarding the extent of the patient's learning and comprehension, and if the set goal has been achieved or not.

Given the importance of customizing the training plan and the need to give the patient and/or caregiver time to assimilate the information provided and the procedures explained, several observations could be recorded on the same subject. Space is not included for observations related to speech therapists and dietitians, as these are to be recorded in a counseling report.

• **ATTACHMENT II –** Booklet entitled, ***"Useful information for a person undergoing a total laryngectomy".***

This document is to be given to the patient or caregiver at the start of his/her education. It reinforces the training and acts as a useful reference upon the patient's return home. It supplies general and procedural information, but also helps the patient and family members become familiar with care and assistance upon discharge. Subjects dealt with during this educational phase is summarized in a booklet designed for consultation when in need. The subjects are as follows:

1. Anatomy and physiology of the upper aero and digestive tract.
2. Total laryngectomy
3. Tracheal tube and accessories
4. The humidification, filtration, and heating of the respiratory mucous membrane
5. The rules of hygiene and the awareness of other factors
6. The suction of the endotracheal secretions
7. The substitution and cleaning of the inner tracheal tube (if present)
8. Substitution of the tracheostomy tube
9. Care of the tracheal stoma
10. Recovering the ability to speak
11. Cleaning of the vocal prosthesis (if present)
12. Alimentation
13. Treatments after discharge from the hospital
14. Physiotherapy
15. Protected discharge
16. How to reach us by phone

Once the documentation produced and approved by both the Chair of the Operational Unit and by the Director of the Health Professions Operational Unit, we proceeded to make it official on the hospital website and moved on to the implementation of the educational program that we had created.

These last stages also concluded the related training project. The documents produced and the final results were sent to the Simple Departmental Structure for Training and Communication. This led to Continuing Medical Education accreditation, along with recognition given to all the participants.

Conclusion

This project combined training, research, and organization with assistance for the patient. It provides food for thought as a starting point for improving normal procedures. By procedures we mean both the handling of tracheotomies-tracheostomies and the implementation of therapeutic education for the patient/caregiver.

This subject demands the confirmation that one can and should change one's own behavior. "Workplace-based Learning" can provide this. Through this methodology the nurses of the "Improvement group" have increase their knowledge of subjects of daily interest, aligning their skills. Moreover it gave them the opportunity to take part in a training exercise that was organized "ad hoc" with the additional intention of minimizing personal discomfort, while still guaranteeing preset objectives within set times.

Only too often nurses who wished to participate in training courses related to their specialty, found it difficult to attend these courses – due to family reasons and personal inhibitions deriving from the need to respect the rules inherent in work schedules.

Even the other specialists showed themselves to be favorable and available to undertake this route of improvement. Their involvement also encouraged the integration of the multidisciplinary and multi-professional team, creating yet more added value and giving birth to valuable collaborations.

Surely this project has shown one of the many contributions that the nurse can make during the patient's pathway. The nurse's work thereby becomes more visible. This is a starting point which should lead to active participation in Disease Management Team activities, also through the establishment of a Case/Care Manager.

Discussion

This project stimulated reflection on some themes and proposals such as:

- Adding at least one indicator of the nursing process to the budget
- Organizing training courses for all those who carry out therapeutic educational activities in

their own work contexts to help them acquire adequate skills
- Organizing Continuing Medical Education accredited seminars for external health operators, with the goal of optimizing the handling of this type of patient in a home environment, and also encouraging integration with the hospital
- Instituting an outpatient nursing clinic dedicated to continuing therapeutic education after the patient's discharge from the hospital, monitoring his/her learning until the patient/caregiver is completely autonomous
- Formally setting up a group of nurses who can provide their colleagues in other operational units with advice regarding tracheostomy patients, upon request
- A better research for the appropriate instruments to evaluate patient self-care

In a health context which deals, to an ever increasing degree, with chronic illness, it is essential to be able to face patients' various needs for assistance. It becomes ever more important to be able to recognize and evaluate the contribution of each single professional, the skills that they have, and their personal ability to develop and apply them.

To do so, action must be taken through training, organization able to support the various processes, and professionals to motivate them and bring out their value, are all necessary. Conditions must also be created to help them to work to their best, guaranteeing positive results for the users (4, 14, 15).

For some time now, researchers have been occupied with outcomes, evaluating the effect of nursing activities on patients. Successes have been identified that relate directly to this. They focus on all the tools which allow them to be measured and monitored, and on all the factors which influence their creation (8, 14, 15).

In addition, scientific literature shows that quality assistance is reached in settings in which there is a high degree of satisfaction both on the part of the patient, as on the part of the doctors and nurses (14, 15).

Nurses have a greater impact when they are given charge of the patient. They need to feel they have more autonomy and control over practices; that they can influence decisions, participate in the logic behind them and the handling of priorities, even while fully participating in organizational choices. Coordinators and managers at various levels need to take action to make this occur. And the training project we have initiated intends to work precisely on all these aspects.

We set the promotion of Self-Care as our overall goal, as the main palpable outcome of nursing a patient afflicted by a chronic illness. We managed to act on both the quality of assistance given to the patients with medium-term tracheotomy or laryngectomy and on the skills of the nurses involved, along with their motivation and multidisciplinary and multi-professional integration on the Disease Management Team.

"Workplace-based Learning" methodology has surely shown itself as added value. It has indirectly allowed for the achievement of organizational-related goals in addition to ones regarding training. And so, to continue to improve quality, it is not just a point of arrival, but also a point of departure towards a further implementation of the culture of taking charge of a patient. We feel that the real difficulty was not in the making of this project, in spite of its complexity, but will be in the guaranteeing of the constant application of the operational protocol which we have created. Many different critical points are present in the organizational context. They must be taken into consideration in order to produce real change. This study should not remain a work unto itself.

Furthermore, though training shows its efficiency by enabling learning, seen as a process which leads to a change in the learner's way of thinking, feeling, and acting (16), we feel that it is important to identify an appropriate mode for evaluating the skills that have been acquired by health operators at the end of this path. The impact of the quality of assistance given also strongly impacts outcome.

Limits

- The modes used to evaluate how the patient or caregiver learns to deal with a new psycho-physical condition after surgery could be improved by using more appropriate tools.
- The large size of the work group created the need for a great deal of time and coordination.

- Five of the nurses (20%) for personal reasons were not able to finish the training process.
- The bibliographic searches carried out were not systematic reviews of the literature.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Ministero della Salute. Direzione Generale della programmazione sanitaria. Piano Nazionale della Cronicità. Accordo tra lo Stato, le Regioni e le Province Autonome di Trento e di Bolzano del 15 settembre 2016 [National Plan for Chronic Illnesses. Agreement between the State, the Regions, and the Autonomous Province of Trento and Bolzano, dated September 15, 2016].
2. Cavaliere B., Manzoni E., Piu F.. Innovazione e Governance delle Professioni Sanitarie. Scenari di sviluppo per una sanità a misura d'uomo. [Innovation and Governance of Health Professions. Development scenarios for human health]. Casa Editrice Ambrosiana, 2015.
3. Servizio Sanitario Regionale Emilia-Romagna, Azienda Ospedaliera di Reggio Emilia. Arcispedale S. Maria Nuova, Direzione Professioni Sanitarie – D.P.S., Dott.ssa Marina Iemmi Direttore. Il modello per intensità di cura e complessità assistenziale: il punto di vista della DPS [The model for intensity and complexity of care: the point of view of the Directorate of Health Profession]. Emissione 21 Maggio 2012.
4. A cura di Orlandi C., Calamandrei C.. Manuale di management per le professioni sanitarie [Health Professionals Management Manual], McGraw-Hill Education, 2015.
5. Chiari P., Santullo A.. L'infermiere case manager dalla teoria alla prassi. [The Nurse as the Case Manager: from theory to practices] Mc Graw Hill, Milano, 2011.
6. Beers E., Lee Nilsen M., Johnson J.T.. The Role of Patients: Shared Decision-Making. Otolaryngol Clin North Am. 2017 Aug;50(4):689-708.
7. World Health Organization Regional Office for Europe Copenhagen. Terapeutic Patient Education – Continuing Education Programmes for Health Care Providers in the Field of Prevention of Chronic Disease. Report of a Who Working Group, 1998. EUR/ICP/QCPH 01 01 03 Rev. 2 Original: English.
8. Doran D. M.. Nursing outcomes – gli esiti sensibili alle cure infermieristiche [Nursing outcomes]. Mc GrawHill Education, 2013.
9. Riegel B., Jaarsma T., Strömberg A.. A middle-range theory of self-care of chronic illness. ANS Adv Nurs Sci . 2012 Jul-Sep; 35 (3):194-204.
10. Marzano A., Parisi G.. Organizzare la formazione sul campo. Metodi, modelli ed esperienze [Organizing Training in the Field: Methods, models, and experiences]. Tutor. Vol.17, N..3, 2017:21-28.
11. AGENAS. FSC e criteri per l'assegnazione dei crediti ECM alle attività di FSC [Workplace-based learning and the criteria for the assignment of CME credit to workplace-based learning activities]. In: http://ape.agenas.it/documenti/3.Formazione_sul_campo.pdf.
12. Bagnasco A., Calza S., Petralia P., Aleo G., Fornoni L., Sasso L.. Investigating the use of Barrows Cards to improve self-management and reduce healthcare costs in adolescents with blood cancer: a pilot study. J Adv Nurs. 2016 Apr;72(4):754-8.
13. Direzione Generale S.I.T.R.A, Regione Lombardia, Asl Brescia. L'assistenza e l'intervento educativo alla persona portatrice di cannula tracheale [Assistance and training for the patient with a tracheal tube] Dicembre 2011, Rev.00.
14. Aiken L.H., Clarke S.P., Sloane D.M., Lake E.T., Cheney T.. Effects of hospital care environment on patient mortality and nurse outcomes. J Nurs Adm. 2008 May;38(5):223-9.
15. Aiken L.H., Sermeus W., Van den Heede K., Sloane D. M., Busse R., McKee M., Bruyneel L., Rafferty A.M., Griffiths P., Moreno-Casbas M.T. Tishelman C., Scott A., Brzostek T., Kinnunen J., Schwendimann R., Heinen M., Zikos D., Sjetne I.S., Smith H.L., Kutney-Lee A.. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. BMJ 2012;344:e1717.
16. Gilbert J.J.. Guida Pedagogica per il personale sanitario. [Teaching Guide for health personnel]. Edizioni Dal Sud, 2002.
17. Woisard V., Galtier A., Baumann L., Delpierre C., Puech M., Balaguer M.. L'éducation thérapeutique du patient laryngectomisé total: influence des facteurs sociaux. [Therapeutic education of total laryngectomy patients: Influence of social factors]. Rev. Laryngol. Otol. Rhinol. (Bord). 2015;136(5):171-179.
18. Wong K., Gilad A., Cohen M.B., Kirke D.N., Jalisi S.M.. Patient education materials assessment tool for laryngectomy health information. Head Neck. 2017 Nov;39(11):2256-2263.
19. Pérol D., Toutenu P., Lefranc A., Régnier V., Chvetzoff G., Saltel P., Chauvin F.. L'éducation thérapeutique en cacérologie: vers une reconnaissance des compétences du patient. [Therapeutic education in oncology: involving patient in the management of cancer]. Bull Cancer 2007;94(3):267-74.
20. Buiret G., Chidiac F., Pujo K., Combe C.. Comment concilier éducation thérapeutique des patients et parcours de soin en cancérologie: application pour le voies aérodigestives supérieures. [How to reconcile therapeutic patient education and care pathology in oncology: Application in head and neck neoplasm]. Bull Cancer 2019;106:468-478.
21. McDonough K., Crimlisk J., Nicholas P., Cabral H., Quinn EK., Jalisi S. Standardizing nurse training strategies to improve knowledge and self-efficacy with tracheostomy and laryngectomy care. Appl Nurs Res. 2016 Nov;32:212-216;.

22. Singer S., Danker H., Guntinas-Lichius O., Oeken J., Pabst F., Schock J., Vogel H.J., Meister E.F., Wulke C., Dietz A.. Quality of life before and after total laryngectomy: Results of a multicenter prospective cohort study. Head Neck. 2014 Mar;36(3):359-68.
23. Pereira da Silva A., Feliciano T., Vaz Freitas S., Esteves S., Almeida E Sousa C., Quality of life in patients submitted to total laryngectomy. J Voice. 2015 May;29(3):382-8.
24. McDonald J., McKinlay E., Keeling S., Levack W.. Becoming an expert carer: the process of family carers learning to manage technical health procedures at home. J Adv Nurs. 2016 Sep;72(9):2173-84.
25. Cnossen I.C. van Uden-Kraan C.F., Eerenstein S.E.J., Rinkel R.N.P.M., Aalders I.J., van den Berg K., de Goede C.J., van Stijgeren A.J., Cruijff-Bijl Y., de Bree R., Leemans C.R., Verdonck-de Leeuw I.M.. A Partecipatory Design Approach to Develop a Web-Based Self-Care Program Supporting Early Rehabilitation among Patients after Total Laryngectomy. Folia Phoniatr Logop. 2015;67(4):193-201.
26. Beghelli A., Ferraresi A., Manfredini M.. Educazione terapeutica. Metodologia e applicazioni. [Therapeutic Education..Methodology and applications]. Carocci Edizioni, 2015.
27. Bobo N., Fondamenti pedagogici di educazione al paziente. [Pedagogical foundations of education to the patient]. CLEUP editore, 2012.
28. Kolb D.A.. Experiential learning. Englewood Cliffs, N.J.: Prentice Hall, 1984.
29. Copanitsanou P., Fotos N., Brokalaki H.. Effects of work environment on patient and nurse outcomes. Br J Nurs. 2017 Feb 9;26(3):172-176.
30. Choi J., Boyle D.K.. Differences in nursing practice environment among US acute care unit types: a descriptive study. Inf J Nurs Stud. 2014 Nov;51(11):1441-9.

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FORM USED TO RECORD TRACHEOSTOMIZED PATIENT EDUCATION

PATIENT ☐	CAREGIVER ☐
SURNAME________________________NAME_____________________	SURNAME________________________NAME_____________________
DATE OF BIRTH_______________________TEL___________________	DATE OF BIRTH_______________________TEL___________________

1° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Anatomy and physiology of the respiratory system																			
1° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver knows the organs of the respiratory system and their function																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
2° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Tracheotomy, tracheostomy and tracheal tube																			
2° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver knows the distinction between tracheotomy and tracheostomy, and the main features of the tracheal tube he has been supplied																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	

3° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Hygiene rules and other precautions																			
3° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver knows the hygiene rules and the precautions to be taken daily																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
4° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Replacement and cleaning of the inner tracheal tube																			
4° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver will be able to indipendently replace and clean the inner tracheal tube																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
5° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Suctioning of endotracheal secretions																			
5° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver will be able to indipendently perform the procedure of endotracheal secretion suctioning																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	

6° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Replacement of the tracheostomy tube																			
6° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver will be able to indipendently perform the procedure of replacement of the tracheostomy tube																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
7° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Stoma care																			
7° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver will be able to indipendently perform the clening of the stoma																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
8° TOPIC	***DATE OF THE EDUCATIONAL INTERVENTION AND INITIALS OF THE HEALTH PROFESSIONAL***																		***NOTES***
Respiratory hygiene																			
8° OBJECTIVE	***DATE OF THE EVALUATION AND INITIALS OF THE HEALTH PROFESSIONAL***																		
The patient/caregiver, will be able to promote the humidification, filtration and heating of the respiratory mucosa																			
	GOAL ACHIEVED																		
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	

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Infectious risk in ostomy patient: the role of nursing competence

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Abstract. *Background and aim of the work:* The risk of peristomal infections in ostomy patients is well documented in the literature. The nurse and the stoma therapist play a fundamental role in the management and prevention of ostomy-related infections. The present research aims to investigate, across the different phases of the nursing process, the level and characteristics of nursing expertise and highlight their impact on reducing infectious risk in ostomy patients. *Methods*: 40 nurses (31 women; mean age = 47.7; SD= 7.68) working with ostomy patients were interviewed, in three Italian Local Healthcare Company (LHC) of Northern Italy, Central Italy, and Southern Italy. Nurses compiled a semi-structured ad-hoc interview concerning the level of skills, training, and experience with ostomy patients. The declared expertise has been compared to the retrospective archive data related to the peristomal skin infections of the three LHC. *Results:* Several differences have emerged in terms of nurses' expertise and care settings: for instance, ostomy complications in Southern Italy being managed with specific checklists, whereas in the Northern Italy complications being managed by stoma therapists and in Central Italy by hospital ward general nurses. Moreover, the level of professional training was very important for all respondents. The incidence rates of infections after training are lower than a pre-training period. *Conclusions*: The expertise resulting from specific training for nurses and stoma therapists are crucial for the management of the ostomy and the prevention of complications, in particular of infections. If the training reduces the peristomal complications, therefore, it is necessary to provide and preserve nurses' expertise, to guarantee patients an optimal treatment path. (www.actabiomedica.it)

Key words: ostomy, infectious risk, peristomal, complications, competence, nursing, interview

Introduction

The ostomy

The word "ostomy" (or "stoma") derives from the Greek and means "mouth", and it is done using a surgical procedure that creates an aperture in the abdomen (i.e. the ostomy). This aperture allows the patient to eliminate feces and urine that will are collected in a special medical device (pouch) as well as to introduce substances for nutritional or therapeutic purposes (1). Because of functional and bodily modifications, patients require healthcare and welfare due to the increased of complications related to ostomy conformation and functionality (2). According to Vyas (3), the two main types of ostomies are: intestinal, such as colonstomies (cecostomy, transdostomy, sigmoidostomy, and ascendostomy) and urinary, of which the most important are nephrostomy, cystostomy, and ureter-cutaneous-ostomy.

Ostomy complications

Complications of the stomal complex (i.e. the ostomy and its surrounding area) may be caused by:

- surgical ostomy outcomes or incorrect techniques (these are the most widespread source of complications and correspond to about 40% of cases);
- ostomy inappropriate managing methods (4);
- individual factors (such as age, skin conditions, excessive increase or decrease in body weight, pre-existing and/or concomitant diseases);
- or abdominal wall alteration of the ostomy site.

That is, it is very important to recognize whatsoever change in the appearance or functionality of the ostomy, as well as the main accompanying symptoms, promptly report them to healthcare professionals and immediately implement possible solutions. Specifically, ostomy complications generally consist of (5) constipation and irregularity of bowel movements and peristomal skin redness and inflammation.

In all cases, it is necessary to eliminate the cause of the problem with specific treatments in order to avoid the rapid evolution of (more or less) extensive skin lesions, such as (6): fungi infections; folliculitis; peristomal hernia; skin plane retraction below the ostomy; stenosis and ostomy prolapse.

Prevention of complications

In order to prevent the above-mentioned ostomy-related complications, patient education and counseling, the management of resources and training are essential activities for an effective prevention plan. The creation of a support network involving public and private structures within a wider research process can also help to adopt a prevention plan on a larger scale.

The importance of preventing ostomy infections is highlighted in the literature and pinpoints several key-points (7, 8): the implementation of practices to delimit the ostomy site and reduce complications; the importance of expert ostomy therapists possessing skills in pre-operative care, infections and improving the patients' quality of life); the patient involvement, as a part of a working approach centered on the patient and the caregiver and the ability to use and understand tools and techniques used in ostomy management.

Role of the nurse in the prevention of peristomal infections

The nurse (more or less specialized) plays a fundamental role in the correct planning of health care management in ostomy patients, in the pre- and post-operative care, in the hospital ward, in the clinic, or at home. Patients must be properly informed and supported in the entire treatment period between diagnosis and intervention, in order to ensure the patient feels ready for the surgery. Similarly, it is crucial for patients to understand the psychological and emotional implications of consequent the operation, to manage their stress and reduce the sense of anxiety. Moreover, the caregiver's involvement is fundamental for the patient's ability to self-regulate anxiety. That is, patients must be supervised during the whole care until up the healing (or, at least, the self-management of their disease) and the achievement of the maximum possible degree of autonomy. Several studies have shown how a global approach to the patient can be decisive for treatment progress, duration of the hospital stay, and quality of life (9; 10). In particular, the education of patients and caregivers (as supported by the appropriate tools) is strongly incisive on obtained benefits and the prevention of complications (i.e. infections) (11; 12). Furthermore, this can increase self-esteem, self-care and compliance in assisted persons (13).

The nurse who manages the duration of the rehabilitative and educational process of the ostomy patient (both in pre- and post-stages) is the stoma-therapist. A stoma-therapist is a professional figure in possession of the technical and behavioral skills that enable him or her to provide advanced assistance and rehabilitation services to the ostomy patient (14). In different health care settings, however, the hospital ward nurses are the ones who generally assist ostomy patients. They are not always adequately trained, understandably, and may not have the relevant skills to adequately respond to the patient's questions or choose the appropriate instructive pathway for the patient in discharge. Consequently, this may lead to a greater incidence of stoma-related complications, due in part to incorrect nursing practices or, ultimately, to the incorrect care management at home. The competence and training level of nurses, therefore, seems to be decisive for an optimal healing outcome in patients, and the reduction of ostomy complications including the infectious ones.

Methods

Aim

Given the evidence reported in the literature, the aim of the present study consists of improving the nurses' training of respect to specific phases of the nursing (i.e., the assessment, assistance, education, and follow-up phases), with a special emphasis on how these skills reduce the risk of infection in ostomy patients.

Design

The research consists of a qualitative study focusing on a comparison of self-reported skills among nurses with retrospective archive-data on the peristomal skin infections (i.e. abscess and cellulitis, but not fistula and dermatitis) of ostomy patients.

Setting

The study began on October 2018 and concluded on February 2019. Three Local Healthcare Company (LHC) were involved: the LHC of Piacenza, the LHC of Rome, and the LHC of Manduria (Taranto) (Northern, Central, and Southern Italy, respectively).

Instruments

Two instruments were used:

1. An ad-hoc semi-structured interview lasting c.a. 60 minutes, aimed at evaluating nursing skills exhibited during patients' health care. Four main areas were investigated: personal details, professional data, acquired training and applied nursing skills.

The interview guide is reported in Table 1.

2. The retrospective archive-data regarding peristomal skin infections found in assisted ostomy patients in the involved Complex Operating Units (COU) and surgery units of the three LHC.

The collected data concerned the number of infections found in the last 6 months of 2017 year (July 1st – December 31st) and the antecedent 7 months before performing interviews (May 1st 2018 – November 30th, 2018).

Data analysis

Prior to participant consent, each interview was recorded, transcribed word by word by the research team, and then analyzed with respect to thematic content. Qualitative data was codified by three independent raters to compute the inter-rater accordance (Cohen's Kappa Coefficient = .092).

Acquired skills reported by interviewed persons were compared with the retrospective archive-data regarding peristomal skin infections collected in the three LHC. An inter-structural comparison was made to verify the setting uniformity.

Participants

Through convenience sampling, a total of 55 nursing professionals operating in the three different companies were recruited (15 from the stoma therapy center and the general vascular senile surgery unit COU of Piacenza; 25 from the surgery unit COU and stoma therapy of Rome LHC; 15 from the stoma therapy of Manduria LHC). 15 professionals that did not work with stoma patients or did not give their consent were excluded from the study, yielding a final sample of 40 nurses.

Nurses had a mean age of 47.7 (SD = 7.68) with an average service length of 12.38 years (SD = 10.2). Data on the three LHC populations were comparable: mean age = 12 (SD = 11.76) at the Manduria center; mean age = 13.75 (SD = 9.19) at the Piacenza center; mean age = 11.06 (SD = 10.11) at the Rome center. Most nurses (67.5%) had a regional qualification as a professional nurse; 22.5% had a bachelor's degree and 10% had a master's degree. Ten participants (25%) had a post-graduate training and four of them had a Stoma-care and incontinence" post-graduate training. More than half of nurses (60%) attended a refresher

Table 1. The interview guide

Thematic area	Questions
Personal data area	Age
	Sex
	Geographical area of belonging
Professional area	In which hospital ward do you work?
	Since when?
	How many years have you worked as a nurse?
Training area	Professional title (regional qualification as a professional nurse; bachelor's degree; master's degree)
	Advanced qualification (post-graduate training -Ph.D.)
	Have you ever attended a "Stoma-care and incontinence" post-graduate training? If so, in which year?
	Have you ever attended a "Stoma-care and incontinence" refresher course ? If so, in which year?
	Did you attend a "Stoma-care and incontinence" refresher course during the last six months?
Stoma-care nursing skills area	How do you prevent infections in ostomate patients?
	What are the interventions you apply to prevent infections of peristomal skin?
	How do you plan nursing care in the ostomy patient?
	How do you check the goals you've set yourself?
	How do you manage ostomy-related complications?
	How do you deal with patient and/or caregiver about the education on the management of ostomy?
	What are the other professionals you interact with to reach the care goals?

course in stoma therapy over the past six months. No participants had a Ph.D. title.

Ethical considerations

This study has been approved by the Ethics Committee of Area Vasta Emilia Nord (Italy) (n° 0088206/2018) and has been conducted in agreement with the Helsinki declaration. Informed consent was obtained before the nursing professionals' participation in the study. All eligible participants were informed of the purpose and characteristics of the study and received a clear and informative document, explaining the design, aims, and procedure of the study. The investigator presented the study to the nursing professionals and answered any questions before asking for informed consent. The nurses who signed the consent have been informed that participation in the study was voluntary and that they could withdraw their consent to participate at any time. The data collected has been reserved and used in compliance with the current legislation on the protection of sensitive data and privacy regulations. The Investigator was the data processor, according to EU Regulation 2016/679. The Investigator guaranteed, at every stage of the study, monitoring, verification, review by the Ethics Committee and regulatory authorities, providing direct access to both the data and the original documents.

Results

1. Qualitative analysis of interviews

The results relative to the thematic contents of the 40 interviews are reported below.

Infectious risk

As addressed earlier, nurses (especially those that undergone specialization) may have a large impact on the reduction of ostomy complications, especially, infections. Regarding infectious risks, it is fundamental nurses check the ostomy appears in the days following the surgery and implement relevant precautionary procedures to prevent infections. The educational aspect is crucial as this allows recognizing signs and symptoms.

Thirty-three participants (82.5%) highlighted the role of hands' hygiene with respect to peristomal skin infections.

"*The hands' hygiene is highly important before and after the contact with the patient, but as well as when manipulating biological materials*" (interview n. 33).

Thirty participants (75%) attributed great importance to using gloves and individual medical protection devices.

"Well, in general, first of all, a nurse must keep in mind what kind of patient he or she is dealing with. It is obvious to proceed with as much care as possible, for instance using single-use materials (gowns, gloves, etc.) and distinguishing clean and dirty areas as well as taking in account the presence of other patients in the same room. Therefore, each time you undertake whatever health care procedure to a first-time patient, it is necessary to replace all single-use materials before moving on to the next one" (interview n. 38).

Twenty-seven participants (67.7%) highlighted the necessity of a correct peristomal skin hygienic treatment.

"Specific attention goes to accurately cleanse the skin with water and soap. It is clear that, in the presence of little wounds, each of them must be specifically treated" (interview n .11).

Sixteen participants (25%) reported the importance of using appropriate disinfectants.

"So, peristomal skin hygiene is very important and suitable non-alcoholic disinfectants are necessary; the area of interest must be always dry and, if necessary, it is suggestable to use sprays and powders to avoid complications from peristomal skin" (interview n. 34).

Three nurses (7.5%) considered it indispensable to mark the pre-operation site the ostomy in order to avoid infection. Only two participants (5%) considered it a necessity to possess adequate skills in order to carry out advanced treatments.

Health care planning

Nurses (with or without specialization) play a fundamental role in effective health care management and planning for stoma patients both during pre- and post-operation, in the hospital wards, and at home.

Nineteen participants (47.5%) declared that their main goal was the reduction of ostomy-related complications, among which the incidence of infections is. To do this, thirteen nurses made direct observations on ostomies and six nurses apply advanced treatments.

"By inspecting the ostomy skin and its surrounding, or an eventual irritation and how it appears, or how the ostomy forms in a convex manner…Then, I report to the surgeon" (interview n. 30).

Fifteen participants (37.5%) declared that their main goal was the evaluation of patients' achievement of autonomy during their ostomy management. Twelve participants (30%) underlined the importance of patients' education for independence adequate health care.

"Help patients to understand how the bag works, how to replace it if patients can to do it, otherwise instruct their caregivers […] and patents education, which is the most important thing, right? Then, see how the patient reacts" (interview n. 40).

Twelve participants (30%) cited hygiene, in addition to the decision where to apply the correct ostomy protection. Five participants specified hygiene and cleaning only, two the protection site, and five indicated both aspects for a correct health care planning.

"Let's say that it should be cleaned daily with appropriated detergents" (interview n. 25).

Nine participants (22.5%) referred to using checklists for the evaluation of health care goals.

Eight nurses (20%) referred to respect the health care plan, procedures, and guidelines adopted in the hospital ward.

Nine nurses (22.5%) emphasized the importance of offering adequate psychological support to patients.

Seven participants (17.5) gave importance to listening to the patient and communicate with him.

Six participants (15%) also included dietary aspects in health care planning for effective ostomy management and the prevention of complications.

The management of ostomy complications

Interviewed participants managed ostomy complications subdividing them into early or late, and severe or not severe complications. Based on this classification, participants usually made health care-related decisions as to whether to involve other professional figures. Participants referred to the following complications: lacerations, pus collection, surgical staples separation, irritation, infections, dermatitis, dehiscence, inflammations, fistulas, prolapse, reddening, edema, bleeding, necrosis, infiltration, and stoma retraction.

After an initial evaluation, twenty-two participants (55%) applied the health care plan in autonomy. In case of complications, participants reported the following tools: use of a bacteriological buffer, skin hydration, irrigation, dietary control, use of adequate plaques, advanced medications, skin cleansing, and use of antiseptic disinfectant or antibiotic ointments.

Consultation with is considered fundamental for 52.5% of participants; for 35% of participants, in particular, the crucial evaluation should be conducted by stoma therapists, if possible.

"It depends on the type of complication: for instance, if there is bleeding, I must immediately handle it. But it depends also from the site: if it is in the peristomal area, I call the stoma therapist because he or she is the relevant professional" (interview n. 20).

60% of nurses referred to skin hygiene in general terms, while two of them specified skin-cleansing as an important factor in managing peristomal skin complications.

"Peristomal skin is fundamental; it is the most important part of the ostomy itself. It has to be always well cleaned and intact" (interview n. 34).

According to 5 nurses (12.5%) ostomy complications should be managed through planning and execution of standard procedures and guidelines.

Patient and caregiver education

Patients must undergo surgical interventions that lead to changes in bodily-shape. This implies that not only patients have to face ostomy-related problems, but also body changes to their body that may carry psychological implications. In this context, the role of the nurse consists of accompanying the patient along a journey consisting of different stages. This starts with the complete support of the patient, moving on to the establishment of active support and, finally, to the achievement of a state of self-care including encouragement activities. All interviewed participants deemed the education of patient and caregiver as a fundamental element of the health care service. Through counseling activities, indeed, the goal is to inform the patient in care about possible complications.

Thirteen participants (32.5%) have spoken about structured training.

"We train the patient directly from his or her bed during the first period but, when possible, from the fifth day we call patients to the doctor ward, which is more suitable as there is more privacy, and all the necessary products" (interview n. 11).

In most cases, the training starts once the surgical intervention is completed: three participants indicated the pre-operation phase as the start of educational training, while eight participants reported facing the argument during the patrol between beds. Only one interviewed mentioned the use of a mirror as an educational tool, to help patients recognize their modified body image.

Training needs

To ensure the safety of the patient, a structured diagnostic, therapeutic, and care program is necessary.

To achieve this goal, nurses must master advanced nursing techniques through specialistic training and professional courses. However not all the participants reported the importance of training as a need. The training needs are usually quantified based on the professional skills required from a specific patient or a health service context.

From the interview analysis four training areas emerged:

1- Knowledge of new safety measures (nineteen participants, 47.5%).

"Sure, attendance of an updated professional course is fundamental, mostly given the existence of a helpful novel techniques and awareness of frequently renewed products" (interview n. 37).

2- Recognition of ostomy complications (ten participants, 25%).

"It definitely depends on the type of complication. I may request a preventive evaluation of complications or maybe a careful opinion of colleagues who work with ostomies: that is would be useful" (interview n. 17).

3- Provide psychological support (seven participants, 17.5%).

"I believe that the psychological aspect underlies many factors; nurses try, or at least I do, to keep under control the patient psychological asset" (interview n. 31).

4- Adopt an educational-relational approach (five participants, 12.5%)

"*Once the patient has understood, let's say, has accepted the situation, it will be easier to educate him or her*" (interview n. 31).

2. The relationship between the skills of professionals and peristomal skin infections

Skills and competencies declared by professionals during the period of interest have been correlated with the retrospective archive data relative to peristomal skin infections (abscess, fistula, dermatitis, and cellulitis). From the analysis of the retrospective archive data related peristomal skin infections, some differences have emerged between the number of infections found in the last six months of the year 2017 (July 1st –December 31th, see Table 2) and the number of infections of the six months antecedent the interviews period (May 1st – November 30th, 2018, see Table 3).

Tables 2. Rate of infections in the three Local Healthcare Company (July 1st – December 31st, 2017)

	Number of surgeries/ ostomy	Number of infections	% of infections
Manduria	14	1	7
Piacenza	61	4	6,5
Roma	30	3	10

Tables 3. Rate of infections in the three Local Healthcare Company (May1st – November 30th, 2018)

	Number of surgeries/ ostomy	Number of infections	% of infections
Manduria	38	0	0
Piacenza	97	1	1,03
Roma	22	1	4,54

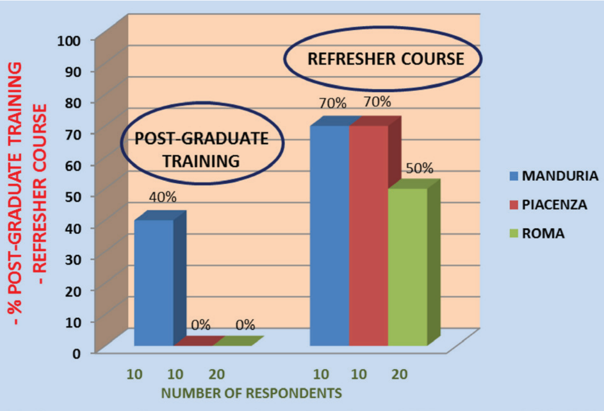
From the data collected in the period between July 1st 2017and July 30th 2017, it has emerged that the rate of infectious cases was higher in Rome (10%), followed by Manduria (7%), and finally Piacenza (6.5%). Comparing the rate of infection with the interviewee profiles it has emerged that 20% of participants at Manduria had a post-graduate specialization in stoma therapy and incontinence, which is a title qualifying specific competencies and skills in this topic, while the participants of Rome and Piacenza did not have a similar specialization title.

The participation at professional courses before the period of interest (i.e. July 1st –July 31st, 2017) was: 20% at Manduria, 40% at Piacenza and 30% in Rome. During the data collection (May 1st – November 30th, 2018) it has become apparent that the infection rate at the Manduria center was equal to 0%, at the Piacenza center was 1.03%, and at the Roma center was 4.54%. There have been substantial differences between training activities have undergone during the period between the previous data collection and this last, with an infection rate reduction equal to 0% at Manduria, 6% at Piacenza, and 5% at Rome. Considering the last six months, interviewees have reported attendance of refresher courses with the following percentages: 50% at Manduria, 20% at Piacenza, and 5% at Rome. Between the first collection in 2017 and the second one in 2018 it can be claimed that professional training played a key factor in the reduction of the infection risk. Moreover, specializing as a stoma therapist of some interviewees added an adjunct value of continuous professional development.

In particular, great importance is attached to the pre-operative phase, which most impacts the quality of life of individuals subjected to an ostomy operation. Later on, if correctly executed, this also contributes to reducing the risk of complications such as peristomal infections. In all three LHS, professionals attributed strong importance to the correct use of hand hygiene as a personal protection device. This procedure is indeed the most effective, simple and cheap in preventing healthcare-related infections.

Comparing these data with personal competencies (Table 4), we can speculate that for the Manduria case there is a higher number of professionals possessing a post-graduate training, in Piacenza there is a high rate of professionals having attended refresher courses, while in Rome the percentage is 50%. This could justify, at least in part, the low number of infections detected in the first two LHS. This could means that recent acquired competencies and skills learned during training may determine this outcome, although further studies would be needed to verify this result.

Table 4. Training course in the three Local Healthcare Company



Discussion

Through the employment of a semi-structured interview, the present research aimed to bring out differences between the nurses' awareness of ostomy complications and the archive data on the detection of infection cases. The main results were grouped into the following three areas: the management and prevention of ostomy complications, health care planning, and professionals' skills and training.

The management and prevention of ostomy complications

The analysis of the forty interviews conducted in the three LHS revealed similitudes in the management of prevention systems of the risk of infection in peristomal skin. Indeed, almost all participants, identified hand hygiene as the "*primus inter pares*" method for correct infection control and are perceived as necessary to ensure health care safety. The percentage of meticulous peristomal skin hygiene is, in contrast, halved for all three LHS. With regards to interventions aimed at preventing infectious risks, the following heterogeneous strategies have been recorded: professionals with advanced skills in applying scientific evidence to treatment, and professionals that ground their work on the daily practice. These differing strategies most likely affected by the level of post-graduate training. The nurses in Manduria recognized also their fundamental role within the pre-operative period, such as the site marking on which the ostomy will be made, as well as to ensure an appropriate counseling service.

Piacenza and Rome participants (40% and 60%, respectively) paid more attention to practical aspects such as patient observation, hygiene, approach to stoma protection, but they also indicated as fundamental the training (40% and 35%) and the relationship (30% for both centers) to ensure an adequate health care service. On the other hand, at the Manduria center the 70% of nurses follow the health care guidelines very closely using standard procedures, which help to increase variability in daily practices. The employment of patient-personalized health care plans, however, has not been mentioned. Regarding the stoma protection, 20% of participants in Manduria, 50% of Piacenza, and 45% of Rome mentioned the importance of choosing the appropriate device for that patient, underlying the role of clinical knowledge in stoma therapies.

For the management of more complex issues, just over half of the interviewed required the consultation of a doctor. Indeed, the consultation of a stoma therapist should be evaluated if this professional figure is employed in the structure. Some interviewees work in stoma therapy wards and they consequently must consult the doctor regarding several factors, as compared to colleagues who work in surgical wards. The participants of Manduria usually require the consultation of a doctor or stoma therapist, whereas those of Piacenza and Rome work with more autonomy. The degree of this autonomy is evident from the fact that 75% of nurses in Rome plan and immediately implement treatments aimed at the management of complications, compared to the nurses in Piacenza (40%) and in Manduria (30%) and

The realization of a plan for modification of habits in patients is cited by 50% of participants in Piacenza, 45% in Rome, and 20% in Manduria. Not so many participants of the three LHS attributed importance to preparing patients in dealing with changes in body image (40% at Piacenza, 20% at Manduria, and 5% at Rome). Only 5% of interviewee carried out an investigation of the patients' relatives. Only 7.5% mentioned to a pre-operative education, whereas the 92.5% mentioned to post-operative education. At last only 10% mentioned peristomal skin self-monitoring.

Health care planning

Health care planning revealed some differences in how each single professional works. Several domains have been specified and the health care was categorized into the following categories: observation, education, relationship, and ostomy management. Most participants described ordinary daily activities while others referred to follow mutual instruments in the hospital ward such as guidelines, protocols, and standard procedures. Analysis of responses regarding the evaluation of health care goals indicated a homogeneous population. From the Piacenza and the Rome interviews (30% and 80%, respectively) data mostly referred to ostomy complications control or the patients' achievement of autonomy (60% and 45%), whereas at the Manduria center the 90% of nurses reported the use of standard procedures and instruments (e.g. checklist), though participants did not mention the items of them. The daily observation of the surgical wounds is useful for professionals to keep under control the situation, as well as the correct hygiene and the correct choice of the stoma protection increase the positive course of the ostomy. Forty-five percent of all participants plan the health care service in autonomy after an initial evaluation, in which the direct ostomy observation represents a part of the successive planning.

It has been underlined that a typical health care plan helps professionals to orient their activities to homogenize attitudes and approaches and reduce errors when dealing with patients. Nonetheless, this standard approach should always be associated with practices that put the single patient needs at the center of the plan, with the aim of making nursing into an ensemble of personalized activities. Moreover, organizational aspects of the working context also affect professionals' management of ostomy complications. Some nurses recur to checklists and standard procedures; others directly manage complications as a stoma therapist, while others request specific consultation of other professionals. Lastly, although an appropriate technical vocabulary is indispensable to document their work to others, the language used by participants results heterogeneous. At the same time, the heterogeneous source of medical approaches across the LHS highlights the indispensable role of the stoma therapist in orienting the appropriate purchase of supplies (also in accord with Health Technology Assessment Standards).

Professional skills and training

Patients' and caregivers' education consent to giving them instruments to prevent whatever complications and promote autonomy, as well as the dialogue, the active listening, and the psychological support consent to accompanying patients in their healing path. The education of patients and caregivers was considered very important by all participants, even if only a few of them have spoken of clear (and poorly coherent with educational approaches) objectives. Only 10% of the Manduria nurses and 15% of the Rome nurses referred to therapeutic education for patients.

The interviews revealed that professionals possess an average knowledge regarding infectious risk complications, related guidelines, health care insured techniques, and recent innovative resources for the treatment of this pathology. This is demonstrated by the fact that the totality of participants exposed the necessity of specific training in this the previous mentioned topics, which among them the most important is the technical assistance related to novel devices (95% at Rome, 50% at Manduria, and 20% at Piacenza), followed by psychological and relational-educational aspects management (25% at Rome, 30% at Manduria, and 50% at Piacenza), and by the complications recognition including infections (15% at Rome, 30% at Manduria and at Piacenza).

Moreover, participants are aware of what is advisable to have to improve their competencies or to acquire new ones. According to some participants, the need for training must follow a cyclic and constant course characterizing improvements, which evolve in parallel with changes in the context. This means to be able to indicate what is missing for developing the professionalism, as well as possessing self-assessment skills acquired during activities, and reflecting on health care outcomes. Recognize the importance of developing effective competencies during the activities is perceived as fundamental from professionals and this is enhanced during educational training. These competencies do not entail mere information of ostomy patients, but also an education aimed to make them fully aware of the new condition, to encourage them in recovery of autonomy, as well as to help them to early recognize potential complications including infection.

Conclusions

A nurse carrying out his or her activities within a protocol of the stoma therapy is an expert professional that who makes use of his health-care and rehabilitative assistance sustained by values and scientific knowledge. A nurse is, in fact, a proactive member of the scientific community to which he or she belongs. A nurse's activity evolves and takes shape within a specialist service, as well as organizational, educational, and research domains. Indeed, a nurse's expertise affects the patients' health and subsequent clinical course, including long-term welfare until up the achievement of complete self-care (9-10) and self-management of the ostomy (14). The interview and interpersonal relationship with the patient are also very important (13-16) to ensure that patients fell listened, accepted and encouraged (17). That is, a nurse's expertise can ensure an optimal health-care course within a broader scheme of continual improvement. Regards the prevention of ostomy infections, the literature demonstrates that the stoma therapist (who possesses specific experience and competence) plays a key-role to collect adequate preoperative patient information, to make the peristomal design in order to prevent complications including the invective ones (8) and in order to use advanced medications (4, 14).

Regarding the prevention of ostomy infection, the literature indicates that professional training and involvement within a patient/caregiver-centered approach are key, as well as familiarity with the experience and expectations of the families of patients (17). Related to this, all participants the education of considered fundamental the patients and caregivers in recognizing the signs and symptoms of ostomy complications (5, 7) but only a few participants have spoken about their therapeutic education of patients. If the prevention and management of complications are the responsibility of the stoma therapist (when available), in every day health care service these activities inevitably fall on general nurses who, during the interviews, expressed difficulties in managing ostomy protections with a correct methodology (4). Sometimes, therefore, nurses are frequently inadequately trained and competent in responding to patients' needs and putting into action a suitable educational plan of patients on discharge. This presumably raises the incidence of bad practices-related complications and not adequate ostomy protections. Therefore, the nurses' practice level is deemed determining to the correct patient management, as well as the insurgence of complications (11, 12, 15). The interviewed participants reported facing complications based on the acquired experience during the specific ostomy therapy training. That is, the possession or not of advanced competencies in the stoma therapy field makes participants act with different methods when dealing with complications. Who attended specific training demonstrate the tendency to ask consultation of the stoma therapist or immediately evaluate complications to elaborate a plan; conversely, who not attended specific training recently focus their attention on the type of medication to execute, without pondering specific complications details.

The need for better professional training was mentioned by all participants, though they also reported that training should consist of cyclic courses enabling a long-term improvement of the professional training of nurses, as well as the need for patients' assess to specific interventions for the early detection of infection. Training is viewed as a part of the wider learning process that brings a transformation, leading professionals to be more aware of their resources, capabilities, and on what and how to improve these skills to ensure patients a better health care service (7). Regarding post-graduate training, the analysis revealed that not the totality of participants had a "know-how" derived from the training course within the interested area. Moreover, participants indicated a lack of constant training, which lead to a deprecation of the acquired skills in light of continual advancements in scientific research. Lastly, the retrospective data associated with acquired specific expertise through professional training confirmed a peristomal skin infectious risk reduction. It is possible to hypothesize that higher acquired professional levels correspond to the significant infection rate reduction, although further research is needed. In accord to this, therefore, specific and continuous training is necessary to increasingly enrich the nursing profession which is characterized by patients' needs.

Last, the interviewed participants make educational interventions at different times of the health care service but only a few of them make a family investigation of the patient, if not a minority during the pre-operative phase. As emerged from interviews, the types of professional training modalities varied in the different geographic areas: Manduria' nurses use a relational approach, Piacenza's nurses use a structural approach and, for last, Rome's nurses use an informative approach.

Since nowadays the fight against hospital infections is among the most difficult (in terms of nursing-sensitive outcomes), it is important that this challenge being lived by nurses as a deontological and ethic value. This also means that every LHS should promote a systematic understanding of the needs perceived by patients, in order to ensure proper training interventions to improve the quality of health care service.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Adloft M, Ollier JCL. Les stomies digestives de l'adulte. Paris: Springer-Verlag; 1993.
2. Chiara K, Fent Y, et al. La colostomia. Una guida della lega contro il cancro per malati e familiari. Lega contro il cancro [Colostomy. A guide of the cancer league for patients and family members. Cancer League]. Switzerland: 2003.
3. Vyas P, Crispen PL. Metabolic bone disease following urinary diversion in adults. Curr Opin Urol 2014; 24(6):614-618.
4. Abita M, Canese G, Conti E. et al. I principi del processo di realizzazione chirurgica delle enterotomie: stoma siting e tecniche di confezionamento [The principles of the surgical implementation process of enterotomies: stoma siting and packaging techniques]. AIOSS 2013; 1-59.
5. Robertson I, Leung E, Hughes D, Spiers M, Donnelly L, et al. Prospective analysis of stoma-related complications. Colorectal Dis 2005; 7(3):279-285.
6. Douri T, Shawaf AZ. Letter: Pseudoverrucous papules and nodules: a case report. Dermatol Online J 2012; 18(4):14.
7. Bachelet V. The training of stomatherapy nurses. Rev Infirm 2012; (181):29.
8. Baykara ZG, Demir SG, Karadag A. et al. A multicenter, retrospective study to evaluate the effect of preoperative stoma site marking on stomal and peristomal complications. Ostomy Wound Manage 2014; 60(5):16-26.
9. Márquez-Serrano M, González-Juárez X, Castillo-Castillo L, González-González L, Idrovo AJ. Social network analysis to evaluate nursing interventions to improve self-care. Public Health Nurs 2012; 29(4):361-369.
10. Larson EL, Ferng YH, McLoughlin JW, Wang S, Morse SS. Effect of intensive education on knowledge, attitudes, and practices regarding upper respiratory infections among urban Latinos. Nurs Res 2009; 58(3):150-157.
11. Foertsch LY, Hoffmann RL, Ren D, Stolar J, Tuite PK. Evaluation of a Surgical Site Discharge Teaching Tool Using Pictures and a Mirror. Clin Nurse Spec 2016; 30(2):101-105.
12. Wilde MH, Brasch J. A pilot study of self-monitoring urine flow in people with long-term urinary catheters. Res Nurs Health 2008; 31(5):490-500.
13. Katrancha ED. Clean intermittent catheterization in the school setting. J Sch Nurs 2008; 24(4): 197-204

14. Colaiocco E, Durizzotto V, Fazzari N et al. L'infermiere esperto in stomaterapia, coloproctologia e riabilitazione delle disfunzioni del pavimento pelvico: storia, formazione e job description. Associazione Italiana Operatori Sanitari di Stomaterapia [The nurse experienced in stomatherapy, coloproctology and rehabilitation of pelvic floor dysfunctions: history, training and job description. Italian Association of Stomatherapy Health Care Operators]. Bellante (TE): 2011.
15. Mangnall J. Managing and teaching intermittent catheterisation. Br J Community Nurs 2015; 20(2):82, 84, 86, passim.
16. Comb J. Role of the stoma care nurse: patients with cancer and colostomy. Br J Nurs 2003; 12(14):852-856.
17. Ferreira-Umpiérrez A., Fort-Fort Z. Experiences of family members of patients with colostomies and expectations about professional intervention. Rev Lat Am Enfermagem 2014; 22(2): 241.

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Original article: Instruments and competences to improve patients' outcome

Water content of delivered gases during Helmet Continuous Positive Airway Pressure in healthy subjects

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Abstract. *Introduction:* During Continuous Positive Pressure Ventilation delivered through helmet, the patient inhales high flows of gas without adequate conditioning. However, the need to humidify the inspired gas during Helmet-CPAP, has not been sufficiently explored. *Methods:* Experimental design study. Six healthy individuals underwent High Flow Helmet CPAP with different gas flows (60 and 80 L/min) and FiO_2 (0.35, 0.5, 0.7 and 1) generated by a Venturi system, with and without active humidification. The active humidifier setting was 26 ° at the humidification chamber and 28 ° at the helmet gas inlet. At each setting, measurements about temperature and relative humidity inside helmet were taken. Comfort level at each setting was evaluated using a visual analog scale rated from 0 to 10. *Results:* Without heated humidification, the mean value of absolute humidity in the eight combinations investigated was 5.9±2.1 mg H_2O/L, with a mean temperature of 25.8±0.9°. With heated humidification mean absolute humidity was 15.0±3.5 mg H_2O/L with mean temperature of 29.0±0.1°. The median comfort scale value was 6 (IQR: 5.25-6.75) during the phase without humidification vs 8 (7.25-8.0 - $P<0.01$) when active humidification was applied. *Conclusions:* In healthy subjects undergoing High Flow Helmet CPAP, heated humidifiers with heated wires tubes are necessary to avoid the under-humidification inside the helmet. To obtain patient's comfort and airways mucosal humidification during continuous Helmet CPAP, the most desirable conditions are reached by heated humidifiers with a humidifying chamber temperature settled between 26-28°C. (www.actabiomedica.it)

Key words: CPAP, Humidification, Comfort, NIV, Helmet, heated humidifier

Introduction

The application of free flow Helmet Continuous Positive Airway Pressure (Helmet-CPAP) may improve oxygenation in patients with acute respiratory failure (1, 2) and acute pulmonary oedema (3,4). Benefits of Helmet-CPAP are greater when the treatment time is prolonged until continuous application is reached (5). To obtain the highest patient's compliance to the treatment, nurses may optimize the type of helmet seal, noise levels, and humidification of the inspired gases (6-8). The American Association for Res-

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piratory Care (9), reported that active humidification is suggested for non-invasive mechanical ventilation, as it may improve adherence and comfort. However recommendations about the level of gas humidification and the strategy to employ during non-invasive ventilation (NIV) and high flow Helmet CPAP are missing, and few data are available.

One study suggested to use unheated humidifiers (10), because the optimum temperature setting may be between room temperature and 31°C, but with the humidifier used in this study the water temperature could not be set below 31°. Other authors discouraged the use of active humidifiers since these cause condensation inside the interface with increasing of patient's discomfort (11), while others sustain that it is not always necessary to humidify the gases inspired during Helmet-CPAP (12), under the assumption that the upper airways can actively condition the inspired gases. However, the lack of gas conditioning for long term NIV determines de-epithelialization, reduced comfort, and lesions to the tracheal mucosa (13). These aspects are key factors inducing reduced tolerance to NIV with the consequent decrease of its application times (13, 14).

Absolute Humidity (AH) is the amount of water vapour contained in a litre of air. Relative Humidity (RH) is the rate of water vapour contained in a litre of air at a given temperature, with respect to the maximum capacity of saturation, and it's expressed in percentage. The American National Standards Institute (15) suggested, although not specifically for NIV, that an absolute humidity of 10 mg H_2O/L is the lowest level needed to minimize mucosal damages in the upper airways. The temperature, AH and RH inside the helmet during CPAP, are affected by several factors such as the gas flow, room temperature and the medical gas delivery systems (11). Delivery of Helmet-CPAP with continuous flow (as opposed to mechanical ventilators) improves the CO_2 washout inside the interface (16, 17). The delivered gas flow should always be greater than 50 L/min to obtain an effective removal of the CO_2 expired by the patient (16). Moreover, a high flow would contribute to maintaining a constant pressure inside the helmet at the preset PEEP level, during the entire respiratory cycle (16-17). In this setting, as two separate ports for gas inlet and outlet are used, Heat Moisture Exchange cannot be used.

While the flow generation with Venturi systems will drag part some environmental air humidity in the helmet, when only medical gases are used, humidity and temperature inside the helmet will be strictly affected by the AH present in the delivered oxygen and in the compressed air (9).

The purpose of this study was to investigate the level of Absolute Humidity, Relative Humidity and temperature of inspired gas, inside the helmet during high flow CPAP, performed on healthy volunteers, with and without active humidification. We hypothesized that comfort of patients would have been highest with active humidification when inspiratory gas temperature was close to ambient temperature.

Materials and methods

We designed an experimental study on six healthy adult subjects (3 males, 3 females), in laboratory setting. The study was conducted in two phases. During the first phase, 6 healthy volunteers underwent High flow CPAP cycles with helmet (Castar CPAP™ STARMED Intersurgical Ltd U.K) without any gas humidification. Latex-free helmets that includes a transparent rigid polyvinyl chloride tube sealed at the top and connected at the bottom by a rigid ring to a soft polyvinyl chloride collar were used. The gas flow was generated with a Venturi system (Intersurgical™ LTD, UK) connected to an oxygen pressured line (4 bar). The expiratory gas outlet was connected to a mechanical PEEP valve (Deaflux™, DEAS) with a setting of 5 cmH_2O. In the first phase of the protocol (no humidification), each subject was evaluated while receiving eight different combinations of gas flow (60 and 80 L/min) and FiO_2 (0.35-0.50-0.75-1), via the helmet for 10 minutes of stabilization, after which measurements were taken (see below). At the end of the 10 minutes, for each combination of GF and FiO_2, the temperature of the gas inside the helmet and the relative humidity values were recorded.

During the second phase (active humidification), the volunteers underwent to helmet CPAP cycles with the same combinations of gas flow and FiO_2, described above, with the addition of heated humidification system with heated wires tubes (HC 2000™ - MALL-

INCKODT DAR, active humidifier - Medtronic LTD, USA). Heated humidifier was used with *"Non Invasive"* software version, with 26° of temperature setting (lowest setting temperature to bring the average room temperature level closer) to the humidification chamber and 28° to the end of the heated wire tube (Helmet inlet of gas flow). Even in this second phase of the protocol, each subject was assessed after receiving eight different combinations of gas flow (60 and 80 L/min) and FiO2 (0.35-0.50-0.75-1), via the helmet for 10 minutes of stabilization, for 10 minutes of stabilization, after which measurements were taken. The detection of RH and temperatures were performed, as described in the previous phase of the study._All subjects were informed that the phase one were without humidification system and phase two with use of heated humidifier.

Measurements

A capacitive hygrometer (Tacklife HM01™ Classic Hygrometer Digital Humidity Meter) was used to measure temperature and relative humidity inside the helmet (range for relative humidity 1% to 100%). This system has a very low dead time (2.5 seconds for a quick reading) and good accuracy (±3% RH - manufacturer's data) and, with an error of 0.5°C and no variations with time. After each measurement, the tip of the capacitive hygrometer was dried to avoid any possible measurement error. The absolute humidity was computed using the following equation (11): absolute humidity = relative humidity × (0.0387 × T^2 - 0.6066 × T + 13.776), where T is the temperature (in °C). For all the measurements the probe sampling point was positioned near the nose-mouth intersection of the subjects, even if the temperature and relative humidity inside the helmet were previously found to be similar in the different positions within the helmet (11). The experimental set up is shown in figure 1. Subjective comfort was evaluated, after the ending of the second phase, using a visual analogue scale rated from zero (least comfortable) to 10 (most comfortable). Participants were asked to score their response to the question: *'How do you feel during the first and the second condition?'*. All the measurements related to phase 1 and 2 of the study and to the administration of the comfort scales were carried out by the same operator.

Data analysis

Data were collected with Excel Microsoft software (Microsoft Corporation, Redmond, Washington). Values are expressed as mean ± standard deviation for parametric, or median (interquartile range) for nonparametric distributions. Data were analyzed with repeated measures analysis of variance with the Apple version of IBM SPSS 21.0 statistical software. Statistically significance threshold was set to $P<0.05$.

Ethical considerations

This study was conducted according to the ethical standards laid down in the 1964 Declaration of Helsinki. The study was approved by the Ethical Committee of our institution (Università degli Studi di Milano-Bicocca). In accordance with national regulations, written informed consent was obtained from each enrolled subject.

Results

The six healthy volunteers had an average weight of 69.7±15.2 Kgs, height of 170.3±11.5 cm (BMI of 20.3±3.2). During CPAP delivered by helmet, the measured room temperature ranged between 22°C and 22.7°C and the AH ranged between 6.79 and 7 mg H_20/L (RH=35-36%). The temperature of pressurized oxygen ranged between 20 and 21°C with an AH equal to 0 mg H_20/L (RH=0%). In the first phase, without heated humidification of the inspired gases, with a Gas Flow equal to 60 L/min the mean temperature with the four different FiO_2 tested (0.35, 0.5, 0.7 and 1) was 25.8±0.9°, the mean AH was equal to 5.9±2.1 mg H_2O/L and the mean RH was equal to 22.9±8.8%. With a Gas Flow equal to 80 L/min the mean temperature with the four different FiO_2 tested (0.35, 0.5, 0.7 and 1) was 26.0±1.1°, the mean AH was equal to 5.2±1.8 mg H_2O/L and the mean RH was equal to 21.9±6.7%.

In the second phase with heated humidification of the inspired gases, with a Gas Flow equal to 60 L/min the mean temperature with the four different FiO_2 tested (0.35, 0.5, 0.7 and 1) was 29.0±0.1°,

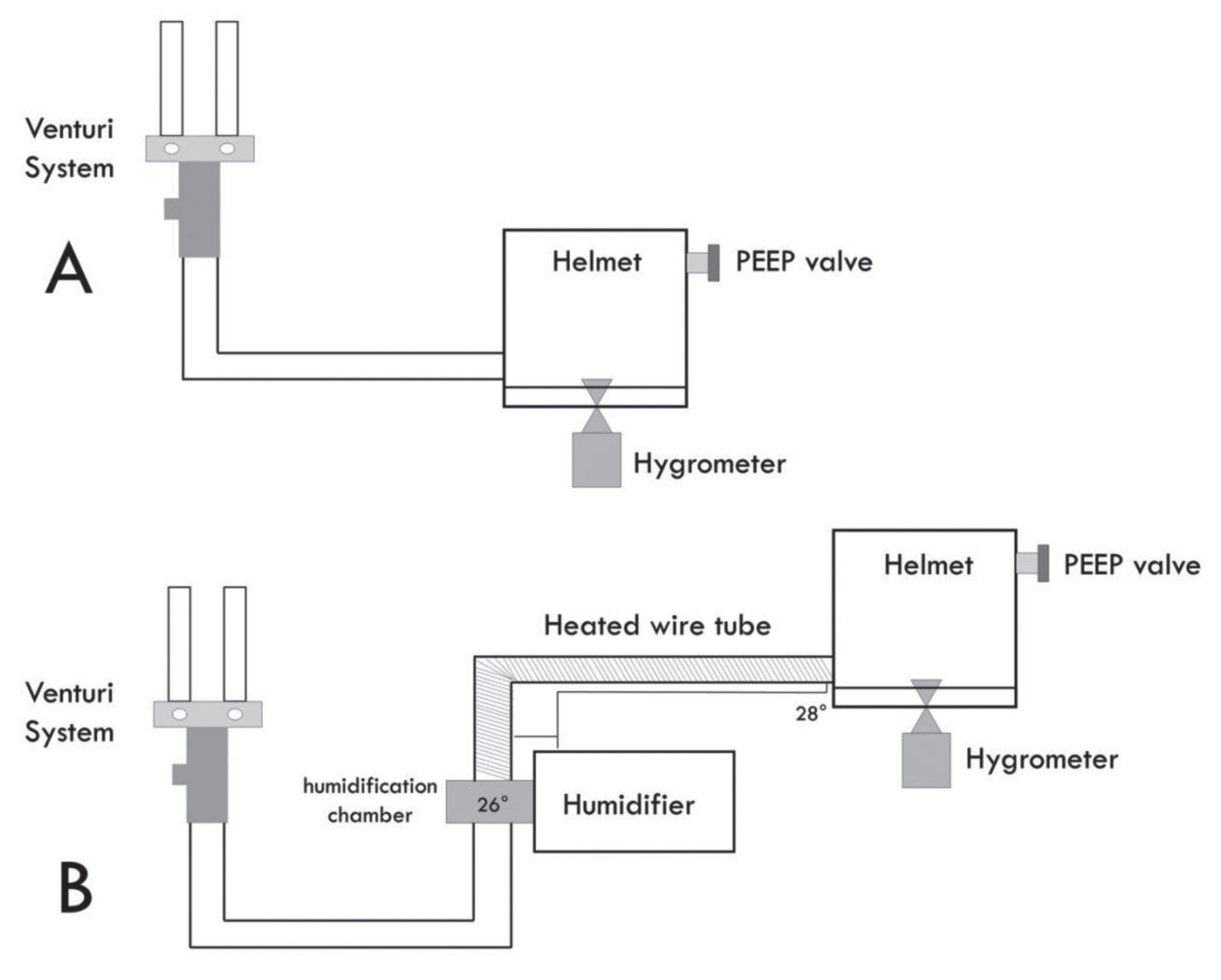

Figure 1. Experimental setup
Legend: Set-up without (A) and with (B) heated wire humidification system

the mean AH was equal to 15.0±3.5 mg H_2O/L and the mean RH was equal to 52.1±3.5%. With a Gas Flow equal to 80 L/min the mean temperature with the four different FiO_2 tested (0.35, 0.5, 0.7 and 1) was 29.0±0.2°, the mean AH was equal to 14.3±1.0 mg H_2O/L and the mean RH was equal to 49.1±3.4%. In none of the investigated phases condensation occurred inside the element. Table 1 shows the data related to the two phases of the study, split for each condition of Gas Flow and FiO_2 investigated. As shown in table 1, without heated humidification, the set FiO_2 determines statistically significant differences on the AH and the RH ($P < 0.001$) inside the helmet. The set flow (60 L/min vs. 80 L/min) does not determine statistically significant changes in temperature, AH and RH.

After the ending of the second phase, subjective comfort was evaluated. The median comfort scale value was 6 (IQR: 5.25-6.75) for the phase 1 (no humidification) vs 8 (IQR : 7.25-8.0 - $p<0.01$) for the phase 2 (with heated humidification).

Discussion

The main results of this paper are that: during the Helmet-CPAP with high flow, while the use of medi-

Table 1. Absolute humidity, with and without active humidification, in the investigated steps

		Without heated humidification		With heated humidication	
FiO_2		Gas Flow 60 L/min	Gas Flow 80 L/min	Gas Flow 60 L/min	Gas Flow 80 L/min
0.35	Temp°	26.3±0.6	26.5±0.8	29.0±0.0	28.9±0.2
	RH (%)	30.8±8.5§	28.5±5.7§	54.3±4.4	52.0±3.2
	AH (mgH_2O/L)	7.7±2.3*	7.1±1.5	15.7±1.4	14.9±0.9
0.5	Temp°	26.0±1.2	26.0±1.3	29.0±0.1	29.0±0.2
	RH (%)	26.2±4.9§	25.0±1.0§	52.0±3.6	54.5±1.1
	AH (mgH_2O/L)	6.6±1.6*	5.9±0.2	14.9±1.0	14.1±0.9
0.7	Temp°	25.5±0.9	25.8±1.3	28.9±0.2	29.0±0.0
	RH (%)	20.1±2.4§	21.0±2.8§	51.0±3.1	51.3±1.5
	AH (mgH_2O/L)	4.9±0.8*	5.0±0.9	14.6±0.1	14.7±0.4
1	Temp°	25.4±0.7	25.5±1.0	26.0±0.1	29.0±0.0
	RH (%)	14.8±2.3§	13.0±2.2§	54.2±3.0	49.0±5.2
	AH (mgH_2O/L)	3.6±0.6*	3.1±0.5	13.4±1.0	14.1±1.5

Legend :
Temp°: temperature, RH : relative Humidity, AH : Absolute Humidity
*repeated measures analysis of variance (rm ANOVA) = $p<0.001$
§ repeated measures analysis of variance (rm ANOVA) = $p<0.001$

cal gases only (FiO2 1, in our experiment), or venture system, the gas humidification is far below the recommended 10 mg H_2O/l value, the use of an heated humidifier set allows adequate humidification without any condensation (9,15). The lack of humidification using only medical gases is not surprising. However, also with a Venturi system in a room with a temperature between 22.0°C and 22.7°C and a RH of 40%, the AH inside the Helmet ranged between 6.79 and 7.0 mg H_20/L (RH=35-36%). This indicates that the rate of humidity dragged with air from the external environment does not allow to reach the value of 10 mg H_2O/L inside the helmet.

Chiumello and colleagues (11) underlined the possibility of using humidifiers with invasive ventilation set-ups upon applying a high-flow Helmet-CPAP. The only contraindication registered was the formation of condensation inside the interface (*the so called "fog effect").* While this situation can resolve the problem of the amount of humidity inspired by the patient, on the other hand it might reduce patient's comfort and consequently his/her tolerance to the treatment (10), simulating condition of a day with a temperature of 37° and an RH greater than 80%. To prevent the condensation, the temperature of the humidifying chamber must be set at a value below the mean temperature recorded inside the helmet (25.8±0.9°, as showed in our study). The heated humidifier systems work in optimal conditions when the temperature of the gases increases from the humidification chamber to patient (generally with a gradient of 2°). Therefore, we may assume that the ideal set-up temperature should range between 24°-26°C for the humidification chamber and 26-28° for the Helmet inlet point. However, many of the humidifiers currently used in intensive care units, have fixed temperature settings in NIV configuration. In many cases (for example Fisher & Paykel MR 850® and Hamilton H900®) the temperature set for the humidification chamber is equal to 31° and cannot be modified. This temperature is higher than the one detected inside the helmet in our study. Such a set-up would cause condensation to form inside the helmet. For this reason, it would be important that heated humidifiers had a NIV set-up with temperatures that can be chosen and set by the nurses (manual modes). Unlike what was detected in phase one of the study, the use of an heated humidifier (26° at the humidification chamber), allows an average delivery of about 15 mg H_2O/L, regardless of: the FiO_2 settled, the gas supply (Venturi or compressed gas only - FiO_2 = 1) and imposed gas flow (60 L/min vs. 80 L/min).

On the contrary, without heated humidifier, with a relatively low FiO_2 (0.35) and Venturi system the combination of AH drawn from the ambient air and the AH exhaled by the patient, reached the suggested 10 mg H_2O/L. This consideration is important in case of short application cycles of Helmet-CPAP (e.g.: acute pulmonary oedema or postoperative treatment for major surgery) (18). With FiO_2 <0.5, the costs and complexity imposed by heated humidifier might not be worth in respect to the added benefit. Instead, in the case of high FiO_2 (especially if FIO_2 is 1), when only medical gases are used to flush the helmet, the moisture exhaled by the patient is not enough to recondition the inspired gases. A survey performed by Crimi and colleagues (14) has shown that in Italy and Spain (countries that most use the helmet for the continuous high flow CPAP), only in 50% of cases (especially in intensive care units), the gas source are usually flowmeters powered by oxygen and medical compressed air (2). In critically respiratory patients (requiring high FiO_2 and prolonged application time) the use of heated humidification could improve the patient's comfort, the mobilization of the airways secretions, and reduce the sensation of dryness and thirst (19). Ueta and colleagues (10) provide evidence that, during clinical delivery of inspiratory gas through helmet NIV, humidification at ambient temperature is desirable for patient comfort, as well as for preventing mucosal damage.

Conclusions

In the absence of active humidification during high flow Helmet-CPAP, under-humidification will occur (11). The problem is more relevant with Venturi system at an FiO_2 greater than 50% and when only medical gases are employed. The modern active heated humidifiers, through NIV software, are able to deliver an absolute humidity above 10 mgH_2O/L. While these finds need to be confirmed on a large group of patients, in our exploratory study, the use of an active humidifier set at 26°C, with a temperature gradient increasing towards the patient (+ 2°/28° at the helmet gas inlet port) improves absolute and relative humidity inside the helmet, while avoiding under-humidification in healthy subjects.

Limitations of the study

First this is a study conducted on a small number of healthy volunteers, we cannot exclude that in patients, presenting with hyperthermia and/or increased minute ventilation the results would have been different. Chiumello and colleagues (11) suggest that the humidity of the expired gases mixed with the fresh gases was similar in patients with acute respiratory failure and healthy individuals during Helmet CPAP. Primiano and colleagues (20) found no difference in the temperature and humidity of the expired gases between patients with cystic fibrosis during Mask CPAP and healthy individuals breathing ambient air. Second, global patient comfort was also evaluated only over a short period. Third, only one type of helmet was used. However, similar to the issue carbon dioxide rebreathing, the volume of the helmet should not directly influence the final level of humidity of the medical gases but only the rate at which the level is reached.

Finally, expectations related to the experimental protocol could have influenced subjects' comfort level during the study.

The present study was performed at the General Intensive Care Unit, Emergency Department and Intensive Care, San Gerardo Hospital - ASST Monza, Via Pergolesi 33 - Monza (MB), Milan-Bicocca University - Italy.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Patel BK, Wolfe KS, Pohlman AS, Hall JB, Kress JP. Effect of Noninvasive Ventilation Delivered by Helmet vs Face Mask on the Rate of Endotracheal Intubation in Patients With Acute Respiratory Distress Syndrome: A Randomized Clinical Trial. JAMA 2016; 315: 2435-2441.
2. Bellani G, Laffey JG, Pham T, Madotto F, Fan E, Brochard L, et al. Noninvasive Ventilation of Patients with Acute Respiratory Distress Syndrome. Insights from the LUNG SAFE Study. Am J Respir Crit Care Med 2017; 195: 67-77.
3. Foti G, Sangalli F, Berra L, Sironi S, Cazzaniga M, Rossi GP, et al. Is helmet CPAP first line pre-hospital treatment of presumed severe acute pulmonary edema? Int Care Med 2009; 35: 656-662.
4. Ducros L, Logeart D, Vicaut E, Henry P, Plaisance P, Collet JP, et al. CPAP for acute cardiogenic pulmonary oedema from out-of-hospital to cardiac intensive care unit: a randomised multicentre study. Int Care Med 2011; 37: 1501-1509.
5. Principi T, Pantanetti S, Catani F, Elisei D, Gabbanelli V, Pelaia P, et al. Noninvasive continuous positive airway pressure delivered by helmet in hematological malignancy patients with hypoxemic acute respiratory failure. Int Care Med 2009; 30: 147-150.
6. Lucchini A, Valsecchi D, Elli S, Doni V, Corsaro P, Tundo P, et al. The comfort of patients ventilated with the Helmet Bundle. Assist Inferm Ric 2010; 29: 174-83.
7. Lucchini A, De Felippis C, Bambi S. Respiratory and Ventilatory Assessment. In: Nursing in Critical Care Setting. Springer, Cham; 2018: 59-105.
8. Cavaliere F, Conti G, Costa R, Spinazzola G, Proietti R, Sciuto A, et al. Exposure to noise during continuous positive airway pressure: influence of interfaces and delivery systems. Acta Anaesthesiol Scand 2008; 52: 52-6.
9. American Association for Respiratory Care, Restrepo RD, Walsh BK. Humidification during invasive and noninvasive mechanical ventilation: 2012. Resp Care 2012; 57: 782-788.
10. Ueta K, Tomita T, Uchiyama A, Ohta N, Iguchi N, Goto Y, et al. Influence of humidification on comfort during noninvasive ventilation with a helmet. Resp Care 2013; 58: 798-804.
11. Chiumello D, Chierichetti M, Tallarini F, Cozzi P, Cressoni M, Polli F, et al. Effect of a heated humidifier during continuous positive airway pressure delivered by a helmet. Crit Care 2008; 12: R55.
12. Nava S, Navalesi P, Gregoretti C. Interfaces and humidification for noninvasive mechanical ventilation. Resp Care 2009; 54: 71-84.
13. Esquinas Rodriguez AM, Nava S, Scala R. Humidification and difficult endotracheal intubation in failure of noninvasive mechanical ventilation (NIV). Preliminary results. Am J Respir Crit Care Med 2008; 177: A644.
14. Crimi C, Noto A, Princi P, Esquinas A, Nava S. A European survey of noninvasive ventilation practices. Eur Resp J 2010; 36: 362-9.
15. American National Standards Institute; American Society of Anesthesiologists. Standard for humidifiers and nebulizers for medical use. ANSI 1979; Z79: 9.
16. Patroniti N, Foti G, Manfio A, Coppo A, Bellani G, Pesenti A. Head helmet versus face mask for non-invasive continuous positive airway pressure: a physiological study. Intensive Care Med 2003; 29: 1680-1687.
17. Taccone P, Hess D, Caironi P, Bigatello LM. Continuous positive airway pressure delivered with a "helmet": effects on carbon dioxide rebreathing. Crit Care Med 2004; 32: 2090-2096.
18. Ferreyra GP, Baussano I, Squadrone V, Richiardi L, Marchiaro G, Del Sorbo L, et al. Continuous positive airway pressure for treatment of respiratory complications after abdominal surgery: a systematic review and meta-analysis. Ann Surg 2008; 247: 617-626.
19. Dimech A. Critical care patients' experience of the helmet continuous positive airway pressure. Nurs in Crit Care 2012; 17: 36-43.
20. Primiano FP, Jr, Saidel GM, Montague FW, Jr, Kruse KL, Green CG, Horowitz JG. Water vapour and temperature dynamics in the upper airways of normal and CF subjects. Eur Respir J 1988; 1: 407-414.

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Original article: Instruments and competences to improve patients' outcome

Construct validity of the Amsterdam Preoperative Anxiety and Information Scale (Italian Version) in women undergoing breast biopsy: a brief research report

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Abstract. The goal of this paper was to test Construct Validity of the Amsterdam Preoperative Anxiety and Information Scale (Italian Version) in women undergoing Breast Biopsy. To answer this purpose we have utilized Exploratory Factor Analysis (EFA) in a sample of 80 women undergoing Breast Biopsy at the Breast Unit of the Careggi University Hospital in Florence from January to February 2015. Overall the results support the construct validity of the Italian version of the APAIS for the population of women undergoing Breast Biopsy suggesting that the Italian version of APAIS can be useful to detect this clinically very relevant dimension. (www.actabiomedica.it)

Key words: anxiety, psycho-oncology, assessment

The Amsterdam Preoperative Anxiety and Information Scale (APAIS) is a self-report questionnaire composed of six items that was developed and validated in surgical settings (1), in order to evaluate the patient's preoperative anxiety level. It is a six-items 5-points Likert self-report questionnaire for preoperative use, consisting of two scales including a 4-items Anxiety Scale and a 2-items Need-for-Information Scale. All items score from 1 to 5, and therefore the score range is 4-20 for the Anxiety scale and 2-10 for the Need-for-Information scale: the higher the score, the higher the level of Anxiety and Information requirement (1, 2). The Italian version was validated in a group of patients listed for elective surgery (2) which excluded procedures that the authors supposed to be characterized by very higher anxiety levels. In our study patient undergoing to Breast Biopsy have anxiety levels comparable to the Bonanno's study sample. Here we extend the construct validity of the *Amsterdam Preoperative Anxiety and Information Scale* (APAIS) (1, 2) to patients undergoing to Breast Biopsy (3). We have tested the construct validity of the Italian version of APAIS with Exploratory Factor Analysis (EFA) in a sample of 80 women undergoing Breast Biopsy at the Breast Unit of the Careggi University Hospital in Florence from January to February 2015. We expected to confirm the bi-dimensional structure of the Scale including Anxiety and Need-for-Information as subdimensions (2). The approval of the local ethics committees was obtained with acceptance protocol number 2014/0025902 Ref. OSS.14.129.

We recruited 80 patients of the Careggi University Hospital of Florence undergoing Breast Biopsy. The participants reported a mean age of 47.6±12,3 years. After written informed consent was obtained, women were asked to complete a tools battery which included the Italian version APAIS (2). Data were analyzed using the statistical software Package for Social Science IBM SPSS 25. We derived the descriptive statistics of the data [Total medium score obtained with the

Table 1. Rotated factor model

APAIS ITEMS	Anxiety	Need of Information
ITEM-1	,839	
ITEM-2	,844	
ITEM-4	,604	
ITEM-5	,660	
ITEM-3		,746
ITEM-6		,913

APAIS instrument (*APAIS_Total*)= 11,2±3.2, subscale of APAIS devoted to explore dimension of anxiety expression (*APAIS_Anxiety*)= 7.1±2.2 and subscale of APAIS devoted to explore dimension of need to information about medical procedure (*APAIS_Need-for-Information)*= 4.0±1.6]. The Pearson's Correlation Matrix; we evaluated the Keiser Meyer Olkin index (KMO=0.70) and we performed Bartlett's sphericity test, which was significant (X^2= 157.85 df 15, p<0.01). The data were therefore found to be suitable for the identification of the factors with EFA. We therefore performed EFA using the Principal Components Analysis with subsequent Varimax rotation (Table 1): we confirmed the factorial structure of APAIS, with two sub-dimensions which explained 68% of the variance; the APAIS_Anxiety subscale explained 37.5% of the Variance (items 1,2,4 and 5, with eigenvalue 2.87) and the APAIS_Need-for-Information scale explained the 30.9% (items 3 and 6, with eigenvalue 1.23). Table 1 shows that all the items reported high saturation levels. The total Cronbach's α =.76 was considered sufficient to establish the internal coherence of the Scale (2). Overall the results support the construct validity of the Italian version of the APAIS for the population of women undergoing Breast Biopsy. In line with the original Dutch version of the Scale (1) and with the Italian validated version (2), our results confirmed the bi-factorial structure of the tool, suggesting that the Italian version of APAIS can be useful to detect this clinically very relevant dimension (3) in the population of women undergoing Breast Biopsy.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Moerman N, Van Dam FS, Muller MJ, Oosting H. The Amsterdam Preoperative Anxiety and Information Scale (APAIS). Anesth Analg 1996; 82: 445-51.
2. Buonanno P, Laiola A, Palumbo C, Spinelli G. Terminiello, V, Servillo G. Italian validation of the Amsterdam Preoperative Anxiety and Information Scale. Minerva anestesiologica 2017; 83(7): 705-711.
3. Miraglia Raineri A, Pelagotti S, Lauro Grotto R. Pre-operative anxiety and breast biopsy: A systematic review of empirical studies. BPA-Applied Psychology Bulletin (Bollettino di Psicologia Applicata), 2018; 66(282).

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Caring efficacy: nurses' perceptions and relationships with work-related factors

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Abstract. *Background and aim of the work*: Caring nursing practice is central aspect of quality of services. It is important to assess nurses' caring experience in terms of perceived caring efficacy to make them aware of their outcomes and improve their strategies. The aims of the study was to analyze: (1) the caring efficacy level, (2) differences between the caring efficacy levels concerning positive and negative work attitudes, (3) individual and organizational predictors of perceived caring efficacy. *Methods:* 200 nurses were recruited from a University Hospital in Southern Italy. A self-reported questionnaire was administered. T-test was performed to analyze differences between caring efficacy levels concerning outcomes variables. Regression analysis was carried out to examine how some work factors were related to perceived caring efficacy. *Results:* Participants referred high confidence to care (CC) for 55%, and low doubts and concerns (DC) for 72.9%. Nurses who had low DC had lower emotional exhaustion than nurses with moderate DC. Nurses with low DC had higher job satisfaction than nurses with high DC. Regarding CC levels, there were no differences between mean values for both attitudes at work. The emotional dissonance significantly predicted DC and CC. The supervisor support had a negative link with emotional dissonance, which in turn was negatively related to CC. *Conclusions:* Education and training should be addressed to reduce doubts and concerns to care and improve the ability to manage emotions. A work environment that value caring and give support in managing emotions can reduce emotional dissonance and improve caring self-efficacy. (www.actabiomedica.it)

Key words: caring efficacy, emotional dissonance, emotional job demands, supervisor support, nursing

Introduction

Caring practice is central to nursing, which is based on developing authentic relationships between nurses, patients, and their families (1). Caring is a main predictor of patients' physical and emotional health outcomes (2, 3) and it is a central aspect of quality of services (4). Remarkable effort has been done by scholars to describe caring and its processes (5-8). Antecedents of the caring process include nurse's ethics foundations to care and working in a context that promotes caring. Caring can improve patients' satisfaction (9) and enhance a mental well-being and satisfaction for nurses (6, 10).

Background

The essence of caring involves nurses' thoughts and behaviors of love, compassion (empathy), respect, and availability in approaching with patients (11). Previous research showed that caring is a motivational source influencing nurses' recruitment and retention (12) and it is a main indicator of patients' satisfaction (9, 13). Knowledge, attitude and skills of nurses are the basis of nurse caring behaviors (14). Nevertheless, nurses' perceived caring efficacy can be affected by individual and organizational factors (e.g., emotional job demand, emotional dissonance, and supervisor support) and can influence their job satisfaction and well-being degree.

Emotional job demand

Emotional job demands (15) characterize nurses' working experience because they are continuously exposed to difficult working contexts (16) in which they have to manage patients' critical conditions or claims of patients and their relatives, while trying to provide high quality services. According to Job Demands-Resources (JD-R) model, emotional job demands are considered among the most important ones (e.g., physical, psychological, and emotional) (17). They can reduce the work-related well-being of nurses and exhausting their mental and physical resources (18). In this scenario, the nature of the caring relationship with patient can be compromised, thus affecting nurses' perceived caring efficacy.

Emotional dissonance

Nurses have to understand and interpret how patients feel and to show empathy to be effective in their caring practice (19). On the other hand, nurses have to manage their own emotions while maintaining high quality of care to patient. This aspect of caring is called 'emotional labor' (20). It requires nurse to display or suppress feeling to sustain external expression suitable for the job role and that produces good state of mind in patients. Emotional labor can be emotionally demanding (21) especially when there is a conflict between felt and required emotions. This discrepancy is named 'emotional dissonance' (22), which can threaten nurses' wellbeing by leading to emotional exhaustion and physical ill-health (23). Research showed that in nursing emotional labor and emotional dissonance occur more frequently because of the suffering, vulnerability, and negative health outcomes of patients (24). These experiences can affect nurses' wellbeing and their caring relationship with patients (25). As caring is defined as a mental, emotional, and physical effort to look after, answer to, and support patients (26), we can expect that emotional dissonance affects perceived caring efficacy.

Supervisor support

Emotional support is characterized by the availability of close and confiding relationships within the working context (e.g., supervisors and colleagues) and it can be mostly beneficial in jobs that are emotionally challenging (27). According to JD-R model, emotional supervisor support can play a key role as a resource to mitigate the effects of stressors on physical and mental health (28). Research has highlighted that support from direct supervisor can safeguard healthcare professionals from the negative impact of emotional demands (29). This may be because the ability to reveal one's own work-related difficulties to others without fear of judgement may act as a resource that helps nurses manage the emotional demands occurring during caring relationships with patient (30). Thus, we can hypothesize that supervisor emotional support can help nurses to reduce experiences of emotional dissonance during interactions with patients, thus increasing caring efficacy.

Caring efficacy and individual outcomes

Caring has been defined as a main characteristic of nursing (31, 32). It is through actions of caring that nurses find professional identity and increase their well-being (33). At the organizational level, nurses who are able to express caring in their own working context perceive that their values as professionals are congruent with those of the organization. This perceived congruence may enhance work motivation (34) and job satisfaction, and reduce stress and burnout in nurses (10). Recently, research is showing much attention on topics such as compassion fatigue and compassion satisfaction as two important contrasting aspect of the caring experience with patients (35). Previous research reported that nurses who showed confidence in their ability to express caring referred positive job satisfaction. In addition, it has been found a positive correlation between caring efficacy and job satisfaction (36). On the contrary, the inability to express caring and find meaning and value in their work can contribute to decrease job satisfaction (37) and augment burnout (38). For this reason, we expect that caring efficacy is correlated to both job satisfaction and emotional exhaustion, and that the perceived caring efficacy degree can condition the level of the two working outcomes.

Thus, it seems to be important to assess nurses' caring experience in terms of perceived caring efficacy to make them aware of their caring outcomes and improve their care strategies (39). Several Italian studies analyzed human caring in nurses. However, most of them referred to nurses' and patients' perceptions of caring behavior (42). At the best of our knowledge, there is no study considering self-reported caring competence of nurses.

Aims

This study aims to analyze: (a) the caring efficacy level (e.g., low, moderate, high) perceived by nurses, (b) possible differences between the caring efficacy levels concerning nurses' positive and negative work attitudes (i.e., job satisfaction and emotional exhaustion), and (c) how individual and organizational predictors such as emotional dissonance, emotional job demand, and supervisor support are associated to perceived caring efficacy.

Methods

Study design, participants and procedure

A cross-sectional study design was used involving 200 nurses from different wards from an Academic hospital in Southern Italy. An inclusion criterion was to be registered nurses who work full-time or part-time in the hospital. As nurse managers do not have direct relationships with patients and it is not possible to measure their caring efficacy, they were excluded from the study. Formal approval to recruit nurses was obtained from the health manager of the hospital. After a formal agreement, nurses were recruited directly in their units. Participation was voluntary and all nurses were informed about the purpose of the study. A self-reported structured questionnaire was administered to the nurses during their working hours. They completed the questionnaire and returned it to locked boxes accessible only to the researchers. Data were collected from February to April 2019. A total of 140 entirely completed questionnaires (70% response rate) were usable to data analysis.

Ethical statements

The study was approved by the Independent Ethic Committee of the Azienda-Ospedaliero Universitaria of Cagliari, Italy. The study observes the ethical principles of the Declaration of Helsinki and the General Data Protection Regulation 679/2016 on privacy. Nurses were informed that they could leave the research at any time without consequences for their job. To preserve anonymity, informed consent was given when the nurses returned their completed questionnaire.

Instruments

Caring Efficacy Scale. The Italian version by Aviles et al. (39) of the original Caring Efficacy Scale by Coates (43) was used to evaluate perceived ability to develop caring relationships with patients. The Italian version includes 17 items distributed in two subdimensions: doubts and concerns to care for patients (10 items) and confidence to care (7 items). Nurses indicated their level of agree/disagree to the items by following a 6-point response Likert- scale ranging from strongly disagree (−3) to strongly agree (+3). To uniform the data and better analyze mean values of the subscales, the Likert scale values were changed from -3 to +3 into 1 to 6.

Emotional job demands. Three high-loading items (.74 to .83) were selected from the Italian version of the Emotional Job Demand Scale (44, 45). A sample item was "My work is emotionally demanding". Items were assessed using a 4-point scale ranging from 1 (never) to 4 (always).

Emotional dissonance. Four items of the scale by Zapf et al. (46) were used to measure how often nurses usually repress their emotions to the patients. A four-point scale (from 1 = disagree to 4 = agree) was used to answer each item. A sample item was "The emotions I show to appear professional do not correspond to what I actually feel".

Supervisor emotional support. Four items from the perceived organizational support (POS) scale by Eisenberger et al. (47) were used to measure nurses' perception of supervisor emotional support. The items were adapted in a similar way as described by Rhoades et al (48). A sample item was "My direct supervisor help me to manage my emotions with patients. The survey items were measured using a five-point Likert scale ranging from 1 ('Strongly disagree') to 5 ('Strongly agree').

Emotional exhaustion. Three high-loading items (.85 to .91) were used to measure emotional exhaustion from the Italian version of the Maslach Burnout Inventory (49, 50). A sample item was "I feel tired when I weak up on the morning and I have to face a new working day". Items were rated using a 7-point scale ranging from 0 (never) to 6 (daily).

Job satisfaction. Three items from Cammann, Fichman, Jenkins, & Klesh's scale (51) were used to measure satisfaction with nurses' job. A sample item was "Overall, I am satisfied with my job". A five-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree) was used to answer each item.

Data analysis

Data analysis was carried out via SPSS 20.0 program (SPSS: An IBM Company, Chicago, IL, USA). Descriptive analysis (i.e., frequencies, means, and standard deviations) was performed to examine the sample characteristics. Cronbach's Alpha was performed to analyze the reliability of the used measures. T-test was performed to analyze possible differences between caring efficacy levels concerning the outcome variables (job satisfaction and emotional exhaustion). Pearson's correlation was carried out to analyze the association between variables and linear regression analysis by using Enter method was performed to examine how emotional job demand, emotional dissonance, and supervisor support were related to perceived caring efficacy. Possible mediating effects were tested via PROCESS macro with Model 4 (simple mediation) (52). Bootstrapping procedure was performed to measure indirect effects with confidence intervals (95%) calculated with 5000 bias-corrected bootstrapped random resamples of the data with replacement (53).

Results

The first aim of the study was to analyze the nurses' perceived level (low, moderate, high) of caring efficacy. The findings showed that participants referred having high confidence to care (CC) for 55% (n=77/140), moderate CC for 43.6% (n=61/140), and low CC for 1.4% (n=2/140). Nurses claimed to have moderate doubts and concerns (DC) for 27.1% (n=38/140), and low DC for 72.9% (n=102/140). No one referred having high DC.

The second aim of the study was to examine possible differences in the levels of caring efficacy regarding nurses' positive and negative work attitudes (job satisfaction and emotional exhaustion). T-test analysis showed that nurses with low DC to care referred having lower emotional exhaustion (M=2.47) than nurses with moderate DC (M=3.18) (t=-2.34, 95% CI=-1.32--.10, p<.05). Similarly, nurses with low DC to care had higher job satisfaction (M=3.06) than nurses with high DC (M=2.78), but this difference was marginally significant (t=1.80, 95% CI=-.03-.59, p=.08). Regarding confidence to care levels, T-test showed no significant differences between mean values for both the attitudes at work (moderate CC [emotional exhaustion M=2.91], high CC [emotional exhaustion M=2.47] p=.09; moderate CC [job satisfaction M=3.01], high CC [job satisfaction M=2.98], p=.79).

The third aim of the study was to analyze how as emotional dissonance, emotional job demand, and supervisor support were associated to the sub-dimension of the caring efficacy. Means, standard deviations, and correlation analysis for the studied variables are shown in Table 1. Regression analysis showed that emotional dissonance is the only one predictor significantly and positively associated with DC to care (β =.17, p<.05), and negatively associated with confidence to care (β

Table 1. Means, Standard Deviations and Pearson's correlation for the study variables (N =140)

Variable	M	SD	1	2	3	4	5	6	7
1. Confidence to care	4.85	.689	(.62)						
2. Doubts and concerns	2.51	.782	-.321**	(.72)					
3. Emotional dissonance	1.88	.727	-.212*	.182*	(.75)				
4. Emotional job demand	3.05	.598	.110	-.018	.125	(.66)			
5. Emotional supervisor support	2.46	1.211	-.099	-.098	-.182*	-.060	(.95)		
6. Job satisfaction	2.98	.667	-.012	-.164*	-.044	.090	.126	(.75)	
7. Emotional exhaustion	2.67	1.495	-.134	.217*	.384**	.159	-.116	-.289**	(.87)

Note. **p<0.01, *p≤0.05 (2-tailed). Cronbach's Alpha is shown in parenthesis

=-.26, p<.01). Both emotional job demand and supervisor support did not contribute to explain variance in nurses' DC and confidence to care (see Table 2 for all the results). Nevertheless, the results showed that supervisor support had a negative link with emotional dissonance (β = -.12, p<.05) which in turn was negatively related to confidence to care. Table 3 shows the results from mediation analysis. The emotional dissonance is a mediator in the relationship between supervisor support and confidence to care even its effect is marginally significant (indirect effect: γ = 03, bootstrap CI = .005-.08; Table 3).

Discussion

The results highlight that nurses of the study refer having a positive caring orientation, in agreement with Amendolair's (36) findings. The most part of them have high confidence to care and low doubts and

Table 2. Regression analysis for the relationships between emotional dissonance, emotional supervisor support and emotional job demand on both confidence to care and doubts and concerns (N = 140)

		Unstandardized Coefficients		Standardized Coefficients		
Dependent variable	Predictor	B	Std. Error	Beta	t	Sig.
Confidence to care	(Constant)	5.041	.350		14.405	.000
	Emotional dissonance	-.243	.080	-.256	-3.036	.003
	Emotional supervisor support	-.084	.048	-.147	-1.756	.081
	Emotional job demand	.154	.095	.134	1.612	.109
Doubts and concerns	(Constant)	2.441	.408		5.988	.000
	Emotional supervisor support	-.048	.056	-.074	-.857	.393
	Emotional job demand	-.057	.111	-.044	-.515	.608
	Emotional dissonance	.188	.093	.174	2.019	.045

Table 3. Mediating role of emotional dissonance (N =140)

Model	Path coefficient	SE	Bias corrected bootstrap 95% CI	
			Lower limit	Upper limit
Emotional support on emotional dissonance	-12*	.05	-.22	-.02
Emotional dissonance on confidence to care	-.23**	.08	-.39	-.07
Total effect of emotional support on confidence to care	-.06	.05	-.16	.03
Direct effect of emotional support on confidence to care	-.09	.05	-.19	.003
Indirect effect of emotional support on confidence to care through emotional dissonance	.03†	.02	.005	.08

Note. *p<.05, **p<.01, †p=.05.

concerns. Moreover, nurses with moderate doubts and concerns about their ability to relate to and care for patients seem to be less satisfied with their job and more emotionally exhausted than nurses with low doubts and concerns. Vice versa, nurses with high confidence to provide care for patients do not differ in their work attitudes from nurses with moderate confidence to care. This is supported also by the correlation analysis, which highlighted a positive association between doubts and concerns with emotional exhaustion and a negative association with job satisfaction. These findings are in agreement with Kalisch et al. (37) and Peery (38) findings. Nevertheless, no association was found between confidence to care and job satisfaction. This result differs from Amendolair (36). It is probable that this positive sub-dimension of caring efficacy exercises a minimal impact on nurses' work attitudes because they are likely more able to cope with job stressors (e.g., (25)). However, a reason of this difference may be attributable to the fact that she used the caring efficacy scale as mono-dimensional, while we used it as a two-factor tool (39).

The main factor negatively associated with caring efficacy for the two sub-dimensions is emotional dissonance, but there is no direct association between perceived caring efficacy with both emotional job demand and supervisor support. It is likely that emotional job demand does not play a role on a nurse's perception of caring efficacy, but only on his/her real caring behavior, as one of the main caring antecedents is having needed time to care (54, 55). However, the results show that supervisor support indirectly affects caring efficacy through mediation of emotional dissonance; the more support from the supervisor support the less is emotional dissonance perceived by the nurses, which in turn is related to high nurse's perceived caring efficacy. Thus, supervisor support acts as a resource that helps nurses to give appropriate emotional response during caring relationships with patients (29, 30), thus increasing their caring efficacy.

Practical implications

This study has practical implication for nurse managers. They should foster work contexts promoting supervisor support for nurses and increase nurses' competencies in caring. Education and training should be addressed to reduce doubts and concerns to care and improve the ability to manage emotions during the caring relationship with patients and give appropriate emotional responses to job demands. Amendolair (36) concluded that caring is related to the nurses' work environment. In this sense, organizations should develop strategies that support and emphasize a caring environment to foster quality patient care and strengthen nurses' professional identity. An emphasis on caring can enhance nurses' job satisfaction degree and reduce emotional exhaustion level. In addition, a work environment that value caring and give support to nurses in managing their emotions with patients can reduce their emotional dissonance and improve caring self-efficacy.

Conclusion

Measuring perceived caring efficacy may allow for developing plans of action to reduce weaknesses, doubts and concerns in providing care to patients and reinforce confidence to care. This would help nurses to better meeting the actual needs of hospital patients, as well as to improve their care-related strategies.

Limitations

The study has a few limitations. First, the sample of nurses was recruited from only one hospital and attended nurses were selected from the departments that agreed participation in the study. Hence, this can be a limit to the generalizability of the results, thus reducing external validity of the study. Second, we used a self-reported questionnaire that is a good instrument to collect substantial data in a brief lapse of time. Nevertheless, it may produce a bias related to social desirability and common method (56). Future research should reduce this issue by integrating individual perception data with objective data such as caring behavior assessed also by supervisors, job performance, and patient satisfaction. Lastly, this research is cross-sectional and we are unable to examine the causal effects of the relationship between variables. Caring efficacy perception would need to be analyzed through longitudinal studies because it can change over time based on the nurse's experience and opportunity to receive adequate support from the supervisors.

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References

1. Kay Hogan B. Caring as a scripted discourse versus caring as an expression of an authentic relationship between self and other. Issues Ment Health N. 2013; 34:375-9.
2. Aiken L, Douglas MS, Bruyneel L, Van den Heede K, Griffiths P, Busse R, et al. Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. Lancet 2014; 383:1824-1830.
3. Watson J, Nelson J. Measuring Caring: International Research on Caritas as Healing. Springer Publishing Co Inc 2011.
4. Buckley J, Harding A. The real cost of caring or not caring. J Emerg Nurs 2014; 40(1):68-70
5. Watson J. Human caring science. 2nd ed. Boston: MA: Jones & Bartlett; 2012.
6. Finfgeld-Connett D. Meta-synthesis of caring in nursing. J Clin Nurs 2008; 17:196-204
7. Watson J. Assessing and measuring caring in Nursing and Health Sciences. New York: Springer Publishing Company; 2009.
8. Ranheim AE, Kärner A, Berterö C. Caring Theory and Practice: entering a simultaneous concept analysis. Nurs Forum 2012; 47(2):78-90.
9. Larrebee JH, Ostrow C, Withrow ML, Janney M, Gerald R, Burant C. Predictors of patient satisfaction with inpatient hospital nursing care. Res Nurs Heal 2004; 27:71-77.
10. Burtson PL, Stichler JF. Nursing work environment and nurse caring: relationship among motivational factors. J Adv Nurs 2010; 66(8):1819-31.
11. Ray M. Transcultural caring dynamics in nursing and health care. Philadelphia: PA: F.A. Davis; 2010.
12. Graber DR, Mitcham MD. Compassionate clinicians: take patient care beyond the ordinary. Holist Nurs Pract 2004; 18(2):87-94.
13. Karaca A, Durna Z. Patient satisfaction with the quality of nursing care. Nurs Open 2019; 6(2):535-545.
14. Wolf ZR, Giardino ER, Osborne PA, Ambrose MS. Dimensions of nurse caring. Image J Nurs Sch 1994; 26(2):107-11.
15. Steinberg, RJ, Figart, DM. Emotional demands at work: A job content analysis. Ann Am Acad of Pol Soc Sci 1999; 561:177-191.
16. Blanco-Donoso, Garrosa LM, Demerouti E, Moreno-Jiménez B. Job resources and recovery experiences to face difficulties in emotion regulation at work: A diary study among nurses. Int J Stress Manag 2016; 2:107-134.
17. Bakker AB, Demerouti E. The job demands-resources model: State of the art. JMP 2007; 22:309-328.
18. Schaufeli WB, Taris TW. A critical review of the job demands-resources model: Implications for improving work

and health. In Bauer GF, O. Hämmig O., eds. Bridging Occupational, Organizational and Public Health. Amsterdam: The Netherlands: Springer; 2014.

19. Deklavaa L, Millere I. Emotional Intelligence Among Surgical Nurses in Latvia. Procedia Soc Behav Sci 2011; 30:1908-1912.
20. Hochschild A. The managed heart: Commercialization of human feeling. Berkeley: University of California Press; 1983.
21. Debesay J, Harsløf I, Rechel B, et al. Dispensing emotions: Norwegian community nurses' handling of diversity in a changing organizational context. Soc Sci Med 2014; 119:74-80.
22. Zapf D. Emotion work and psychological well-being: A review of the literature and some conceptual considerations. Hum Resour Manag Rev 2002; 12(2):237-268.
23. Schmidt KH, Diestel S. Are emotional labour strategies by nurses associated with psychological costs? A cross-sectional survey. Int J Nurs Stud 2014; 51:1450-1461.
24. Humphrey RH, Ashforth BE, Diefendorff JM. The bright side of emotional labor. J Organ Behav 2015; 36:749-769.
25. Andela M, Truchot D, Borteyrou X. Emotional labour and burnout: some methodological considerations and refinements. Can J Behav Sci 2015; 47:321-332.
26. Baines C, Evans P, Neysmith S. Women's caring. Toronto: McClelland & Stewart; 1991.
27. Van den Tooren M, De Jong EJ. Managing job stress in nursing: What kind of resources do we need? J Adv Nurs 2008; 63:75-84.
28. Grant L, Kinman G. The Importance of Resilience for Staff and Students in the 'Helping' Professions: Developing an Emotional Curriculum. York: Higher Education Academy; 2014.
29. Chou HY, Hecker R, Martin A. Predicting nurses' well-being from job demands and resources: a cross-sectional study of emotional labour. J Nurs Manag 2012; 20: 502-511.
30. Kinman G, Leggetter S. Emotional Labour and Wellbeing: What Protects Nurses? Healthcare (Basel) 2016; 4(4):89.
31. Watson J. Caring knowledge and informed moral passion. Adv Nurs Sci 1990; 13(1):15-24.
32. Swanson KM. Nursing as informed caring for the well-being of others. Image J Nurs Sch 1993; 25(4):352-7.
33. Benner P. From Novice to Expert: Excellence and Power in Clinical Nursing Practice. Commemorative edition. Upper Saddle River, NJ: Prentice Hall Health; 2001.
34. Midttun L. Private or public? An empirical analysis of the importance of work values for work sector choice among Norwegian medical specialist. Soc Sci Med 2007; 64(6): 1265-77.
35. Kelly L, Runge J, Spencer C. Predictors of Compassion Fatigue and Compassion Satisfaction in Acute Care Nurses. J Nurs Scholarsh 2015; 47(6):522-8.
36. Amendolair D. Caring behaviors and job satisfaction. J Nurs Adm 2012; 42(1):34-9.
37. Kalisch B, Tschanen D, Hyunhwa L. Does missed nursing care predict job satisfaction? J Healthc Manag 2011; 56(2):117-131.
38. Peery A. Caring and burnout in registered nurses: what's the connection? Int J Hum Caring 2010; 14(2):53-60.
39. Aviles Gonzalez CI, Galletta M, Melis P, Contu P, Watson J, Finco G, Jimenez Herrera MF. Cultural adaptation and psychometric validation of the Caring Efficacy scale in a sample of Italian nurses. PLoS One 2019; 23:14(5):e0217106.
40. Ambrosi E, Canzan F, Zenere A, Grassi M, Tardivo S, Mortari L, et al. Developing a new questionnaire to measure nurse caring behaviours: a mixed method study. Eur J Pers Cent Healthc 2018; 6:405-12.
41. Patiraki E, Karlou C, Efstathiou G, Tsangari H, Merkouris A, Jarosova D, et al. The relationship between surgical patients and nurses characteristics with their perceptions of caring behaviors: a European survey. Clin Nurs Res 2014; 23:132-52.
42. Tomietto M, Papastavrou E, Efstathiou G, Palese A. Measuring the perception of caring in patients and in nurses: Italian validation of the Caring Behaviors Inventory (CBIta). G Ital Med Lav Ergon 2014; 36:38-44.
43. Coates C. The caring efficacy scale: Nurses' self-reports of caring in practice settings. Adv Pract Nurs Q 1997; 3: 53-9.
44. Xanthopoulou, D, Bakker AB, Fischbach A. Work engagement among employees facing emotional demands. J Pers Psy 2013; 12:74-84.
45. Aiello A, Tesi A. Emotional job demands within helping professions: Psychometric properties of a version of the Emotional Job Demands scale. TPM 2017; 24(2): 167-183.
46. Zapf D, Vogt C, Seifert C, Mertini H, Isic A. Emotion work as a source of stress: The concept and development of an instrument. Eur J Work Organ Psychol 1999; 8: 371-400.
47. Eisenberger R, Huntington R, Hutchison S, Sowa D. Perceived organizational support. J Appl Psychol 1986; 71:500-507.
48. Rhoades L, Eisenberger R, Armeli S. Affective commitment to the organization: the contribution of perceived organizational support. J Appl Psychol 2001; 86:825-836.
49. Maslach C, Jackson S. The measurement of experienced burnout. J Organ Behav 1981; 2:99-113.
50. Sirigatti S, Stefanile C. Adattamento e taratura per l'Italia. In: Maslach C, Jackson S., eds. MBI Maslach Burnout Inventory. Firenze: Organizzazioni Speciali; 1993.
51. Cammann C, Fichman M, Jenkins GD, Klesh, J. Michigan Organizational Assessment Questionnaire. In: Seashore SE, Lawler EE, Mirvis PH, Cammann C., eds. Assessing organizational change: A guide to methods, measures, and practices. New York: Wiley-Interscience; 1983.
52. Hayes AF. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. J Educ Meas 2013; 55:335-337.
53. MacKinnon DP, Lockwood CM, Williams J. Confidence limits for the indirect effect: Distribution of the product and resampling methods. Multivar Behav Res 2004; 39:99-128.

54. Cutcliffe JR, McKenna HP. The essential concepts of nursing. Philadelphia: Elsevier; 2005.
55. Tomietto M, Papastavrou E, Efstathiou G, Palese A. Measuring the perception of caring in patients and in nurses: Italian validation of the Caring Behaviors Inventory (CBIta). G Ital Med Lav Ergon 2014; 36:38-44.
56. Podsakoff PM, Organ DW. Self-reports in organizational research: Problems and prospects. J Manag 1986; 12:531-44.

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Settlement approaches in the Italian Asylum System from the point of view of health professionals and social workers

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Abstract. *Background and aim:* Medical and inclusion/exclusion settlement approaches are the two main approaches characterizing the reception practices into the Western host societies. These settlement approaches guide how professionals take care for forced migrants and favor or obstacle autonomy and integration of asylum seekers and refugees into host societies. Still, few studies have analysed how professionals perceive the settlement approaches that guide their work with forced migrants. This study aimed to analyse the representations that a sample of 256 Italian health professionals and social workers working in both governmental and non-governmental organisations had of the settlement approaches that guided their work in the Italian Asylum System (IAS). *Methods*: Semi-structured interviews were conducted and content and lexically analysed, focusing on the professionals' perceptions of the critical issues in the access of forced migrants into the IAS services. *Results:* Professionals perceived four types of critical issues, making more often reference to *organisational weakness* than to *legal-normative-procedural, relational,* and *professional weakness*. Such critical issues linked to four different perceptions of settlement approaches –*social exclusion, medical, relational, and organisational*– that guided, sometimes simultaneously, the professionals' practices depending on the work area, the institution/association in which they worked, and their role in the organisation. *Conclusion and practical implications:* Guiding the professionals' work, settlement approaches could favor or obstacle autonomy and integration of asylum seekers and refugees into host societies. The results may inform policy and future services highlighting potential prospects for services oriented toward autonomy and integration of this growing population. (www.actabiomedica.it)

Key words: refugees, asylum seekers, settlement approaches, health professionals, social workers

Introduction

Different disciplines in the field of political, socio-anthropological, psychological, and psychosocial studies have focused on the understanding of different settlement approaches that characterize the reception of asylum seekers and refugees into the host societies. Nevertheless, only few studies have until now analysed how professionals that take care for forced migrants perceived the settlement approaches that guide their work. The present study tried to partially fulfil this gap: it aimed to analyse the perception that a sample of health professionals and social workers working inside the Italian Asylum System (IAS) had of *settlement approaches* that guide their work with asylum seekers and refuges, starting from an exploratory analysis of critical issues they perceived about the IAS reception practices.

Settlement approaches, humanitarian and restrictive ideologies, and images of forced migrants

A contraposition between the duty to give help and the intention to denying help to forced migrants has been pointed out by different disciplines. It reflects the two main *settlement approaches* analysed by refugee's studies: the *medical* and the *inclusion/exclusion approach*.

Studies focusing on a clinical perspective generally adopted a medical approach (1- 3), considering psychopathology as an issue that must be dealt with before other more practical and psychosocial concerns (4). The richness of contributions on this issue, and on public health assistance for asylum seekers and refugees, has been related to the *refugees experiences*, characterized by traumatic events such as persecution, torture, escape (for a review of factors affecting refugees' mental health, see 5). Some authors (3, 6, 7) have pointed out that settlement approaches has to consider the traumatic experiences of forced migrants as fundamental causes of difficulties in their social integration, while refugees generally expressed other primary needs, which include stable housing, employment, regular income and family reunion, and, in addition, a sense of community, language skills and citizenship (8).

A second settlement approach that the literature has highlighted is the *social inclusion approach*. It focuses on social adaptation and integration based on refugees' human and social capital (3, 4). Social inclusion approach emphasises, as the most important issues in settlement process, two factors: the empowerment of refugees and of their communities (9, 10) – that is, the forced migrants' ability to actively approach acculturation and integration – and the opportunities for social inclusion in the host society (11). This last factor is connected to the observation that the host society is able not to facilitate integration, because of the creation of barriers to the integration of forced migrants (12- 15). Some Authors (13, 16, 17) spoken about a *social exclusion approach* and outlined four ways by which the host society could exclude forced migrants: denying them opportunities to contribute to and to participate in society's; not permitting access to normal forms of livelihood (e.g. offering low-skilled and low-paid occupations); disconnecting them from civil society by legal barriers, institutional and bureaucratic mechanisms, or systemic discrimination; failing to provide for their integration needs.

Medical and social inclusion/exclusion approaches have served two types of ideologies: the *humanitarian* and the *restrictive* ideology (6). Humanitarian ideology bases on the respect for human rights and on the desire to maintain an image of the host country as a place of refuge for those in need. Instead, the restrictive ideology derives from a "culture of denial" (18); it is based, on one hand, on the idea that forced migration represents a threat to be resisted through restrictive policies (e.g., 19-22) and, on the other, on the observation that forced migrants are consistently worse than any other entry category in terms of employment outcomes, because of bureaucratic barriers, length of residence, and health problems linked to trauma and discrimination (23). As an experimental study (22) recently showed, humanitarian opposed to societal (e.g., societal costs and cohesion) considerations increased the support that samples of Dutch citizens gave for accommodation of forced migrants in the society.

Finally, medical and social inclusion/exclusion approaches and the relative humanitarian and restrictive ideologies matched two different shared images of the forced migrants traced in the anthropological and psychosocial literature (24): on one hand, that of a weak and "medicalised" migrant, victim of the events and of the bureaucratic mechanisms of the asylum system (25-28); on the other hand, that of a refugee-resource for the host society, who can work and contribute to the livelihood of the society (29) but who, nevertheless, may be a profiteer of the asylum channel (30-34).

Together, asylum ideologies and shared images of asylum seekers have, over time, modulated the way services and their providers relate to forced migrants, institutionalizing specific reception practices. In this regard, the few studies conducted in different European countries have identified three different images carried by providers in their encounters with migrants: the "childlike other", who needs to be shamed in order to understand his/her own best interests (35); the "clan-oriented other", who needs to be educated in the host value of individualism (36), and the "survival expert other", who needs to be denied help in order to learn not to manipulate the system (37). These images underline a sort of polarisation between professionals; those who provide help and who work for migrants' empowerment and integration (38); and professionals who deny help, influenced by the culture of disbelief (18), or because of a rigidly bureaucratic interpretation of their professional role (35), or because the recognition of autonomy and empowerment of migrants as a sign of help-resistance (37).

Whatever is the ideology and the settlement approach adopted by the host societies and by their services, being a forced migrant in a new society means staying at the lowest level of power, a position that can create dependency. There are many conditions and barriers that maintain this dependency within the different host systems (37). Some studies reveal the barriers identified by providers as being, for example, language and cultural misunderstandings as well as legal restrictions that limit assistance to those who are waiting for recognition of their status (2, 39-41). Still, it is the culture of disbelief and denial that acts as a stigmatizing and dehumanizing device (42) that forces migrants to express themselves as weak subjects in need of care (5, 43-45). The dehumanization outcomes of reception practices were also outlined by Eastmond (46), according to whom professionals tend to de-politicise and de-culturalise forced migrants because of their exclusive focus on health, clinical and/or legal needs. However, to best of our knowledge, none of these studies has analyzed how the difficulties and barriers identified by professionals really linked to their representation of settlement approaches that guide their practices. This was exactly the objective of this study, whose was aimed at analysing the asylum settlement approaches of a sample of 256 health professionals and social workers working inside the IAS by focusing on the critical issues about reception practices that they perceived.

The current study

Some specific features characterize the multilevel governance model of the IAS, where the Ministry of Interior ensures the general management of a decentralized network of public territorial services and local non-governmental organizations (NGOs). Since 2001 to October 2018, this decentralized reception model has been developed through the System of Protection for Asylum Seekers and Refugees (SPRAR): a network of small reception structures funded by the Minister of Interior, where assistance and integration services are provided (47). Although since 2013 the SPRAR increased their reception capacity, many migrants were placed into ministerial reception centres and in private associations in the last years. From 2013, to face the unavailability of places in the accommodation centers, the Temporary Reception Centers (CAS) was established. Today, many changes have occurred as result of the government policy and of the Decree-Low n. 113, 4-10-2018). However, at the time when this study was conducted, it was a considerable gap between the number of arrivals and asylum applications and the capacity of the reception services, as well as a lack of a clear political and institutional orientation on the type of settlement approach that should guide the IAS. This is the reason why an empirical analysis of the settlement approaches that guided practitioners' practices seemed necessary.

Specifically, this study aimed to analyse the perceptions that a sample of 256 Italian professionals working with forced migrants in both governmental and non-governmental organisations of the IAS, had of the settlement approaches that guide their professional work focusing on: a) the types of critical issues participants perceived; b) the criteria these professionals used to justify regarding them as critical issues. In line with the literature, we hypothesized that professionals' perceptions of critical issues would be linked to a *medical approach* or a *social inclusion/exclusion approach*. We also hypothesized that this polarization would be differed depending on the professional characteristics of the sample, i.e., their profession, the kind of institution/association in which they work, their role in the organization, and different types of both work areas and users' targets. Specifically, we hypothesized that health professionals working in health services or structures would favour the medical approach and professionals working in social and juridical services would favour the inclusion/exclusion approach.

Method

Participants

Participants were recruited in 23 Italian cities located in eleven Italian Regions, where social and health services, institutions and agencies involved in the asylum seekers' and refugees' reception practices have been mapped. The professionals to be interviewed were identified on the basis of their professional role and the function they carried out within the social, legal and health protection paths dedicated to forced migrants. All the professionals that were working with asylum seekers and refuges were freely invited to participate to an anonymous interview focused on their work experience with asylum seekers and refuges. Two hundred and fifty six professionals (132 males and 121 females, 3 missing) working with forced migrants in different Italian organisations took part in this research.

Table 1 describes the professional characteristics of the sample, which was described by a wide range of professions and roles in a variety of organizations, both governmental, first of all hospitals and territorial health systems (61.1%) and secondarily reception centres (CARA, CIE, and SPRAR, 12.7%), and

Table 1. Participants: descriptive characteristics (*N* 256)

		N (%)
Gender	- Male	132 (52.2)
	- Female	121 (47.8)
Profession	- Social worker	19 (7.7)
	- Project coordinator	18 (7.3)
	- Director/manager	29 (11.7)
	- Educator	4 (1.6)
	- Health worker (i.e. nurse)	10 (4.0)
	- Linguistic and cultural mediator	13 (5.2)
	- General doctor	18 (7.3)
	- Specialist doctor	27 (10.9)
	- Social operators	26 (10.5)
	- Psychiatrist	33 (13.3)
	- Psychologist, psychotherapist	24 (9.7)
	- Supervisor, coordinator	22 (8.9)
	- Office worker	5 (2.0)
Role in the organisation	- Managerial role	84 (34.3)
	- Face-to-face role	161 (65.7)
Area of professionals' work with forced migrants	- Legal or juridical	2 (0.8)
	- Health	158 (64.5)
	- Social	85 (34.7
Institution/association in which professionals work	- Hospital	20 (8.2)
	- Territorial health system	129 (52.9)
	- Centers for Accommodation of Asylum Seekers (CARA)	67 (2.5)
	- Center of Identification and Expulsion (CIE)	10 (4.1)
	- Local government	22 (9.0)
	- System of Protection for Asylum Seekers and Refugees (SPRAR)	15 (6.1)
	- Non-governmental associations (NGO's)	42 (17.2)
Population target of the service	- General	130 (54.2)
	- Minors	4 (1.7)
	- Migrants	48 (20.0)
	- International protection	58 (24.2)

non-governmental associations (i.e. NGOs, voluntary associations, 17.2%). Eighty-four participants had a managerial role, while 161 were professionals engaged in face-to-face roles. Most of participants worked in health's area (158), while 85 in social area, and only 2 in juridical area. Population target of the service was "general" for the 54.2% of participants, was "minors" for 1.7%, "migrants" for the 20.0%, and related to the international protection for the 24.2% of the participants.

As criteria for inclusion in this study, participants had to answer to the interview's questions related to the critical issues encountered in their work with forced migrants with at least one sentence. It was possible to identify one or more interview sentences relevant to the aim of this study only from 238 (93%) professionals; these were considered in the subsequent analyses. No significant differences were found between these 238 participants and the 18 professionals who were not able to offer any relevant comment, except for those concerning the professions and associations in which they worked: these were linguistic and cultural mediators ($rs_c = 2.5$) and office workers ($rs_c = 3.1$), especially those working within the Centres for Identification and Expulsion (CIE, $rs_c = 5.0$), who did not find any weakness in the IAS compared with any other profession [χ^2 (12) = 23.01, p = .031] or association [χ^2 (7) = 27.59, p = .006].

Instrument

A semi-structured interview was administered to the professionals during their work time. Professionals did not receive any compensation for their participation. A brief letter was given to the participants, introducing the research goals and explaining the guarantee of confidentiality and anonymity of the answers. The semi-structured interview consisted of questions aimed to collect professionals' perceptions of the critical issues emerged in the asylum seekers or refugees's access to the service in which they worked. Each interview lasted around 30 minutes and has been conducted by researchers trained by the members of the Scientific Committee of the project.

Three main questions of the interview schedule are considered for this study: *Through which ways and procedures do asylum seekers and refugees access the service in which you work? What are the critical issues you can identify? What are the solutions?* The answers professionals provided to these questions were transcribed verbatim, and sentences related to *critical issues* were extrapolated independently of the specific questions proposed, to apply the data analyses.

Overview of analyses

Following the two steps procedure used by Cicognani, Mancini, and Nicoli (48), two methods of analyses were applied.

The first method consisted of a *qualitative thematic analysis* (49) applied in order to identity categories of critical issues participants perceived and to prepare the database for subsequent analyses. We adopted an independent co-coding approach to ensure the rigor of the analytical process (50). The verbatim transcription of sentences related to *critical issues* was transcribed into an electronic sheet; for each participant was allocated one row for each critical issue he or she had identified during the interview. Two researchers scrutinized the 1781 sentences of this matrix to identify the underlying categories of the critical issues described. Attempts were made to capture the opinions of professionals, without forcing responses to fit pre-existing criteria identified in the literature. The two researchers reached the agreement on the operational definition of the following four categories of critical issues:

1. *Legal, normative, and procedural weakness*: included sentences whose content concerned critical issues regarding the administrative procedures for recognition of the refugees' status (e.g., excessively lengthy procedure for asylum, no residence permit) and/or for the achievement of requirements necessary for full enforceability of social rights, and for guaranteed access to Italian health and social services (i.e., registration in the health system, release of the tax code);
2. *Professional weakness:* included sentences whose content concerned critical issues regarding providers' professional training (e.g., poor specific skills, absence of specific training), their technical and scientific instruments, and professional

experiences with asylum seekers and refugees (e.g., ability to read the signs and symptoms of vulnerability);

3. *Relational weakness:* included sentences whose content concerned critical issues regarding interpersonal, intercultural and communicative relationships between providers and asylum seekers and refugees (e.g., language and cultural barriers);
4. *Organisational weakness:* included sentences whose content concerned critical issues related to the mode of functioning of the services and of the IAS (e.g., organisational, structural or functional properties of services; inter-professional relationships; relationships between governmental and NGOs).

Two independent judges then evaluated participants' sentences by classifying them into one of the four categories previously identified. Of the 1781 sentences, 1777 were classified into one of the four categories of weakness; four were missing because of the difficult classification. A first agreement was reached on 82% of cases, K (1777) = 0.75, $p < .001$. To reach a higher level of agreement the judges discussed the most controversial answers. Agreement was reached in 98% of cases, K (1777) = 0.97, $p < .001$; this classification was used for subsequent analyses. Chi-square analyses were conducted in order to analyse: a) which category of critical issues was significantly overrepresented; b) how the perception of the critical issues differed according to the participants' profession, type of organisation in which they worked, role in the organisation, area of the intervention, and population target.

In the second step, with the aim to identify the criteria that professionals used to justify the critical issues, a *lexical correspondence analysis* was implemented on the key words extracted from the 1777 sentences previously coded in the four encoding categories using the software T-lab 8.1 (51). A matrix composed of 231 key words (lines) and of the 4 weakness categories (columns) was used and participants' profession, type of organisation in which they worked, their role in the organisation, the area and the population target of their intervention was considered as illustrative variables. Specifically, the t-values (t) of each illustrative variable on the first two dimensions that emerged from the lexical correspondence analysis were considered in order to identify how criteria emerged differed according to participants' working variables.

Finally, we reconstructed the professionals' representation of their settlement approaches based on the projection of four categories of critical issues and of the 231 key terms on the geometrical plane derived from the first two criteria (dimennsions) emerged from the lexical correspondence analyses.

Results

Critical issues perceived by professionals

For each participant, an average of 6.9 sentences were extracted from the interview; they were codified into the four different categories previously described. Table 2 shows the frequencies of the four critical issues categories.

Chi-square analyses showed that professionals perceived more *organisational weakness* compared both to *legal, normative, procedural weakness* and to *relational weakness*, χ^2 (3) = 211.06, $p < .001$. Four out of ten

Table 2. Descriptive statistics of the four categories of critical issues

Critical issue	N Replies	Valid %	Residual	N Subjects	Column %
Legal, normative and procedural	331	18.6	-113.3	146	61.3
Professional	444	25.0	-.3	193	81.1
Relational	308	17.3	-136.3	159	66.8
Organisational	694	39.1	249.8	213	89.5
Total (sentences)	1777			238	100.0

(39.1%) sentences are grouped into the *organisational* weakness category, while only 308 (17.3%) sentences referred to providers' interpersonal, intercultural and communicative competences in their helping relationships with asylum seekers and refugees (*relational weakness*). A quarter (25.0%) of the sentences were about providers' professional training, their technical and scientific instruments, and their professional experiences with asylum seekers and refugees (*professional weakness*). Less than two out of ten (18.6%) of sentences related to *legal, normative and procedural aspects* of the recognition of refugees' status and/or refugees' rights.

No significant differences were found regarding the profession of participants, but significant differences were found related to their role in the organisation. Directors, managers and supervisors, i.e., those in managerial roles, stressed *relational weakness* less and *organisational weakness* more than respondents in face-to-face roles, χ^2 (4) = 11.29, $p < .05$. Significant differences were also found depending on the health or social area and on the type of association in which the professionals worked: participants working in social areas, especially within the third sector (i.e., NGOs), stressed *legal, normative and procedural weakness* more than professionals working in health and legal areas, χ^2 (8) = 25.72, $p < .001$, and especially in those working within the territorial health system, χ^2 (24) = 70.46, $p < .001$. Professionals working in health areas stressed *professional* and *relational weakness* more than those working in other areas. *Legal, normative and procedural weakness* was also mentioned more by participants who worked with the migrant population compared with those who worked with generic users, who placed more emphasis on *professional and organisational weakness* compared with those worked with asylum seekers and refugees, χ^2 (12) = 32.67, $p < .01$.

Criteria professionals used to justify the four kinds of critical issues

From the Lexical Correspondence Analysis three factors emerged: they were assumed as implicit criteria that justify the four kinds of critical issues perceived by professionals. Table 3 shows the key words significantly ($t > 3.30$, $p < .001$) associated with the positive and negative polarity of the three factors.

The first factor explained 36.66% of variance. It was loaded by key terms that together seemed to refer to the criteria of the "perspective" that participants assumed when they spoke about critical issues of IAS: that of *forced migrants* (positive polarity) significantly described by key terms used to claim *legal, normative and procedural* (t = 37.46) and *organisational weaknesses (t* = 7.42; for example, *procedure, Dublin_Regulation, residency*, Table 3), and that of *operators* of asylum services (negative polarity), significantly described by key terms used to claim *professional weakness* (t = -39.99; for example *access, asylum, low-threshold*).

The second factor, explaining 34.12% of variance, grouped key terms that together outlined the "responsibility" for the critical issues reported: the system (positive polarity) or the individuals (negative polarity). It was at the *system* that participants attributed above all *relational* (t = 5.93) and *organisational weaknesses (t* = 40.84), such as key words related to the work of services (i.e. *resources, unofficial, governmental authority, local government*) and to the functioning of networks of services (i.e. *fragmentation, integration, intercourse, relation, connection*) showed. Instead, it was to the *individuals* that participants attributed above all *legal, normative and procedural* (t = -29.73) and *professional* (t = -24.74) *weaknesses*. The key terms significantly associated with this polarity were related with the problems encountered by operators in their professions (i.e. *training, procedure, skills, jurisdiction, commission, knowledge, diagnosis, trauma*) or associated with the problems of user-migrants (i.e. *residency, exemption, ticket, residence permits, rights*).

The third factor, explaining 29.22% of variance, introduced the criteria of the level of "interconnections" *between professionals and migrants* (positive polarity) and *within the network of public territorial services and local non-governmental organizations* (negative polarity). At the positive polarity, critical issues are expressed in the obstacles to communicate effectively with migrants; the polarity was in fact related to key terms used to claim *relational weakness* (t = 43.17) and recalled the criticality of the relationship with forced migrants, as shown by key words such as *barriers, adjustment, linguistic, communication, diffidence, respect, listen, empathy, authority, confidence, sensitivity*. At the negative polarity, critical issues are expressed in the

Table 3. Critical issues categories and keywords significantly (t-values > 3.30, p < .001) contributing to the positive or negative polarity of the first three factors emerging from the lexical correspondence analyses

Factors	Positive polarity	Negative polarity
Perspectives from which to look at the critical issues of the IAS	*Forced migrants* *Critical issues*: Legal, normative and procedural; Organisational. *Key words*: procedure, projects, psychological, Dublin_regulation, residency, refugee, issuance, collection_of_data, renewal, health, health care system, scientific, sensitivity, services, specific, own, Temporarily_Present_Foreigner, instrument, technical, times, local, ticket, torture, trauma	*Operators* *Critical issues*: Professional. *Key words*: access, anthropological, application, background, asylum, clarity, documents (certifications), low-threshold, CSM, knowledge, skills, commission, gender_based_violence, training, ethno-psychiatry, exemption, diagnosis, cultural, culturally, prejudice, residence permits, MGF, migration, unaccompanied_foreign_minors, operators, oriented, medicine, legal, enrolment, recognition, legal
Responsibility for the critical issues reported	*At the system* *Critical issues*: Relational; Organisational. *Key words*: services, network, linguistic, pathway, social, resources, mediation, organised, unofficial, mediator, fragmentation, integration, facilitation, dedicate, relation, governmental authority, local government, relation, dispatch, involvement, contacts, connection, integrate, accomodation_capacity, answer	*At the individuals* *Critical issues*: Legal, normative and procedural; Professional. *Key words*: residency, training, procedure, exemption, legal, asylum, rules, skills, ticket, residence permits, enrolment, jurisdiction, clarity, commission, times, low-threshold, legal, documents (certifications), Dublin_regulation, knowledge, issuance, application, renewal, specific, unaccompanied_foreign_minors, diagnosis, anthropological, migration, Temporarily_Present_Foreigner, rights, own, trauma
Interconnections	*Between professional and migrants* *Critical issues*: Relational. *Key words*: barriers, expectation, adjustment, linguistic, residency, Italy, communication, future, psychological_needs, request, context, diffidence, correct, privacy, respect, listen, empathy, management, authority, confidence, expression, problems, sensitivity, times, conflict, sort, patient, manner, comprehension, outcome, prevention, interference, minor, user	*Within the network of public territorial services and local non-governmental organizations* *Critical issues*: Organisational; Professional; legal, normative and procedural. *Key words*: services, training, mediator, network, pathway, work, fragmentation, skills

Note: Critical issues categories and key words that significantly contributed to the polarities of the factors were listed in order of relevance.

difficulties related to the management of the different services, organizations, and actors; the key terms significantly placed on this polarity recalled the criticality of an asylum system characterised by a hybridization between a centralized and a decentralized reception organization and associate with *legal, normative and procedural*, t = -4.56; *professional*, t = -20.59, and *organisational*, t = -9.86, critical issues.

The perception of asylum settlement approaches according to the professionals working in different contexts

The distribution of the four categories of critical issues and of the key terms related to them on the Cartesian plane formed by the first dimension (horizontal) and the second dimension (vertical) that emerged from the Lexical Correspondence Analysis, is presented in Figure 1.

The four quadrants give a geometric-spatial representation of four different representations that participants had of settlement approaches underlying their work with forced migrants.

In the left lower quadrant (negative polarity of both the first two factors), the projection of the *professional weakness* category and of the key words significantly associated with it (e.g. *torture, gender based violence, medicine, diagnosis, trauma, ethno-psychiatry, instrument,* among others), seems to engender a perception of a forced migrant as a "victim" who needed to be medicalized to settle him or her into the host society. In this sense, it seemed resonant with the *medical approach* described in the literature. As shown in Table 4, the medical approach was shared first of all by the office workers (t_1 = -20.72 and t_2 = -7.25), by the professionals working in the CIEs (t_1 = -8.08 and t_2 = -4.69) and/or with minor users (t_1 = -8.23 and t_2 = -4.58).

In the right lower quadrant, the projected key terms that related to *legal, normative and procedural weakness* (e.g, *renewal, residency, Dublin Regulation, exemption, enrolment, issuance, application, commission,*

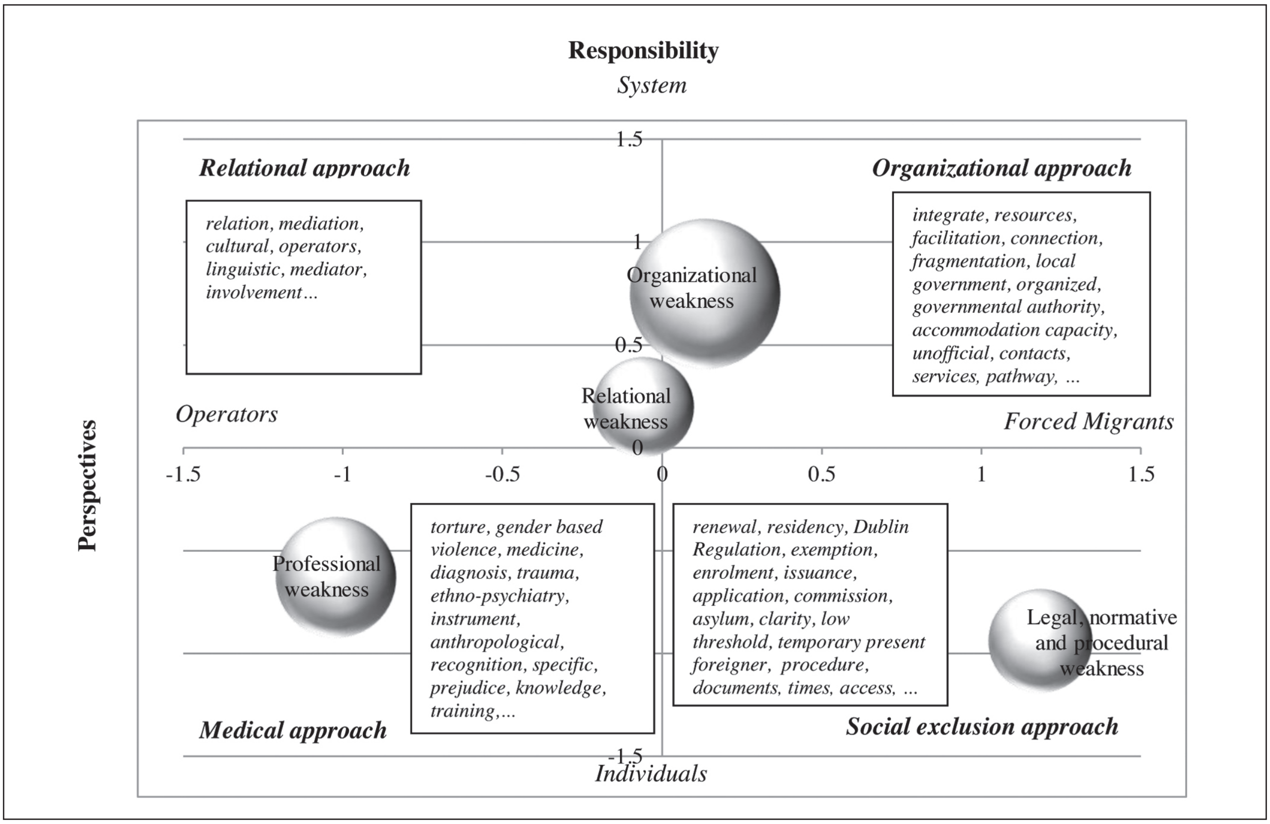

Figure 1. Settlement approaches emerged from the Lexical Correspondence Analyses

asylum, among others) seemed to engender the perception of a migrant as a "bearer of rights". In this case, the settlement approach of professionals seemed to reflect that of *social inclusion,* here characterized by a strong focus on the "legalisation" of a migrant's position in the host society. The perception of a social inclusion settlement approach was shared first of all by social workers (t_1 = 29.72 and t_2 = -44.11), by professionals working in the CARA (t_1 = 10.40 and t_2 = -2.65), in the local governmental agencies (t_1 = 18.62 and t_2 = -3.91), or in the NGO associations (t_1 = 10.19 and t_2 = -3.83), in legal (t_1 = 22.08 and t_2 = -7.21) and social areas (t_1 = 9.73 and t_2 = -3.38) of expertise, and mainly in services that serve only migrant users (t_1 = 10.99 and t_2 = -4.38; Table 4).

If we move in the upper part of Figure 1, two other settlement approaches seemed to emerge. The first was that positioned in the left upper quadrant, where the key words projected were those used to claim a *relational weakness* (e.g., *relation, mediation, cultural, operators,* among others). These key words underlined an image of forced migrant as "culturally other" and harked back to a settlement approach that we named *relational*, but that actually concealed the idea of the "incommensurability" of migrants' cultural differences. The perception of a *relational* settlement approach was the most common one among the participants: educators, health professionals, linguistic and cultural mediators, general and specialist doctors, psychiatrists, and also project supervisors and coordinators, first of all working in hospitals and in the health territorial system, and obviously in a health area of expertise, have been significantly positioned in this quadrant (see the significant $t1$ and t_2 values in table 4).

The last type of settlement approach emerged from key terms positioned in the right upper quadrant (e.g., *integrate, resources, facilitation, connection, fragmentation, local government,* among others) and were used to claim *organisational weakness*: key terms seemed to underline a perception of a migrant as a "user of the network of services" and to reflect a settlement approach that we named *organizational*. It was characterized by a focus on the critical issues related to the discontinuity and fragmentation of the processes of taking care of the forced migrant and on the idea that this fragmentation hindered integration of forced migrants into the host society. Regardless of the type of organisation in which participants worked, their role in the organisation, and the area and the population target of the intervention, the organisational approach was shared first of all by directors and managers (t_1 = 97.89 and t_2 = -27.54), social operators (t_1 = 184.90 and t_2 = 32.60), and by psychologists (t_1 = 12.98 and t_2 = -55.91).

Discussion and conclusion

The aim of this study was to analyse the representations of the settlement approaches that guide institutional practices with forced migrants of professionals working inside the Italian Asylum System, identifying the critical issues they perceived in their daily reception practices and the criteria they used to justify these difficulties. As previously described, in Italy, forced migrants must face a multilevel and multiphase system that is characterised by several services and different types of providers and professionals (37). Furthermore, the limited number of places for asylum seekers and refugees (52), because of an increasing number of migrants landing on the Italian coast (53), forced service providers to act within a system that bureaucratically selects who has the right to enter and settle, and who does not. Inside their institutional context, professionals have the responsibility to accompany forced migrants along the path of settlement. It is therefore obvious that most professionals experienced and expressed various types of critical issues – legal and procedural, professional, relational and organisational – and that these critical issues depended on the role and on the type of organisation in which the professional worked, as the results of this study demonstrated.

Regarding the *legal, normative and procedural* issues, the high bureaucratisation of the steps of settlement was the first critical matter professionals perceived in the Italian reception process, which is characterised by excessively lengthy juridical and administrative procedures for recognising asylum, which in turn associated with difficulties in accessing the health and social care system. Therefore, it is not strange that were professionals working with migrants in the social area, first of all in the associations of the third sector, that reclaimed this critical issue; they

Table 4. Work variables on the first two dimensions emerging from the lexical correspondence analyses (t-values[a])

		t_1	t_2
Profession	- Social worker	29.72	-44.11
	- Director/manager	97.89	27.54
	- Educator	-244.47	5.13
	- Health worker	-48.85	284.06
	- Linguistic and cultural mediator	-71.69	151.55
	- General doctor	-49.03	251.21
	- Specialist doctor	-17.52	47.06
	- Social operators	184.90	32.60
	- Psychiatrist	-99.23	99.29
	- Psychologist, psychotherapist	12.98	55.91
	- Supervisor, coordinator	-21.20	184.77
	- Office worker	-20.72	-7.25
	- Missing	-49.34	-259.56
Area of professionals' work with forced migrants	- Legal or juridical	22.08	-7.21
	- Health	-6.12	2.96
	- Social	9.73	-3.38
	- Missing	-0.81	-20.60
Institution/association in which professionals work	- Hospital	-20.15	6.71
	- Territorial health system	-6.05	2.79
	- Centers for Accommodation of Asylum Seekers (CARA)	10.40	-2.65
	- Center of Identification and Expulsion (CIE)	-8.08	-4.69
	- Local government	18.62	-3.91
	- System of Protection for Asylum Seekers and Refugees (SPRAR)	9.12	-1.05
	- Non-governmental associations (NGO's)	10.19	-3.83
	- Missing	-5.44	-21.93
Role in the organisation	- Managerial role	2.25	-0.63
	- Face-to-face role	-0.37	0.77
	- Missing	-2.46	-20.04
Population target of the service	- General	-10.21	3.72
	- Minors	-8.23	-4.58
	- Migrants	10.99	-4.38
	- International protection	8.35	-0.86
	- Missing	5.36	-14.02

[a] $t > 3.30, p < .001$

seemed to denounce the constraints on their institutional practices related to the *social exclusion* approach that have to guide their work (13, 16, 17, 35). These professionals expressed the idea that legal barriers and institutional and bureaucratic mechanisms constitute the main critical issues of their work in the IAS. As studies showed (13, 16,17), social exclusion approach contributes to delay – or even to prevent - the integration of forced migrants in the host society.

In relation to the *professional* critical area professionals, first of all working with minors and with migrants in detention facilities (e.g., CIE), claimed a lack of general knowledge, expertise, facilities and training in the field of forced migration, as well as an inability to recognise forced migrants' psychological vulnerabilities. It is to point out their lack of tools or competences to cope with the forced migrants that these professionals expressed a perception of forced migrants as "victims" of the events (25-18) who needed to be "medicalised" by using a more suitable *clinical* or *medical approach*. This settlement approach is not new in the literature (1, 3) and today it represents, always more, a way for receiving recognition of the refuges status.

Beyond legal and professional needs, a partially new idea of the forced migrants' needs emerged from the words professionals used when referring to *relational* critical issues. It was precisely in the health areas of expertise that these critical concerns emerged, expressed above all by professionals working in the Italian health system. The difficulties that these professionals expressed seemed to be characterised by the perception of an "incommensurable" distance between cultural and traumatic experiences of forced migrants and the aid and the support they can provide them. This is because of the scarce facilities that they owned to deeply understand and embrace these experiences. Consequently, a new perception of the forced migrant emerged from their replies. It is a perception of a culturally different "user" that requires a *relational approach,* that is, an approach founded on a deep involvement in a culturally different relationship and comprehension.

Furthermore, the forced migrant also became a "user" who must be accompanied through the bureaucratic tracks of the network of services in professionals interviewed. In this study, the *organisational* critical issues emerged as the class of weakness most frequently reported by participants, mainly from those working in services or associations not specifically devoted to migrant population. Nearly 90% professionals, first of all directors and social operators, declared they perceived the IAS as too discontinuous, fragmented, and sometimes disorganised; a perception of IAS that seems to accompanied the representation of a settlement approach, the *organisational approach*, not yet studied by the literature, but that seemed anyway to revoke the image of the "childlike other" described by the literature (36). As the perception of forced migrant as victim, also the image of "childlike other" could hide the risk of reinforcing the state of dependency and feelings of helplessness forced migrants experienced during the reception process.

Concluding, the perceptions of weaknesses that professionals attributed to the reception practices seem to be linked to different, and sometimes contrasting, representations of the settlement approaches. Different settlement approaches seemed in fact to guide, sometimes simultaneously, their institutional practices depending on the area, and/or on the institution/association in which professionals worked, and/or on their role in the organisation. Beyond these differences, the weaknesses perceived by professionals all appeared to be related to the need (and maybe the urgency) to respond to them through an action "integrating something that is missing" in the IAS: missing, in terms of the system, from excessively bureaucratic asylum procedures, or too fragmented reception processes; missing, in terms of professionals who feel they do not have the necessary skills or are not able to enter into a culturally sensitive relationship with migrants; and missing, in terms of asylum seekers and refugees who lack physical and psychological health and missing in terms of cultural, linguistic and social and material resources for integrating them into the host society (firstly, documents and jobs). It is these "missings" as well as the partially contrasting representations of settlement approaches that perhaps tends to reinforce the dynamic of dependency and power, well known in the encounter between native and minority groups. Not being oriented by an effective and clear settlement approach can, in fact, increase the professionals' perception of not being able to provide services necessary for forced migrants, and consequently can foster the services tendency to send migrants to other services and organizations. This is a dynamic that prevents forced migrants from functioning autonomously and from perceiving themselves as persons, instead of users of a system, or as victims in need of rescue.

This study has some methodological limitations: for example, the interview used specific criteria for analysing the representations of settlement approaches that guide professionals' work: specifically the study focused on critical issues and solutions, with a possible influence on the activation of only negative representations in the participants. Furthermore, the 256 interviews were conducted by various researchers and in several regions of Italy, not considering differences in working in different areas of Italy (i.e., some regions are places of landing for forced migrants). Furthermore, participants were a mixed sample of general professionals and operators of the IAS. Despite these limitations, the analysis of critical issues from the perspective of professionals is useful for reflecting on what asylum systems should require for improving practices and facing the normalization of this epochal immigration phenomenon. In line with the literature (53), the results of this study probably suggested that a less ambiguous immigration policy was necessary to steer the practices of professionals working with forced migrants. The question remains, however, if the migration policy of the just ended Italian government, which perhaps it was clearer in terms of direction that the previous one, can really guide the work of professionals and guarantee the autonomy and social inclusion of migrants in the society. Regardless of immigration policies, the results of this study suggest the need to train professionals working with forced migrants. In this regard, trainings on linguistic and cultural mediators, on which many Italian educational institutions have been investing resources in the last few years, did not seem to be sufficient to meet the needs felt by professionals. It is in fact mainly the lack of psychological-relational competences that the interviewees pointed out.

The need for training courses of an interdisciplinary nature and dedicated to IAS professionals seems therefore be the main, urgent and still current operational implication of this study. Not only NGOs and asylum agencies, but also general health and social care institutions daily face the presence of refugees and asylum seekers among their users, with consequent changes in the competences that the needs of this user population require.

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References

1. Ager A. Perspectives on refugee experience. In A. Ager (Ed.), Refugees: Perspectives on the Experience of Forced Migration (pp. 1-23). London and New York: Pinter, 1999.
2. Smith ST, Smith KD, Peang-Meth A. University-based services for asylum seekers on Guam: Empowerment, culture learning and community. Int J Intercult Rel 2010; 34(2): 150-162.
3. Ward C, Bochner S, Furnham A. The psychology of culture shock. London: Routledge, 2001.
4. Colic-Peisker V, Walker I. Human Capital, Acculturation and Social Identity: Bosnian Refugees in Australia. J Community Appl Soc 2003; 13(5): 337-360.
5. Esses VM, Hamilton LK, Gaucher D. The Global Refugee Crisis: Empirical Evidence and Policy Implications for Improving Public Attitudes and Facilitating Refugee Resettlement. Soc Iss Policy Rev 2017; 11(1): 78-123.
6. Derrida J. On Cosmopolitanism and Forgiveness: Thinking in Action; London: Routledge, 2001.
7. Timotijevic L, Breakwell GM. Migration and threat to identity. J Community Appl Soc 2000; 10(5): 355–372.
8. Rossi M, Mancini T. I processi di acculturazione dei migrant forzati tra comunità ospitanti, comunità etniche e comunità virtuali [Acculturation processes of forced migrants within host, ethnic and virtual communities. A review of the literature]. Psicol Soc 2016; 2: 105-140.
9. McKinnon SL. Unsettling resettlement: Problematizing "lost Boys of Sudan" Resettlement and identity. Western J Comm 2008; 72(4): 397-414.
10. Siddiquee A, Kagan C. The Internet, empowerment, and identity: An exploration of participation by refugee women in a Community Internet Project (CIP) in the United Kingdom (UK). J Community Appl Soc 2006; 16: 189-206.
11. Colic-Peisker V, Tilbury F. Employment niches for recent

refugees: Segmented labour market in twenty-first century Australia. J Refug Stud 2006; 19(2): 203-229.

12. Chile LM. The imported underclass: Poverty and social exclusion of black African refugees in Aotearoa New Zealand. Asia Pac Viewp 2002; 43(3): 355-366.
13. Correa-Velez I, Spaaij R, Upham S. “We are not here to claim better services than any other”: Social exclusion among men from refugee backgrounds in urban and regional Australia. J Refug Stud 2013; 26(2): 163-186.
14. Omidvar R, Richmond T. Immigrant Settlement and Social Inclusion in Canada. Ontario, Canada: The Laidlaw Foundation Toronto, 2003.
15. Taylor J. Refugees and social exclusion: What the literature says. Migr Action 2004; 26(2): 16-31.
16. Burchardt T, Le Grand J, Piachaud D. Degrees of exclusion: Developing a multidimensional measure. In J Hills, J Le Grand, D Piachaud (Eds.), Understanding Social Exclusion (pp. 30-43). Oxford: Oxford University Press, 2002.
17. Galabuzi GE. Social Exclusion. In D Raphael (Ed.), Social Determinants of Health: Canadian perspectives (pp. pp. 235-251). Toronto: Canadian Scholars’ Press, 2004.
18. Souter J. A Culture of Disbelief or Denial? Critiquing Refugee Status Determination in the United Kingdom. Oxford Monit Forced Migr 2011; 1(1): 48-59.
19. Caricati L. Perceived threat mediates the relationship between national identification and support for immigrant exclusion: A Cross-National Test of Intergroup Threat Theory. Int J Intercult Rel 2018; 66: 41–51.
20. Canetti D, Snider KG, Pedersen A, Hall BJ. Threatened or Threatening? How Ideology shapes asylum seekers’ Immigration policy attitudes in Israel and Australia. J Refug Stud 2016; 4: 583-606.
21. Mancini T, Caricati L, Di Bernardo A, Vezzali L. Support for rejection and reception policies toward asylum seekers in Italy: The role of conservative ideologies and legitimizing myths. By referee, 2019
22. Verkuyten M, Altabatabaei HG, Nooitgedagt W. Supporting the Accommodation of Voluntary and Involuntary Migrants: Humanitarian and Host Society Considerations. Soc Psychol Pers Sci 2018; 9(3): 267-274.
23. Colic-Peisker V, Tilbury F. Integration into the Australian labour market: The experience of three “visibly different” groups of recently arrived refugees. Int Migr 2007; 45(1): 59-85.
24. Bottura B, Mancini T. Psychosocial dynamics affecting health and social care of forced migrants: A narrative review. Int J Migr Heal Soc Care 2016; 12(2): 109-119.
25. Bixler M. The Lost Boys of Sudan: an American story of the refugee experience. Athens, GA: The University of Georgia Press, 2005.
26. Marlowe JM. Beyond the discourse of trauma: Shifting the focus on Sudanese refugees. J Refug Stud 2010; 23(2): 183-198.
27. Windle J. The racialisation of African youth in Australia. Soc Identities 2008; 14(5): 553-566.
28. Zetter R. Unlocking the protracted displacement of refugees and internally displaced persons: An overview. Refug Surv Q 2011; 30(4): 1-13.
29. Pearce JM, Stockdale JE. UK responses to the asylum issue: A comparison of lay and expert views. J Community Appl Soc 2009; 19: 142-155.
30. Goodman S, Speer SA. Category Use in the Construction of Asylum Seekers. Crit Discourse Stud 2007; 4(2): 165-186.
31. Levy C. The European Union after 9/11: the demise of a Liberal Democratic Asylum Regime? Gov Oppos 2005; 40(1): 26–59.
32. O’Doherty K, Lecouteur A. “Asylum seekers”, “boat people” and “illegal immigrants”: Social categorisation in the media. Aust J Psychol 2007; 59(1): 1-12.
33. Goodman S, Burke S. “Oh you don’t want asylum seekers, oh you’re just racist”: A discursive analysis of discussions about whether it’s racist to oppose asylum seeking. Discourse Soc 2010; 21(3): 325-340.
34. Mancini T, Bottura B, Caricati L. The Role of Perception of Threats, Conservative Beliefs and Prejudice on Prosocial Behavioural Intention in Favour of Asylum Seekers in a Sample of Italian Adults. Curr Psychol 2018; First Online 26 June: 1-10.
35. Bottura B, Mancini T. Pratiche interattive tra operatori e migranti forzati in uno SPRAR italiano [Interactive practices between professionals and forced migrants inside an Italian reception association. Psicol della Salut 2018; 2: 45-69.
36. Carlson M. Immigrant Women within Swedish Language Instruction: Contradictions and Transgressions. In KWillems (Ed.), Multiple Marginalities: An Intercultural Dialogue on Gender in Education (pp. 313-332). Helmer Verlag, Königstein: Across Europe and Africa, 2006.
37. Wettergren Å. A Normal Life: Reception of Asylum Seekers in an Italian and a Swedish Region. University Gothenburg: Göteborg studies in sociology Göteborg, 2013.
38. Beckerle K. Pity Versus Rights’ Recognition: Rejection of the Victim Label by Palestinian Refugees. In S Miari (Ed.), Palestinian refugees: Generations, but one identity (pp. 39-64). Jerusalem: Birzeit University, 2012.
39. Norredam M, Mygind A, Krasnik A. Access to health care for asylum seekers in the European Union - A comparative study of country policies. Eur J Public Health 2006; 16(3): 285-289.
40. Schuster L. The Realities of a New Asylum Paradigm. University of Oxford, Centre on Migration, Policy and Society (COMPAS), Oxford, Report No. WP- 05-20; 2005. http://openaccess.city.ac.uk/2589/1/Liza%2520Schuster%2520wp0520.pdf.
41. Watters C, Ingleby D. Locations of care: meeting the mental health and social care needs of refugees in Europe. Int J Law Psychiatry 2004; 27: 549-570.
42. Malkki LH. Refugees and Exile: From “Refugee Studies” to the National Order of Things. Annu Rev Anthropol 1995; 24: 493-523.
43. Colic-Peisker V, Tilbury F. “Active” and “passive” resettlement: The influence of support services and refugees’ own resources on resettlement style. Int Migr 2003; 41(5): 61-91.

44. Esses VM, Veenvliet S, Hodson G, Mihic L. Justice, morality, and the dehumanization of refugees. Soc Justice Res 2008; 21(1): 4-25.
45. Rajaram PK. Humanitarianism and representations of the refugee. J Refug Stud 2002; 15(3): 247-264.
46. Eastmond M. Stories as lived experience: Narratives in forced migration research. J Refug Stud 2007; 20(2): 248-264.
47. SPRAR (2012-2013). Rapporto Annuale del Sistema di protezione per richiedenti asilo e rifugiati [Annual Report of the Protection System for Asylum Seekers and Refugees].http://www.serviziocentrale.it.
48. Cicognani E, Mancini T, Nicoli MA. Criteria for the allocation of medical resources: Citizens' perspectives. J Appl Biobehav Res 2007; 12(1): 13-34.
49. Silverman D. Interpreting qualitative data: Methods for analyzing talk, text and interaction. London: Sage, 2006.
59. Morse JM, Barrett M, Mayan M, Olson K, Spiers J. Verification Strategies for Establishing Reliability and Validity in Qualitative Research. Int J Qual Meth 2017; 1(2): 13-22.
51. Lancia F. Strumenti per l'analisi dei testi. Introduzione all'uso di T-LAB [Instruments for textual analyses. An inroduction to T-LAB use]. Milano: Franco Angeli, 2004.
52. Italian Council for Refugees. Criteria & restrictions to access reception conditions, 2013. http://www.asylumineurope.org/reports/country/italy/reception-conditions/access-forms-reception-conditions/criteria-restrictions#footnote21_zgrqq3w.
53. Nier JA, Gaertner SL, Nier CL, Dovidio JF. Can Racial Profiling Be Avoided Under Arizona Immigration Law? Lessons Learned From Subtle Bias Research and Anti-Discrimination Law. Anal Soc Iss Pub Pol 2012; 12(1): 5-20.
53. UNHCR.Refugees/Migrantsemergencyresponse–Mediterranean; 2016. http://data.unhcr.org/mediterranean/country.php?id=105.

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Evaluation of empathy among undergraduate nursing students: a three-year longitudinal study

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Abstract. *Background and aim:* An empathic approach is considered fundamental in order to ensure the identification of patient needs and to provide the appropriate care, although the studies on the development of empathic attitude during nursing course reported conflicting results. Different empathic tendencies have been observed in the two genders: many studies showed greater empathy in females. *Methods:* To assess empathy level of students enrolled in the academic year 2015/16 at an Italian University nursing course, the Balanced Emotional Empathy Scale (BEES) was administered at the start of Year 1 (n=118), at the mid-point of Year 2 (n=99) and at the end of Year 3 (n=67). Data were statistically analyzed. *Results:* Cronbach's values were satisfactory (0.87 at Year 1, 0.89 at Year 2, 0.79 at Year 3), confirming the good internal reliability of BEES. The nursing students obtained a total BEES mean ± SD score of 37.0 ± 19.5 at Year 1, 33.5 ± 22.6 at Year 2 and 35.4 ± 16 at Year 3, without any statistically significant difference among the three years. The BEES mean scores reported by males were lower in comparison with females during the three years of the course, although, at the end of the third year, males showed a significant increase at the "Emotional spread responsiveness" dimension of the scale. *Conclusions:* The study suggests that empathy can be maintained at good levels during the nursing education especially if nursing teaching and internship are focused on this topic, acting up the innate aptitude of each student. (www.actabiomedica.it)

Key words: empathy, nursing education, undergraduate nursing students, balanced emotional empathy scale, gender differences

Introduction

In nursing field, an empathic approach is considered fundamental for the development of the therapeutic relationship (1, 2), to ensure the identification of patient needs and to provide appropriate care (3). High capacity for empathy is required to fully understand patients' feelings, opinions and conditions (4). Good empathetic capacity in nurses has been linked to greater patient well-being and satisfaction, better patient compliance and decreased errors, complications and treatment period (5-12). A lack of empathy, on the other hand, may interfere negatively with diagnosis, treatment and care (13). Although empathic skill is a mutually beneficial element in the relationship between nurse and patient (6, 7), according to some researchers nursing students demonstrate low to moderate levels of empathy (7, 14-18).

However, despite the increasing recognition of the impact of empathy on patient outcomes, there is compelling research indicating that contemporary healthcare is characterized by a generalised lack of empathy and patients frequently report the lack of empathy in nurse-patient relationship (19, 20). Many authors highlight that a lack of empathy in our health systems may have measurable detrimental effects on patient care, representing, at the same time, a risk for the health of professionals (21).

For example, a review of cases presented to the nurses' disciplinary tribunal in New South Wales (Australia) suggests that the majority of complaints against nurses in this jurisdiction are the result of callousness or lack of empathy (3). In addition, empathy is associated with lower levels of burnout among nurses and nursing students (17, 22, 23) and with a higher professional job satisfaction (13, 24).

The ability to empathize can be influenced by many factors, such as gender, age, job training and experience (17, 25, 26). Regarding gender differences in empathy, many studies showed that women demonstrate greater empathic tendencies in comparison to men (14, 27-29). An Italian longitudinal study, which assessed the efficacy of a specific training course for improving empathy skills in nursing students, highlighted that the training was more effective for the female students than for their male counterparts (30). Another Italian study revealed that the impact of gender on empathetic tendency increased during the nursing training process, as demonstrated by the higher Balanced Emotional Empathy Scale (BEES) scores of female students with respect to males (16). In opposition, another Italian research, which investigated the involvement of expert patients in developing innate capacity to empathize among nursing students, highlighted that all male students, who, at the baseline, presented significantly lower levels of empathy in comparison with females, increased their empathy tendency by the end of nursing program, as showed by BEES scores (31).

The development of empathic tendency during the nursing course has been studied by many researchers, who report conflicting results. For example, Australian cross-sectional studies (29, 32) recorded no statistically significant differences of empathy among students in different years of the course. Three transversal studies revealed a "decline" in empathy among students at the end of the nursing course compared with those at the beginning of study (28, 33, 34). Similarly, Ward et al. (35) observed a decrease in empathy, using the Jefferson Scale of Empathy, within the same cohort of students at the end of the course in comparison with its start. Similar findings were recorded among medical students and students of other health professions (33, 36-39). A recent comparative cross-sectional study highlighted an increase in empathy among nursing students in their sixth semester in comparison with both students attending their second semester and master's nursing course, indicating a positive effect on empathy development induced by basic nursing education but not by post-graduate training (40).

The literature on empathy levels in nursing students is represented by cross-sectional research and small samples of participants with inconsistent results. Many authors suggest implementation of longitudinal studies in order to measure the development of empathy over the nursing course and analyse the effect of communication skills training on empathy among nursing students (17, 28).

Aims

- To longitudinally evaluate the impact of nursing education on self-reported emotional empathy among undergraduate students in a 3-year nursing course.
- To assess the gender difference of self-reported emotional empathy among students in the 3-year nursing course.

Method

Study design

This study is a longitudinal research, carried out among nursing students enrolled in the Modena Nursing Degree Programme at the University of Modena and Reggio Emilia, Italy.

Procedures

We scheduled three subsequent day-surveys to evaluate empathy level among students of the three years of the nursing course: at the start of Year 1, at the mid-point of Year 2 and at the end of Year 3.

Participants

Our convenience sample was composed of all students enrolled at the nursing course in the academic year 2015/16 (n=142): 118 students participated in the first evaluation (Year 1) and represented the initial sample; 99 of this initial sample participated in the second assessment (Year 2) and only 67 of the initial sample participated in the third assessment (Year 3).

Measures

The chosen instrument to assess empathy levels was the BEES, which has already been used in studies conducted on other samples of Italian nursing students (16, 17, 30). BEES is a self-report instrument, validated in Italian (41,42), which includes 30 items about which participants express their level of agreement/disagreement on a seven-point Likert scale. The scale is designed with negative and positive answers to avoid social desirability. The validation of BEES, Italian version, highlighted five dimensions that deal with the following areas of emotional empathy (43):

- D1 'Impermeability to the emotional feelings of others', 7 items referring to situations in which the respondent is unwilling to become emotionally involved in another person's feelings (e.g., "*I am not affected easily by the strong emotions of people around me*");
- D2 'Susceptibility to the emotional feelings of others', 6 items tapping the respondent's willingness to become involved in others' feelings and share their suffering (e.g., "*I get a strong urge to help when I see someone in distress*");
- D3 'Emotional spread responsiveness', 7 items referring to the respondent's tendency to identify with characters in films, plays, stories, etc. (e.g., "*I don't get caught up easily in the emotions generated by a crowd*)";
- D4 'Susceptibility to emotional involvement with people nearby', 6 items tapping the respondent's feelings experienced in the presence of others who are suffering (e.g., "*It upsets me to see someone being mistreated*");
- D5 'Tendency to avoid emotional involvement with fragile people', 4 items reflecting the respondent's tendency to avoid becoming emotionally involved with fragile or vulnerable people like children or the elderly (e.g., "*Helpless old people don't have much of an emotional effect on me*").

The Cronbach's α coefficient for all 30 items in the present study was 0.87 at Year 1, 0.89 at Year 2 and 0.79 at Year 3, similarly to previous research (42, 43). The total BEES score indicates high levels of empathy if it is greater than the mean value of 32 ± 18 (SD).

Another questionnaire for collecting student information (gender, age, course year attended and the date of BEES completion) was concomitantly administered. BEES and the questionnaire were distributed in the classroom at the end of a lesson, giving students the time necessary to complete them. Each student was asked to insert an identification code, that only he/she would recognise, in order to allow the matching of each student's data among the three surveys and, at the same time, the anonymity of all information collected.

The principal investigator explained to students the purpose and methods of this study. Participants' anonymity and confidentiality as well as students' decision to voluntarily participate or not participate in this study were respected. All students were assured that neither the information obtained through administration of the BEES nor a failure to participate in the study would have any impact on their course of study.

Data analysis

The statistical analysis was performed using the software Stata 14 (StataCorp, College Station, TX, USA). Continuous variables were reported as arithmetic mean and standard deviations (SD). A total BEES score (reflecting emotional empathy) and 5-dimension BEES scores were computed, in accordance with the indications of the authors who adapted and validated the BEES Italian version (41, 42). The ANOVA was applied for comparing the BEES mean scores of all students at Year 1, Year 2 and Year 3 and the gender scores of the three years of nursing course. The independent samples *t*-test was chosen to compare total score and 5-dimension BEES mean scores between the two genders. The statistical significance was attained if $p<0.05$.

Results

The initial sample was represented by 118 students (males=25 and females=93), who agreed to participate in this study and completed the BEES at Year 1. They represented 83% of all students enrolled in the first year of the nursing course (n=142 students). The imbalance between males and females reflected the gender distribution of all nursing students (21% males and 79% females). The mean age of students at Year 1 was 20.2 ± 2.6 (SD) years. From the initial sample, 99 students (25% males and 75% females), who had previously completed the questionnaire, participated in the second BEES administration at Year 2. The mean age of students at Year 2 was 21.2 ± 2.8 (SD) years. In the final survey, only 67 students (19% males and 81% females), who had previously completed the questionnaire at both Year 1 and Year 2, agreed to participate. The mean age of students at Year 3 was 22.1 ± 2.2 (SD) years.

Cronbach's α values were satisfactory (respectively 0.87 at Year 1, 0.89 at Year 2 and 0.79 at Year 3), confirming the good internal reliability of BEES.

The empathic tendency

The nursing students obtained a total BEES mean score of 37.0 ± 19.5 SD at Year 1, 33.5 ± 22.6 SD at Year 2 and 35.4 ± 16 SD at Year 3, without any statistically significant difference among the three years, as shown in Table 1. The mean scores of BEES dimensions, as reported in Table 1, showed a statistically significant difference only at D3 "Emotional spread responsiveness" among the three years (F=4.66; p <0.01).

The gender score difference

As show in Figure 1, the total BEES mean scores reported by male students were lower in comparison with females in all three surveys: 17.4 vs 42.7 (t=6.40; p<0.0001) at Year 1 (Table 2), 15 vs 40 (t=5.48; p<0.0001) at Year 2 (Table 3); 26 vs 37.6 (t=2.43; p<0.05) at Year 3 (Table 4). In BEES dimensions, male students obtained statistically significantly lower scores in comparison with females at Year 1 (Table 2) and Year 2 (Table 3), but not at Year 3, when male students obtained scores not statistically significantly

Table 1. Dimensions and total scores of BEES at the 3 surveys

BEES dimension	Year 1	Year 2	Year 3	Statistical test
	Mean (SD)	Mean (SD)	Mean (SD)	ANOVA p-value
D1: Impermeability to the emotional feelings of others	-7.5 (6.0)	-6.0 (7.0)	-7.5 (6.0)	F = 1.81 p = 0.17
D2: Susceptibility to the emotional feelings of others	10.7 (4.0)	10.6 (4.7)	11.2 (4.1)	F = 0.45 p = 0.64
D3: Emotional spread responsiveness	-0.60 (5.3)	-1.5 (8.9)	-2.6 (5.3)	F = 4.66 p<0.01
D4: Susceptibility to emotional involvement with people nearby	10.9 (4.9)	10.9 (4.9)	11.2 (4.7)	F = 0.08 p = 0.92
D5: Tendency to avoid emotional involvement with fragile people	-3.3 (2.6)	-2.4 (3.0)	-2.9 (3.8)	F = 2.15 p = 0.12
Total score	37.0 (19.5)	33.5 (22.6)	35.4 (16.0)	F = 0.86 p = 0.42

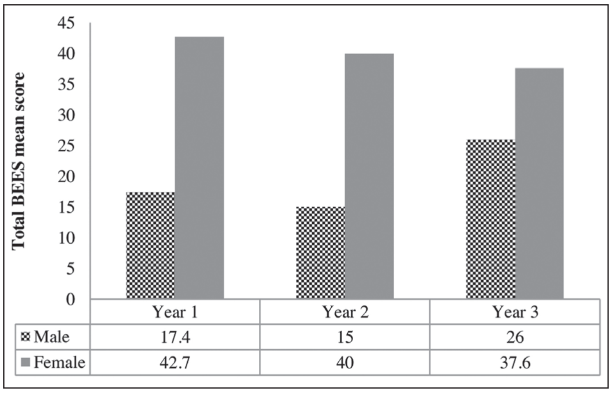

Figure 1. Total BEES mean scores in male and female students at the 3 surveys

different from females at the dimensions 'Emotional spread responsiveness', 'Susceptibility to emotional involvement with people nearby', and 'Tendency to avoid emotional involvement with fragile people' (Table 4).

The total BEES mean scores among male students increased from the first to the third year and the BEES dimension "Emotional spread responsiveness" reported a statistically significant difference over the three year course (Table 5).

Differently, among female students, the total BEES mean scores slightly decreased over the three year course (Table 6).

Table 2. Dimensions and total scores of BEES at Year 1, divided by gender

BEES dimension	Year 1 Students n=118		p-value
	Male (n=25) Mean (SD)	Female (n=93) Mean (SD)	
D1: Impermeability to the emotional feelings of others	-3.0 (5.3)	-8.7 (5.5)	p<0.001
D2: Susceptibility to the emotional feelings of others	7.4 (3.6)	11.6 (3.7)	p<0.001
D3: Emotional spread responsiveness	3.2 (4.5)	-1.7 (5.0)	p<0.001
D4: Susceptibility to emotional involvement with people nearby	8.0 (5.5)	11.8 (4.6)	p<0.01
D5: Tendency to avoid emotional involvement with fragile people	-1.9 (2.7)	-3.7 (2.4)	p<0.01
Total score	17.4 (17.5)	42.7 (15.9)	p<0.0001

Table 3. Dimensions and total scores of BEES at Year 2, divided by gender

BEES dimension	Year 2 Students n=99		p-value
	Male (n=25) Mean (SD)	Female (n=74) Mean (SD)	
D1: Impermeability to the emotional feelings of others	-2.3 (6.4)	-7.2 (6.8)	p<0.01
D2: Susceptibility to the emotional feelings of others	7.6 (5.8)	11.6 (3.8)	p<0.01
D3: Emotional spread responsiveness	3.1 (5.5)	-1.2 (5.9)	p<0.01
D4: Susceptibility to emotional involvement with people nearby	8.3 (4.2)	11.8 (4.8)	p<0.01
D5: Tendency to avoid emotional involvement with fragile people	-1.5 (3.7)	-2.7 (2.6)	p<0.01
Total score	15.0 (20.3)	40.0 (20.0)	p<0.0001

Table 4. Dimensions and total scores of BEES at Year 3, divided by gender

BEES dimension	Year 3 Students n=67		p-value
	Male (n=13) Mean (SD)	Female (n=54) Mean (SD)	
D1: Impermeability to the emotional feelings of others	-3.9 (5.9)	-8.4 (5.7)	$p<0.05$
D2: Susceptibility to the emotional feelings of others	8.4 (4.3)	11.9 (3.8)	$p<0.01$
D3: Emotional spread responsiveness	-1.2 (4.8)	-2.9 (5.4)	$p = 0.29$
D4: Susceptibility to emotional involvement with people nearby	9.8 (5.2)	11.6 (4.5)	$p = 0.22$
D5: Tendency to avoid emotional involvement with fragile people	-2.9 (3.2)	-2.9 (3.9)	$p = 0.98$
Total score	26.0 (11.9)	37.6 (16.2)	$p<0.05$

Table 5. Dimensions and total scores of BEES at the 3 surveys, among males

BEES dimension	Year 1	Year 2	Year 3	Statistical test ANOVA p-value
	Mean (SD)	Mean (SD)	Mean (SD)	
D1: Impermeability to the emotional feelings of others	-3.0 (5.3)	-2.3 (6.4)	-3.9 (5.9)	$F = 0.32$ $p = 0.73$
D2: Susceptibility to the emotional feelings of others	7.4 (3.6)	7.6 (5.8)	8.4 (4.3)	$F = 0.19$ $p = 0.83$
D3: Emotional spread responsiveness	3.2 (4.5)	3.1 (5.5)	-1.2 (4.8)	$F = 3.80$ $p<0.05$
D4: Susceptibility to emotional involvement with people nearby	8.0 (5.5)	8.3 (4.2)	9.8 (5.2)	$F = 0.61$ $p = 0.55$
D5: Tendency to avoid emotional involvement with fragile people	-1.9 (2.7)	-1.5 (3.7)	-2.9 (3.2)	$F = 0.80$ $p = 0.46$
Total score	17.4 (17.5)	15.0 (20.3)	26.0 (11.9)	$F = 1.69$ $p = 0.19$

Discussion

This research, focused on empathy among nursing students, highlights a high empathy aptitude level at the start of the nursing course, which remains unchanged during the course, as evidenced by the stability of BEES scores during the 3 years.

Our result indicates a higher level of empathy if compared to other recent Italian studies conducted among nursing students (16, 30). In this regard, the literature put in evidence that the undergraduate nursing students generally show a significantly higher mean score of empathy than the students attending other undergraduate courses (12, 33, 44). According to Petrucci et al. (12), this could be explained by the fact that students who choose to attend the nursing course

Table 6. Dimensions and total scores of BEES at the 3 surveys, among females

BEES dimension	Year 1	Year 2	Year 3	Statistical test ANOVA p-value
	Mean (SD)	Mean (SD)	Mean (SD)	
D1: Impermeability to the emotional feelings of others	-8.7 (5.5)	-7.2 (6.8)	-8.4 (5.7)	F = 1.05 p = 0.35
D2: Susceptibility to the emotional feelings of others	11.6 (3.7)	11.6 (3.8)	11.9 (3.8)	F = 0.16 p = 0.85
D3: Emotional spread responsiveness	-1.7 (5.0)	-1.2 (5.9)	-2.9 (5.4)	F = 1.97 p = 0.14
D4: Susceptibility to emotional involvement with people nearby	11.8 (4.6)	11.8 (4.8)	11.6 (4.5)	F = 0.08 p = 0.93
D5: Tendency to avoid emotional involvement with fragile people	-3.7 (2.4)	-2.7 (2.6)	-2.9 (3.9)	F = 2.15 p = 0.12
Total score	42.7 (15.9)	40.0 (20.0)	37.6 (16.2)	F = 1.08 p = 0.34

probably have a particular aptitude or motivation for helping relationships, which represents a key aspect of the nursing profession (45, 46).

As stated by Artioli et al. (47), some specific skills (e.g. To know the basics of effective communication, To use communication facilitation strategies, To know how to put in place the active listening to the patient and his point of view and understanding of 'being' in a difficult relationship, using empathy and reflective thinking) can help nurses deeply understand what patients feel and live, favouring personalized adaptation processes (47). Therefore, educational nursing care programs should improve students' ability to empathically communicate both with the patient and the interprofessional team (48).

The comparison of our results with others can be difficult due to the limited availability of longitudinal research on empathy in nursing students. At the same time, the comparison can be unreliable due to the difference in educational contexts where the few studies have been conducted.

Although the preliminary results of this research suggest a slight decline in empathic tendency among nursing students between the beginning and the mid-point of their undergraduate education (49), the present study does show any change in emphatic tendency with the progress of nursing education. This result overlaps the observations of unchanged empathy reported by Williams et al. (29, 44) and Mckenna et al. (32) in Australian nursing schools, but it is different from other study findings (28, 33, 35, 50). In fact, in many different health-science disciplines, students show a decrease in empathy scores from the beginning to the end of school due to their probable defence mechanism against close engagement in patient sufferance (36, 38).

The present study suggestests a gender difference in empathy aptitude and tendency, showing that female students report statistically significant higher mean BEES scores in comparison with males. This gender difference was also found in the standard samples of the scale (42).

This result is in line with most studies which highlight gender difference in empathy. In particular, some studies report that such sex differences in humans can be driven by biological roots, which humans share with other animals (51), especially primates and rodents, whose offspring depend on the mother for a prolonged postnatal period (52). The empathic ability is not only confined within the mother-infant relationship, but it fosters to create complex social networks, sustained and maintained by capacity of each individual to emotionally respond to signals of others in various contexts. The result of this study overlaps the difference in empathy reported by many studies between the two genders: females, compared to men, show higher emotional empathy, with mirroring responses to others' pain, as well as better emotion recognition abilities, whereas males show greater recruitment of areas involved in cognitive control and cognition (51).

In this study, the gender difference, pronounced at the start, showed a tendency to decrease at the end of the nursing course, when male students improved in their empathy capacities, reporting significantly higher scores in one BEES dimension, "Emotional spread responsiveness". The improved emphatic capacities reported by our students at the end of nursing course confirm previous data obtained in the same educational context (31), indicating a consistent positive impact of training on empathic attitudes. Moreover, this results suggests that the empathic dimension of "Emotional spread responsiveness" can be taught and learned through the reinforcement of the tendency to identify oneself with characters in films, plays, stories, etc (53). In fact, films and narrative workshops were included in our nursing programs during our students' attendance period. In accordance with most study result (14, 16, 17, 27-30, 44), females consistently recorded higher empathy scores, probably due to greater emotional resonance to others' feelings and more sensitivity to interpersonal stimuli, maybe due to biological and social conditioning. According to Williams et al. (29), the traditional role of women as caregivers may also explain the variation in empathy level between the two genders.

Another study, conducted in the same University course in 2015 (17), highlighted that both male and female students attending the third year of the nursing course showed lower mean BEES scores compared to students of this second study. This different result can be justified by a recent modification of the education program in the nursing course, represented by the introduction of training films followed by reflective debriefing sessions focused on empathy in care.

Limits and advantages

This study has some limits. It was conducted in only one Italian University, so its results cannot be generalised. The BEES is a self-reported measure of empathy and its use is restricted to few studies, although it is easy and quick to administer. Nevertheless, this study is one of few longitudinal studies, and certainly is the only Italian study on student empathy. Our findings provide important information that could help to better understand the potential of students to develop and maintain an empathic attitude towards patients during the nursing course.

Conclusions

This study suggests that empathy can be enhanced during the nursing education, especially if nursing teaching and internship are focused on this topic, acting up the innate aptitude of each individual. In fact, the students of our sample, especially males, showed an improvement and not a decline of their empathic capacities at the end of the nursing course. Further longitudinal and multicentre research is needed to confirm the efficacy of nursing education in improving empathy in students.

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Ethical considerations: The study was authorized by the Director of the Nursing Degree Programme and was conducted in accordance with the Ethical Principles for Medical Research Involving Human Subjects-the Declaration of Helsinki.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Reynolds WJ, Scott B, Jessiman WC. Empathy has not been measured in clients' terms or effectively taught: a review of the literature. J Adv Nurs 1999; 30: 1177-85.

2. McCabe C. Nurse-patient communication: an exploration of patients' experiences. J Clin Nurs 2004; 13: 41-9.
3. Doyle K, Hungerford C, Cruickshank M. Reviewing tribunal cases and nurse behaviour: putting empathy back into nurse education with Bloom's taxonomy. Nurse Educ Today 2014; 34: 1069-73.
4. Hemsley B, Sigafoos J, Balandin S, et al. Nursing the patient with severe communication impairment. J Adv Nurs 2001; 35: 827-35.
5. La Monica EL, Wolf RM, Madea AR, Oberst MT. Empathy and nursing care outcomes. Sch Inq Nurs Pract 1987; 1: 197-213.
6. Alligood MR. Empathy: the importance of recognizing two types. J Psychosoc Nurs Ment Health Serv 1992; 30: 14-7.
7. Reynolds WJ, Scott B. Do nurses and other professional helpers normally display much empathy? J Adv Nurs 2000; 31: 226-34.
8. Yu J, Kirk M. Measurement of empathy in nursing research: systematic review. J Adv Nurs 2008; 64: 440-54.
9. Del Canale S, Louis DZ, Maio V, et al. The relationship between physician empathy and disease complications: an empirical study of primary care physicians and their diabetic patients in Parma, Italy. Acad Med 2012; 87: 1243-9.
10. Gleichgerrcht E, Decety J. Empathy in clinical practice: how individual dispositions, gender, and experience moderate empathic concern, burnout, and emotional distress in physicians. PLoS One 2013; 8: e61526.
11. Hojat M. Empathy in patient care: antecedents, development, measurement, and outcomes. New York: Springer; 2016.
12. Petrucci C, La Cerra C, Aloisio F, Montanari P, Lancia L. Empathy in health professional students: a comparative cross-sectional study. Nurse Educ Today 2016; 41: 1-5.
13. Ozcan CT, Oflaz F, Sutcu Cicek H. Empathy: the effects of undergraduate nursing education in Turkey. Int Nurs Rev 2010; 57: 493-9.
14. Fields SK, Mahan P, Tillman P, Harris J, Maxwell K, Hojat M. Measuring empathy in healthcare profession students using the Jefferson Scale of Physician Empathy: health provider - student version. J Interprof Care 2011; 25: 287-93.
15. Ouzouni C, Nakakis K. An exploratory study of student nurses' empathy. J Health Sci 2012; 6: 534-52.
16. Bidone S, Beneventi M, Larghero E, Di Pietrantoni C. La tendenza empatica negli studenti del corso di laurea in infermieristica: risultati di uno studio osservazionale. [Empathic tendency in nursing students: results of an observational study]. Riv Inf 2014; 51: e8-e13.
17. Ferri P, Guerra E, Marcheselli L, Cunico L, Di Lorenzo R. Empathy and burnout: an analytic cross-sectional study among nurses and nursing students. Acta Biomed 2015; 86 (Suppl 2): 104-15.
18. Kahriman I, Nural N, Arslan U, Topbas M, Can G, Kasim S. The effect of empathy training on the empathic skills of nurses. Iran Red Crescent Med J 2016; 18: e24847.
19. Williams J, Stickley T. Empathy and nurse education. Nurse Educ Today 2010; 30: 752-5.
20. Lown BA, Rosen J, Marttila J. An agenda for improving compassionate care: a survey shows about half of patients say such care is missing. Health Aff (Millwood) 2011; 30: 1772-8.
21. Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: hypothesis and experimental approach. Med Hypotheses 2017; 107: 92-7.
22. Aström S, Nilsson M, Norberg A, Winblad B. Empathy, experience of burnout and attitudes towards demented patients among nursing staff in geriatric care. J Adv Nurs 1990; 15: 1236-44.
23. Wilczek-Rużyczka E. Empathy vs. professional burnout in health care professionals. J US China Med Sci 2011; 8: 526-32.
24. Norfolk T, Birdi K, Walsh D. The role of empathy in establishing rapport in the consultation: a new model. Med Educ 2007; 41: 690-7.
25. Adriaansen M, Van Achterberg T, Borm G. The usefulness of the Staff-Patient Interaction Response Scale for palliative care nursing for measuring the empathetic capacity of nursing students. J Prof Nurs 2008; 24: 315-23.
26. Di Lorenzo R, Venturelli G, Spiga G, Ferri P. Emotional intelligence, empathy and alexithymia: a cross-sectional survey on emotional competence in a group of nursing students. Acta Biomed 2019; 90 (Suppl 4): 32-43.
27. Jolliffe D, Farrington DP. Examining the relationship between low empathy and bullying. Aggressive Behav 2006; 32: 540-50.
28. Galán González-Serna JM, Romero Serrano R, Morillo Martín MS, Alarcón Fernández JM. Descenso de empatía en estudiantes de enfermería y análisis de posibles factores implicados. Rev Psicol Educ 2014; 20: 53-60.
29. Williams B, Brown T, McKenna L, et al. Empathy levels among health professional students: a cross-sectional study at two universities in Australia. Adv Med Educ Pract 2014; 5: 107-13.
30. Cunico L, Sartori R, Marognolli O, Meneghini AM. Developing empathy in nursing students: a cohort longitudinal study. J Clin Nurs 2012; 21: 2016-25.
31. Ferri P, Rovesti S, Padula MS, D'Amico R, Di Lorenzo R. Effect of expert-patient teaching on empathy in nursing students: a randomized controlled trial. Psychol Res Behav Manag 2019; 12: 457-67.
32. McKenna L, Boyle M, Brown T, et al. Levels of empathy in undergraduate nursing students. Int J Nurs Pract 2012; 18: 246-51.
33. Nunes P, Williams S, Sa B, Stevenson K. A study of empathy decline in students from five health disciplines during their first year of training. Int J Med Educ 2011; 2: 12-17.
34. Wilson SE, Prescott J, Becket G. Empathy levels in first- and third-year students in health and non-health disciplines. Am J Pharm Educ 2012; 76 (Article 24).
35. Ward J, Cody J, Schaal M, Hojat M. The empathy enigma: an empirical study of decline in empathy among undergraduate nursing students. J Prof Nurs 2012; 28: 34-40.
36. Sherman JJ, Cramer A. Measurement of changes in empathy during dental school. J Dent Educ 2005; 69: 338-45.

37. Hojat M, Vergare MJ, Maxwell K, et al. The devil is in the third year: a longitudinal study of erosion of empathy in medical school. Acad Med 2009; 84: 1182-91.
38. Neumann M, Edelhäuser F, Tauschel D, et al. Empathy decline and its reasons: a systematic review of studies with medical students and residents. Acad Med 2011; 86: 996-1009.
39. Papageorgiou A, Miles S, Fromage M. Does medical students' empathy change during their 5-year MBBS degree? Educ Health (Abingdon) 2018; 31: 142-7.
40. Håkansson Eklund J, Holmström IK, Ollén Lindqvist A, Sundler AJ, Hochwälder J, Marmstål Hammar L. Empathy levels among nursing students: a comparative cross-sectional study. Nurs Open 2019; 6: 983-9.
41. Meneghini AM, Sartori R, Cunico L. Adattamento italiano della Balanced Emotional Empathy Scale (BEES) di Albert Mehrabian. [Italian adaptation of the Balanced Emotional Empathy Scale (BEES) by Albert Mehrabian]. Firenze: Giunti Organizzazioni Speciali; 2016.
42. Meneghini AM, Sartori R, Cunico L. Adattamento e validazione su campione italiano della Balanced Emotional Empathy Scale di A. Mehrabian. [Adaptation and validation on an Italian sample of the Balanced Emotional Empathy Scale by A. Mehrabian]. Ric Psicol 2006; 29: 123-52.
43. Meneghini AM, Romaioli D, Nencini A, et al. Validity and reliability of the Caregiving System Scale in the Italian context. Swiss J Psychol 2015; 74: 129-39.
44. Williams B, Brown T, Boyle M, et al. Levels of empathy in undergraduate emergency health, nursing, and midwifery students: a longitudinal study. Adv Med Educ Pract 2014; 5: 299-306.
45. Ferri P, Laffi P, Rovesti S, Artioli G, Di Lorenzo R, Magnani D. Motivational factors for choosing the degree course in nursing: a focus group study with nursing students. Acta Biomed 2016; 87 (Suppl 2): 19-27.
46. Magnani D, Di Lorenzo R, Bari A, Pozzi S, Del Giovane C, Ferri P. The undergraduate nursing student evaluation of clinical learning environment: an Italian survey. Prof Inferm 2014; 67: 55-61.
47. Artioli G, Cosentino C, Taffurelli C, Ferri P, Foà C. The narrative interview for the assessment of the assisted person: structure, method and data analysis. Acta Biomed 2019; 90 (Suppl 6): 7-16.
48. Artioli G, Cosentino C, Foà C, Sarli L. Inter-Professionalism in Health Care Post-graduate specialization: an innovative Laboratory. Acta Biomed 2019; 90 (Suppl 4): 8-16.
49. Ferri P, Rovesti S, Panzera N, Marcheselli L, Bari A, Di Lorenzo R. Empathic attitudes among nursing students: a preliminary study. Acta Biomed 2017; 88 (Suppl 3): 22-30.
50. Ozcan CT, Öksüz E, Oflaz F. Improving empathy in nursing students: a comparative longitudinal study of two curricula. J Korean Acad Nurs 2018; 48: 497-505.
51. Christov-Moore L, Simpson EA, Coudé G, Grigaityte K, Iacoboni M, Ferrari PF. Empathy: gender effects in brain and behavior. Neurosci Biobehav Rev 2014; 46: 604-27.
52. Preston SD, de Waal FB. Empathy: its ultimate and proximate bases. Behav Brain Sci 2002; 25:1-20.
53. Hojat M, Axelrod D, Spandorfer J, Mangione S. Enhancing and sustaining empathy in medical students. Med Teach 2013; 35: 996-1001.

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Effects of Expressive Writing on organizational variables in Palliative Care health Professionals: an explorative study

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Abstract. *Background and aim:* Healthcare professionals working in palliative care are exposed to emotionally intense conditions. Scientific literature suggests Expressive Writing as a valid tool for the adjustment to traumatic events. For health workers, EW represents an important support to prevent Compassion Fatigue and Burnout. As literature showed that Compassion Satisfaction, Group Cohesion and the Organizational Commitment are protective factors able to counter the onset of Compassion Fatigue and Burnout, the aim of this study is evaluating the effect of Expressive Writing protocol in Palliative Care workers on Compassion Satisfaction, Group Cohesion and Organizational Commitment. *Methods:* A quasi-experimental quantitative 2x2 prospective study was conducted with two groups and two measurements. 66 professionals were included. Outcome variables were measured using: Organizational Commitment Questionnaire, Compassion Satisfaction Rating Scale, ICONAS Questionnaire, Questionnaire for the evaluation of EW sessions. *Results:* The parametric analysis through Student t test did not show statistical significance within the experimental group and between the experimental and control groups. One significant difference in the pre-intervention assessment of Normative Commitment t (gl 64) = -2.008 for $p< 0.05$, higher in the control group, disappeared in the post intervention evaluation. An improvement trend in all variables within and between groups was present, with a positive assessment of utility from the participants. *Conclusions:* This intervention did not significantly impact outcome variables. It is however conceivable that by modifying the intervention methodology, it could prove effective. The positive evaluation by the operators, suggests to keep trying modelling a protocol tailored on Palliative Care professionals. (www.actabiomedica.it)

Key words: Expressive Writing, Palliative Care Professionals, Compassion Satisfaction, organizational Commitment, Group Cohesion

1. Introduction

The healthcare professionals working in palliative care are daily exposed to emotionally intense situations both from the point of view of the work load and of the emotional weight that terminal patient care requires. The Palliative Care professionals work in teams to reach personalized outcomes based on the needs of the patient and his/her family members so as to accompany them in the critical phases of pathologies with poor prognosis and in the terminal phase of the disease.

The scientific literature suggests the Expressive Writing (EW; 1) is a valid tool for the adjustment of the person to traumatic events, and for the prevention of stress-related health problems, acting on the psycho-physical well-being of those who use it. The EW is an intervention aimed at processing stressful situations and difficult emotional episodes through the personal production of a text written in one or more sessions.

Studies conducted up to now using EW have shown satisfactory results: positive effects on mood (1), and on the immune system (2). Furthermore, EW protocols have proven effective on mild forms of depression (3), on anxiety (4), on eating disorders (5), on different types of post-traumatic stress (6), on stress and satisfaction in the workplace (7). In the healthcare context, the effectiveness of EW has been demonstrated in cancer patients for the reduction of emotional distress (8) and in patients affected by HIV (9).

A recent study carried out on health workers has shown that EW represents an important support to prevent and manage the effects of Compassion Fatigue (CF) and decrease the incidence of Burnout (BO) by improving the use of individual coping strategies (10). For CF we mean a psychological disorder commonly caused by the knowledge and closeness with the pain of others (11) while BO indicates a stress condition, referred to the operator who provides assistance, caused by uncontrollable factors present in the workplace and characterized by dissatisfaction towards the career, emotional exhaustion, and depersonalization.

Studies have shown that CF and BO negatively affect the psycho-physical well-being and the performance of healthcare professionals in Palliative Care: past clinical experiences, physical exhaustion, the experience of a traumatic event, the discomfort towards colleagues, the emotional exhaustion, and social isolation, are all factors that determine the appearance of CF and BO (12).

Compassion Satisfaction (CS), Group Cohesion (GC) and the Organizational Commitment (OC) are the protective factors that are able to counter the onset of Compassion Fatigue and Burnout.

The CS includes the positive effects that an individual can derive from working with suffering people, including positive feelings with respect to helping others, contributing to the good of society and more generally the pleasure of "doing the job well"; in fact it turns out to be a protective factor for professionals who work in contact with death, but only if they have the right awareness and skills in dealing with these situations (13).

The Group Cohesion (GC) indicates the degree of union of the individual within a group, generating an influence and a positive interaction between the various members; the Organizational Commitment (OC) promotes a positive feeling that indicates the quality of the bond that the individual establishes with his / her own organization. These factors are able to moderate stress and its symptoms in the professional, enhancing adaptive coping strategies. Both the GC and the OC, are effective in decreasing the negative effects of Burnout and Compassion Fatigue, increasing instead the Compassion Satisfaction in the professionals (14)

It has been shown that in the healthcare staff the increase in CF and BO (negative factors) correspond to a decrease in CS (protective factor); these factors depend on the area in which the professional operates and on the characteristics of the work. Palliative care is, in fact, significantly involved in the negative relationship between CS and BO and CS and CF (14).

The tendency to develop adaptive coping strategies positively influences the CS and negatively influences the appearance of BO; from this it is clear that the professional who shows the greatest inclination to the development of effective coping strategies (above all spiritual reflection with regard to death and mourning) also matures preventive defense mechanisms against Burnout (15).

The effectiveness of Expressive Writing in contexts with a high level of emotional stress has been confirmed, but still we want to investigate whether its use by Palliative Care professionals can lead to an increase in protective factors such as Compassion Satisfaction, Group Cohesion and Organizational Commitment, thus bringing positive repercussions both for the professional and for the organization of the work structure, the management of costs and resources (16).

2. Aims

Primary aim: to evaluate the effect of the Expressive Writing protocol in Palliative Care workers on the levels of Compassion Satisfaction, Group Cohesion and Organizational Commitment.

Secondary aims: to evaluate the professionals' perception of usefulness of the Expressive Writing protocol.

3. Methods

A quasi-experimental quantitative 2x2 prospective study was conducted with two groups (experimental group Expressive Writing / control group Neutral Writing) and two measurements: pre / post with a one-week interval (17).

3.1 Sample

A sample of 66 (10) participants was selected through a balanced sampling of convenience by setting. Palliative care professionals included: Nurses, Health Care Workers, Physicians, and Psychologists working at Palliative Care Operational Units (Hospice, territorial network services) in Northern Italy.

The participants met the following criteria:

- Fluently spoken and written Italian;
- Expressed willingness to participate in the study, after signing the informed consent;
- Working at least 24 hours a week without interruption for at least 6 months (18).

3.2 Instruments

To evaluate the effect of EW intervention on the selected variables (GC, OC, and CS), the following scales were used:

a) Organizational Commitment Questionnaire (19): composed of 25 items with a 6-point Likert scale response - from 1 = completely disagree to 6 = completely agreed - which merge into 3 corresponding independent subscales: Affective Commitment, which collects 10 items; Continuance Commitment, which collects 7 items; Normative Commitment, which collects 8 items.

b) Compassion Satisfaction Rating Scale taken from the Professional Quality Of Life Scale (13): composed of 10 items with a Likert scale response of 5 points from 1 (never) to 5 (very often); each participant must consider the statements regarding himself / herself and his / her current situation and select the answer that has been true in the last thirty days.

c) ICONAS Questionnaire (Organizational Climate Survey in Healthcare Facilities) for the assessment of the organizational climate within the Unit, composed of 15 items with a self-anchored scale (a continuum with two extreme values from 1 “Low / Low” to 10 “Very / High”);

d) Questionnaire for evaluating the usefulness of EW sessions: built ad hoc in order to evaluate the usefulness of writing in relation to the constructs investigated in a short time, in the last days after the first session. It consists of four questions:

1) How useful is the EW experience?

2) Have you felt relief after using EW in the last few days?

3) Did you feel uncomfortable using EW?

4) Would you advise someone to use EW?

For each question the participant is asked to place a cross on the item that identifies the perceived usefulness of the writing: not at all, a little, enough, a lot. This tool will be only used in the post-test phase with the participants who joined the EW group.

3.3 Procedure

The study was divided into two phases:

Phase 1:

An identification code was assigned to the participants and they were subdivided with block randomization into two groups: EW experimental group and Neutral Writing (NW) control group.

Phase 2:

Session 1: the participants of both groups completed a socio-demographic questionnaire and three scales for the evaluation of the outcome parameters. Subsequently each participant was given a writing mandate lasting 15 minutes based on the group to which he was assigned (EW vs NW).

Session 2: after a minimum interval of one day and a maximum of three days, the participants were invited to a second writing session, with the same mandate as the previous one.

Session 3: after a minimum interval of one day and a maximum of three days the same scales of session 1 were administered. The ad hoc questionnaire was also administered to the experimental group.

3.4 Expressing Writing Protocol

The core tools of this study are the EW and the

NW. There are two writing sessions required for both groups; the first during the first administration of the socio-demographic questionnaire and the scales for assessing the outcomes; the second is requested after a minimum interval of one day and a maximum of three days. In the EW intervention, the participant was asked to write for 15 consecutive minutes about traumatic, stressful and emotionally significant events, concerning his own professional life. In the mandate of NW, used as a control tool, the subject was asked to describe in a more objective way an event that has occurred without dwelling on emotions, thoughts and feelings.

3.5 Ethical Considerations

The study was conducted in accordance with the ethical principles of the Helsinki Declaration (http://www.wma.net/e/policy/b3.htm).

The study received approval from the Ethics Committee of the Area Vasta Emilia Nord on 10.10.2018.

The study participants were informed in detail by the investigator on the aims and procedures of the study, and signed a specific informed consent to the study and processing of personal data, which was archived together with the study documentation.

4. Results

The data was collected and sorted using Excel and the statistical analysis was performed using the SPSS 21 software.

66 participants were recruited, divided into 2 research groups: Expressive Writing (Expressive Writing, EW; N = 35) and Neutral Writing (Neutral Writing, NW; N = 31). Female participants constitute 68.2% while male 31.8%.

The age of the participants was divided into 4 clusters: 18-25 years, 26-35 years, 36-45 years, 46-65 years. The 34.8% of participants are in the 26-35 age cluster; the 62.1% of the sample is composed of nurses.

To verify the normal distribution of the collected data, Asymmetry and Kurtosis were calculated, which for these variables had an absolute value less than 1, thus confirming a distribution sufficiently compliant with the normality curve and justifying the use of parametric analyzes.

4.1 Baseline Evaluation

The Student's t test for independent samples was applied to assess the presence of significant differences between the two groups in baseline. A statistically significant difference between the two groups occurred only with regard to the level of Normative Commitment t (gl 64) = -2.008 for $p < 0.05$.

The EW group has an average base value of 20.37 while the NW group has a value of 24.13.

4.2 tTest within subjects EW

Having verified the normal distribution of the data, we applied the Student's t test for paired samples for an analysis within the group in reference to the experimental group of EW.

From the analysis of EW group's means no significant difference between PRE and POST emerged, although a slight tendency towards improvement was shown for the more strictly organizational variables, as shown in Table 1.

4.3 tTest between subjects EW/NW

For the analysis POST between groups we used the Student's t test for independent samples. No significant differences were noted in the means of the two independent samples.

The means referring to the five variables investigated POST intervention in groups 1 (EW) and 2 (NW) are indicated in Table 2.

Following the intervention of EW the difference in the assessment scale of the Normative Commitment of the two groups (EW / NW) is no longer significant.

4.4 Multiple Regression

To investigate the effect of the independent variables on the dependent variables, a multiple stepwise backwards regression was carried out by inserting factors such as age, training and sex. Once the prerequisites were verified, the test showed that the only vari-

Table 1. Mean values PRE and POST EW intervention

	Affect.Comm	Cont. Comm.	Norm. Comm	Comp. Sat	ICONAS
Mean (PRE)	39,11	20,83	20,37	37,91	105,86
Mean (POST)	39,60	22,00	21,29	37,91	106,86

Table 2. Mean values POST EW and NW

	Affect.Comm	Cont. Comm.	Norm. Comm	Comp.Sat	ICONAS
Mean POST EW	39,60	22	21,29	37,91	106,86
Mean POST NW	38,35	23,55	23,32	38,61	107,90

Table 3. Effect of Age on AC

Model				Std. Coefficients	t	Sign.
		B	Std. Error	Beta		
1	**(Constant)**	32,780	2,043		16,048	0,000
	Age	2,512	0,730	0,395	3,442	0,001

able that affects one of the investigated constructs is age.

Age has a significant effect on Affective Commitment with R2 =, 16 for p =, 001; β =, 395 for p =, 001 (Table 3)

From the regression it emerges, therefore, that the age range of the respondents explains 16% of the variance of the Affective Commitment. In particular, carrying out multiple Bonferroni comparisons, a significant difference emerges between the group 2 (26-35 years) and group 4 (46-65 years), reposted in Table 4. The average difference is significant at the level 0.05.

Table 4. Bonferroni test for mean differences

AC		
Bonferroni		
(I) Age		Mean difference (I-J)
2	4	$-7,92^{*}$
4	2	$7,92^{*}$

4.5 Subjective Evaluation EW

The subjective rating scale administered only to the participants of EW group has a minimum score of 4 and a maximum of 16. The 38.2% reported a score equal to 11 which indicates an almost positive evaluation of the intervention while 20,6% gave a score between 12 and 13. 5.9% gave a score of 14, evaluating the intervention of EW very positively. Only 2.9% of the sample reported a negative evaluation of the intervention with a score of 4. In the graph below the percentages based on the frequencies are reported (Figure 1).

5. Discussions

The aim of this study was to test the hypothesis that a specific protocol of Expressive Writing, in contexts of high level of emotional stress as in Palliative Care professionals, could be effective in increasing the level of Compassion Satisfaction (CS), Group Cohe-

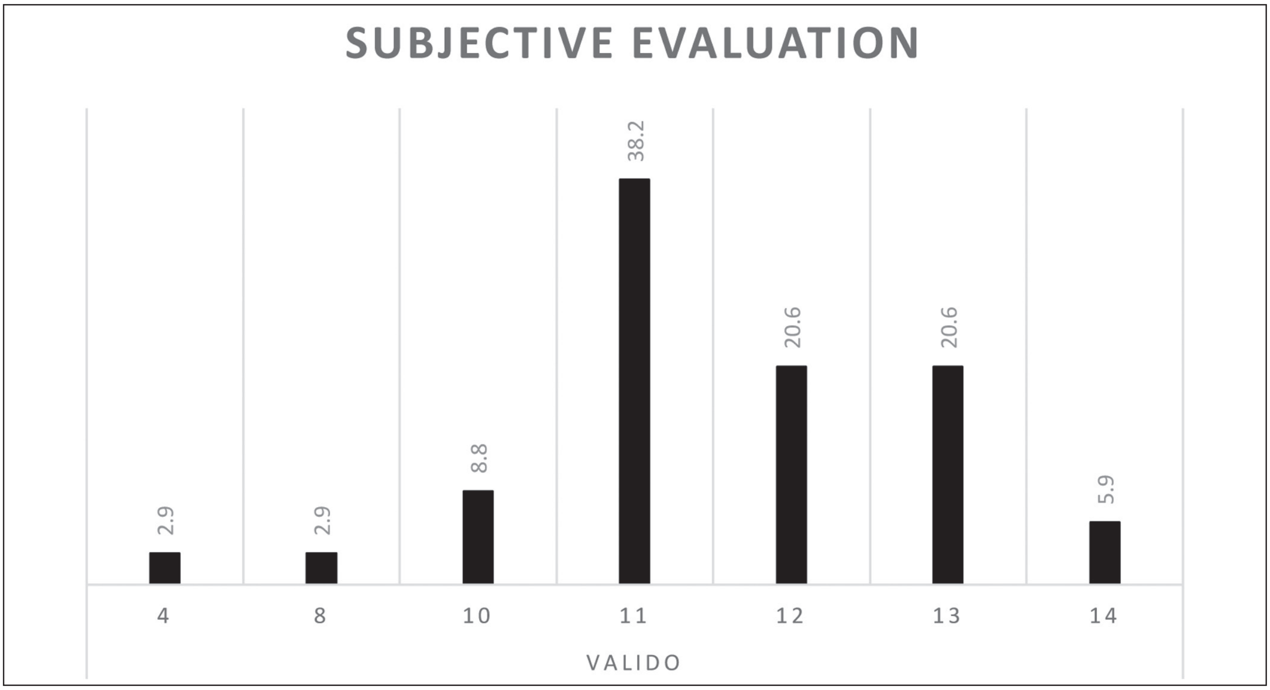

Figure 1. Percentage of Subjective evaluation answers

sion (GC) and Organizational Commitment (OC), protective factors with respect to Compassion Fatigue (CF) and Burnout (BO).

The analysis within groups and between groups showed no significant difference between the pre and post writing intervention. This result, therefore, requires the confirmation of the null hypothesis: it is possible to state that the present research protocol did not produce a significant result on the variables examined.

However, the results concerning the subjective evaluation of the participants who experienced the EW protocol, had a mostly positive response, as they perceived the writing experience as useful, feeling relief after its use. In fact, only 2.9% of the sample reported a negative evaluation of the intervention with a score of 4.

The difference in the effect of the intervention on the organizational variables here examined with respect to the variables already examined in the literature, mainly of a strictly individual nature, is certainly evident. The method we used (20), was structured with two measurements and two intervention sessions, ie the participants were subjected to a first writing session, for 15 minutes consecutively, after completing the questionnaires in the baseline, and, at a minimum distance of 1 day and a maximum of 3 days, a second writing session. Then, at a distance of at least 1 day maximum 3 days, they were asked to complete the same post-intervention questionnaires to evaluate its effectiveness. It is conceivable that by exposing the sample to EW sessions that are more prolonged over time, the result about the benefit may be more significant. In the literature other studies have used different methods for the intervention, that is by performing 3 writing sessions and a follow-up one month from the last session (10). Also in this study it was asked to write continuously for 20 minutes for three consecutive days, obtaining a positive result with respect to the study hypothesis, namely that the EW positive impacts on adaptive coping strategies and perceived job satisfaction. Again, “Expressive writing to improve resilience to trauma: A clinical feasibility trial” (21), is a study in which 39 participants, who reported emotional or physical trauma in the previous year, received an intervention of 6-week expressive writing achieving positive results by increasing resilience and significantly decreasing participants’ stress and depressive symptoms. In another study, 96 participants also wrote on three occasions for three weeks, obtaining a positive result with a reduction in post-traumatic stress (22). Apparently the time between one writing session and another seems to be significant in order to have a positive impact on the person who uses it. As supported by the theory of Pennebaker, using intervals of a week between sessions, leads in any case an overall greater effect than at intervals of a day, as the best benefits seem to occur during the days following the writing session (17). With reference to the data obtained in this study, it is possible to hypothesize that the duration of this intervention was not sufficiently prolonged in time to obtain a statistically significant result. By carrying out writing sessions once a week, for several weeks (17), it would have been possible to hypothesize a clearly superior benefit compared to the investigated constructs.

From the analysis carried out by Student's t on the values of the two populations in baseline, an interesting statistically significant difference emerged between the means of the Normative Committment of the EW group (20.37) and that of the NW group (24.13). It should be underlined also the presence of small variations between the two groups from pre to post intervention, in relation to the administration of EW.

It is possible to hypothesize that the EW intervention acted within the enlisted sample increasing the levels of Normative Commitment. It is therefore possible to hypothesize that a prolonged intervention time, could make this increase in the variables' value a statistically significant datum.

Having this study an exploratory character with respect to the application of this methodology of intervention (EW) on organizational variables, and not having been previously addressed in the scientific literature, it is necessary to analyze in depth the probable reasons for which the hypothesis of the study was found to be null.

The constructs investigated may vary according to the setting in which the operator works. For example, the Organizational Commitment evaluates the cohesion of the work group and the serenity of the dynamics in the team; the Home Assistance contexts do not provide this variable as much as present and decisive as the Hospice context, as the professional on the territory is less in contact with colleagues compared to a department / structure. So we can assume that some professionals do not work in a context that justifies a change in this variable.

Another remark, in addition to the way in which the writing sessions were carried out, is the way in which the participants were told to face the writing mandate; this in fact did not provide for a specific episode, but rather indicated to tell in a free way experiences / facts about the working activity. It is therefore legitimate to ask whether, indicating to the participants to argue on a topic concerning teamwork, organizational support and difficulties, there would have been different results. In fact most of the participants, both the EW sample and the NW one, told of situations / experiences related to the patients care, not addressing issues related to the context and the team.

In addition to this, it is advisable to reflect on the professionals recruited during the study. The sample is in fact composed of nurses (about 62% of the total), Health Care Workers (31.8%) and Physicians (6.1%) with a clear absence of the Psychologist. The Psychologist is an essential figure in the Palliative Care team and therefore understanding his/her role in the study actually means completing the range of professionals enrolled.

The data that emerged following the Multiple Regression shows the effect of the age on the Affective Commitment. Performing the multiple Bonferroni comparisons, a significant difference emerged between the group 2 (age group 26-35) and group 4 (age group 46-65) in the Affective Commitment. We can therefore hypothesize that this datum may also be linked to the years of professional service; group 4 represents the participants who are over 46 years of age and the fact that this variable positively influences the AC leads to think that a greater seniority within the organization can increase the emotional participation towards the organizational structure. Seniority, referring to both age and years of service in the same organization, can be considered, therefore, a directly influential factor on these questionnaires. An important disparity between these age categories (group 2 - group 4), as we have just noted, can be given by the ability of the worker to integrate with the organization and with the work group, from the ability to know how to relate and organize based on also to the experience gained. This relationship, therefore, between age and Affective Commitment, assumes a clear importance in a preventive perspective, considering that studies have shown that both older employees and younger employees develop a pre-established and generalized opinion, and therefore not based on direct experience of particular events; however, older employees seem to be vulnerable to these episodes and therefore are predisposed to a disengagement within the work unit. For older employees working in an inadequate or poorly organized setting where it is difficult to reap benefits, would prove to be a negative factor on job satisfaction, commitment and well-being, thus making them even more favorable to leave the workplace. This is because they are less likely to assess these threats as a challenge, something that could happen in a younger employee, willing to get involved and assert their values but also the ethical and professional values that concern the healthcare organization for which they work (23).

6. Conclusions

The data collected in this study confirm the null hypothesis: the Expressive Writing intervention did not have a statistically significant effect on the Organizational Commitment, Compassion Satisfaction and Group Cohesion.

The slight tendency towards improvement in the variables and the positive evaluation expressed by the participants of the group subjected to the EW, pushes us to carefully consider the limits of the study in order to offer a trajectory of real improvement for the purposes of future research.

Among the limitations of the study we find the reduced number of variables identified in performing the study compared to those actually taken into consideration during the course of the study. For example, to assess the effectiveness of the intervention the number of years in which the operator works as a health professional and in palliative care could be taken into consideration. It is possible that, considering more variables, the outcomes may be different as data measurement and analysis could be expanded.

Another consideration emerges with respect to the protocol, as a different one could be foreseen, organizing it differently from the one here proposed: in a future study more specific indications could be given in the assignment of EW and NW, focusing and identifying better the mandate of the two groups. The EW mandate could refer to a specific event with high emotional intensity occurred in the professional context, repeatedly analyzed during the writing sessions, to encourage the development of feelings and emotions. Furthermore, the mandate of the NW control group could be formulated so that the participants do not talk about work experiences in palliative care. In fact this could lead the participant to tell of an emotionally significant event, although not required in the delivery.

The time taken for the study may not have been sufficient to carry out the collection of questionnaires and writings: probably a greater number of writing administrations would have had a more significant effect (compared to the two sessions proposed by this protocol) in order to obtain more reliable results. Furthermore, the possibility of carrying out a follow-up at a later date could make the study more significant.

Even the methods of administration may have influenced the participants: the discomfort given by the time limit, related to less freedom of expression of the story, must be taken into consideration. Some participants may have needed more time or more comfortable space to process the work and proceed with the writing session in order to free their thoughts.

Finally, not in order of importance, we would have needed to collect more data in order to carry out this research in the best possible way. The number of participants and the lack of proportionate representation of the professional figures operating in palliative care teams does not make it possible to analyze data that can be generalized on all health professionals.

Replicating the study with the proposed suggestions could increase the value of the scientific method adopted to investigate the variables taken into consideration: thanks to the possibility of being replicated, verified and increased, the results could lead to an increased level of generalizability. Therefore, although this study has not brought to light significant evidence of effectiveness of the EW protocol on the improvement of the organizational variables investigated, we consider it appropriate not to abandon the research on this topic, but take it back and improve it, going to create more specific and useful protocol for the support of professionals working daily in palliative care.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

References

1. Pennebaker JW, Beall SK. Confronting a traumatic event: Toward an understanding of inhibition and disease. J Abnorm Psychol 1986; 95 (3): 274-281.
2. Pennebaker JW, Kiecolt-Glaser J, Glaser R. Disclosure of traumas and immune function: health implications for psychotherapy. J Consult Clin Psychol 1988; 56(2): 239-245.
3. Frattaroli J. Experimental disclosure and its moderators: a meta analysis. Psychol Bull 2006; 132(6): 823-865.
4. Van Emmerik AAP, Kamphuis JH, Emmelkamp PMG. Treating acute stress disorder and posttraumatic stress disorder with cognitive behavioral therapy or structured writing therapy: a randomized controlled trial. Psychother Psychosom 2008; 77(2): 93-100.
5. East P, Startup H, Roberts C, Schmidt U. Expressive Writing and Eating Disorder Features: a preliminary trial in a student sample of the impact of three writing tasks on eating disorder symptoms and associated cognitive, affective and interpersonal factors. Eur Eat Disord Rev 2010; 18(3): 180-196.
6. Hoyt T, Yeater E. The effects of negative emotion and expressive writing on post traumatic stress symptoms. J Soc Clin Psychol 2011; 30(6): 549-569.
7. Sadovnik A, Sumner K, Bragger J, Pastor SC. Effects of expressive writing about workplace on satisfaction, stress and well-being. J Acad Busin Econ 2011;11(4): 231-237.
8. Gallo I, Garrino L, Di Monte V. L'uso della scrittura espressiva nei percorsi di cura dei pazienti oncologici per la riduzione del distress emozionale: analisi della letteratura. Professioni Infermieristiche 2015; 68(1): 29-36.
9. Metaweh M, Ironson G, Barroso J. The Daily Lives of People With HIV Infection: A Qualitative Study of the Control Group in an Expressive Writing Intervention. Assoc Nurses AIDS Care 2016;27(5): 608–622.
10. Tonarelli A, Cosentino C, Artioli D, Borciani S, Camurri E, Colombo B, D'Errico A, Lelli L, Lodini L, Artioli G. (2017)Expressive writing. A tool to help health workers. Research project on the benefits of expressive writing. Acta Biomed 2017; 88(5): 13-21.
11. Fingley C. R. (editor) Compassion Fatigue. Coping with Secondary Traumatic Stress Disorder in those who treat traumatized. Routledge 1995; New York, London
12. Kase S, Waldman E, Weintraub A. A Cross-Sectional Pilot Study of Compassion Fatigue (CF), Burnout (BO), and Compassion Satisfaction (CS) in Pediatric Palliative Care (PPC) Providers (S704). J Pain Symptom Manage 2018; 55(2):657–658.
13. Stamm BH. Professional quality of life: Compassion Satisfaction and Fatigue version 5 (ProQOL). 2009
14. Slocum-Gori S, Hemsworth D, Chan WW, Carson A, Kazanjian A. Understanding Compassion Satisfaction, Compassion Fatigue and Burnout: a survey of the hospice palliative care workforce. Palliat Med. 2013 ;27(2):172-8.
15. Sansó N, Galiana L, Oliver A, Pascual A, Sinclair S, Benito E. (2015)Palliative Care Professionals' Inner Life: Exploring the Relationships Among Awareness, Self-Care, and Compassion Satisfaction and Fatigue, Burnout, and Coping With Death. J Pain Symptom Manage 2015; 50(2): 200–207.
16. Houck D. Helping nurse cope with grief and compassion fatigue: an educational intervention. Clin J Oncol Nurs 2013; 18(4): 454-458.
17. Smyth JM. Written emotional expression: effect sizes, outcome types, and moderating variables. J Consult Clin Psychol 1998; 66(1): 174-184.
18. Kaur A, Sharma MP, Chaturvedi SK. (2018) Professional Quality of Life among Professional Care Providers at Cancer Palliative Care Centers in Bengaluru, India. Indian J Palliat Care 2018; 24(2):167-172.
19. Allen NJ, Meyer JP. The measurement and antecedents of affective, continuance and normative commitment to the organization". J Occup Psychol 1990; 63: 1-18.
20. Tonarelli A, Cosentino C, Artioli D, Borciani S, Camurri E, Colombo B, D'Errico A, Lelli L, Lodini L, Artioli G. Expressive writing. A tool to help health workers of palliative care. Acta Biomed 2018;89(6): 35-42.
21. Glass O, Dreusicke M, Evan J, Bechard E, Wolever RQ. Expressive Writing to improve resilience to trauma: A clinical Feasibility trial". Complement Ther Clin Pract 2019; 34: 240-246.
22. Gallagher MW, Long LJ, Tsai W, Stanton AL, Lu Q. The Unexpected impact of Expressive Writing on post-traumatic stress and growth in Chinese american creats cancer survivors. J Clin Psychol 2018; 74(10): 1673-1686.
23. Von Hippel C, Kalokerinos EK, Haantera K, Zacher H. Age-based stereotype threat and work outcomes: Stress appraisals and rumination as mediators." Psychol Aging 2019; 30(1): 68-84.

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