Narratives in socio-environmental health: potentialities in health training

Narrativas em saúde socioambiental: potencialidades na formação em saúde

Rafaela Rodrigues da Silva¹, Jeffer Castelo Branco¹, Silvia Maria Tagé Thomaz¹, Nildo Alves Batista¹, Sylvia Helena Souza da Silva Batista¹

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ABSTRACT This paper discusses the potentiality of using narratives and field diaries for and in health education in the module ‘Encounters and Production of Narratives’ of the Work in Health Axis, which is part of the curriculum of Health Courses of the Health and Society Institute of the Baixada Santista Campus of the Federal University of São Paulo. Discourse analysis was used as a tool for analyzing field diaries and narratives from 2017 and 2019. Gradual changes promoted by narrative encounters linked to the social-environmental health content introduced in the module can be seen in the statements. The discourse in the diaries and narrative is permeated with polysemic gaps that give new meanings to the learning. Thus, a shift from the familiar and reproduction of the hegemonic become evident, adopting a perspective that advocates for the guarantee of rights, including the right to health, and expresses an expanded understanding of the health and disease process and its relationship to the socio-environmental issue.


RESUMO O presente trabalho visa a discutir as potencialidades do uso de narrativas e diários de campo para e na formação em saúde, no módulo de Encontros e Produção de Narrativas, do Eixo Trabalho em Saúde, que compõe o itinerário curricular dos Cursos de Saúde do Instituto Saúde e Sociedade do Campus Baixada Santista, da Universidade Federal de São Paulo. Utilizou-se a análise de discurso como instrumento de análise de diários de campo e narrativas produzidos em 2017 e 2019. No conjunto dos enunciados, é possível apreender mudanças graduais, promovidas pelos encontros narrativos articulados com conteúdos de saúde socioambiental introduzidos no módulo. O discurso nos diários e na narrativa é permeado de brechas polissêmicas, trazendo novos significados do aprendizado. Assim, apreendem-se movimentos de deslocamento do lugar comum, da reprodução do que está posto hegemonicamente, assumindo perspectivas comprometidas com a garantia de direitos, incluindo o direito à saúde, articulando a concepção ampliada do processo saúde-doença e sua relação com a questão socioambiental.

PALAVRAS-CHAVE Impacto ambiental. Educação interprofissional. Aprendizado ativo.

¹Universidade Federal de São Paulo (Unifesp) – São Paulo (SP), Brasil.
rafaela.rodrigues@unifesp.br
Introduction

Socio-environmental health is the study of the social impact resulting from the environmental conditions that act as determinants in the disease process and includes complex educational modalities of prevention, screening, assistance, cure, and social care aimed at a comprehensive health care approach based on health promotion\(^1\,^2\).

From this perspective, the training aims to provide students with the opportunity to develop a view beyond the management of disease toward a vision of health promotion, prevention, and screening that seeks ways to develop questioning thinking about the origins of disease intertwined with environmental issues. The opportunity to broaden the perspective of future professionals who'll work in a variety of professional settings helps to foster a critical awareness of social-ecological issues in health upon graduation.

The goal is to cover the undergraduate student's view of the environmental issue from the presentation of environmental problems that have occurred and are currently occurring with a focus in the social issue associated with these situations. Likewise, attention will be drawn to the importance of interdisciplinary action necessary to observe, understand, and act on these processes. Environmental problems are related to health and social issues, and it is important to bring this broader concept into professional training.

From a socio-environmental health perspective, education is needed that teaches broader, more complex practices that focus on the health needs of populations and their interactions with the environment and territories, including in socio-environmentally impacted communities, as explained by Augusto\(^3\,^{(107)}\):

A second important attitude of health professionals is to recognize the socio-environmental contexts in which populations live and work, and to identify therein the problems that are detrimental to both human health and the environment. Thus, we need an ecosystem operator to address health problems in their collective dimension.

Working with the environment-health-society tripod in health education consists in anchoring education in the concreteness of everyday life, and in the case of narratives, in addition to the facts, with the people who are directly or indirectly affected. Through life stories, then, we aim to understand the process of health and disease, taking the environmental issue as a starting point. Considering the approach of the common health clinic\(^4\), social-ecological health aims to add this dimension to the health clinic. In this way, a critical-reflexive understanding of socio-environmental health is created.

This study discusses the use of field diaries and narratives in health education based on experiences with transversal integration of socio-environmental health in interprofessional health education.

Methodology

Context and scope of the study

This study includes the partial results of a research under development, which focuses on the experience of transversal involvement of social and environmental health in the module ‘Encounters and Production of Narratives’ of the common Health Work Axis of the Institute of Health and Society (ISS) of the Federal University of São Paulo, Campus Baixada Santista.

The Health Work Axis aims to take a comprehensive look at the health-disease-care process and the Unified Health System (SUS)\(^4\,^5\,^{(244)}\,^6\,^7\). In the module Encounters and Production of Narratives, which is developed
in the third semester of the courses, activities related to health work are developed, including relationship facilitators and difficulties between professionals and health care users, limits faced by users and service workers, although the students are still in the condition of being educated\(^ {14,5}\).

This module has as general objective to:

Contribute to the construction of a common approach to the different professional areas, taking into account the reality experienced by people and the different dimensions of the health-disease-care process\(^ {8(132)}\).

It also seeks to promote a humanistic education of future health professionals by participating in the educational processes designed to prepare them to provide comprehensive health care and by rejecting the reduction of the subject to a purely biological condition\(^ {9}\).

Forty-one students from the six ISS courses (nutrition, psychology, social work, physical therapy, occupational therapy, and physical education) participated in the classroom activities that constituted the study. The students met with people affected by pollution and environmental contamination in their residential areas in the cities of Santos and Cubatão, in the metropolitan region of Baixada Santista, in the state of São Paulo.

In this proposal, students begin by listening to life stories and writing them down in field diaries and later elaborating on the text of the narratives, taking into account the context in which these stories are found and trying to trace and grasp the constituent factors of the historical moment in which the narrators meet. The narrators are people who live in marginal neighborhoods, on stilts, with poor sanitation, in areas with heavy environmental pollution and negative impacts.

These neighborhoods have suffered from environmental impacts for decades that are important for understanding socio-environmental health, primarily related to human exposure to chemical emissions from industrial port activities. These ‘chronic’ negative impacts were exacerbated by the 2015 fire at a fuel terminal near these communities, which resulted in days of heavy pollution, with serious public health impacts.

The other group of narrators was formed by workers of a chemical industry in the Cubatão region, who were exposed to persistent organic pollutants during the working day and were chronically intoxicated with hexachlorobenzene (HCB). Even today, more than 30 years after the event, these workers suffer social and health consequences of various kinds due to contact with this chemical compound.

**Data production process**

The narrative developed in this specific educational context is a hybrid composition: influence of the thematic oral history\(^ {10}\) and narrative medicine\(^ {11}\).

The narrative approach is used in the clinic as a tool that can facilitate the perception and interpretation of the meaning of the disease process, as a way for health professionals to add new statements to their interpretive repertoire, thus expanding the dialogic, hermeneutics, and integral dimensions of knowledge and clinical practice\(^ {12(481)}\).

Within the broader concept of the health-disease process, the use of narratives is considered to go beyond a clinical, purely biological perspective. In the context of the analyzed experience, it is also a resource for students’ understanding of social and health harms that result from ecological imbalances created by human actions in the environment.

Narrative was not the only form of analysis in this study. Field diaries were also used, written after each meeting, and their density of content – descriptive, reflective, and intensive
– is important to the study. The final report (or the narrative of an individual student) was also considered a field diary, as it represents material for reflection on the process.

From the perspective of Barber\textsuperscript{13}(133), the diary can be understood as:

A notebook in which people record what they feel, what they think, what they ponder, what they write poetry about, what they retain from a theory or a conversation, what they construct to give meaning to their life.

By exercising self-knowledge through the movement of self-writing, through the reflection of the lived encounters, stories, territories, through the effort to recognize their limitations and previously developed concepts, students have the opportunity to practice reflective criticism in working in the health field.

As a place to record experiences, the field diary has the power to generate new perspectives on the interactions and situations experienced, to engage with what concerns them. In the words of Spink\textsuperscript{14}(36):

When we do what we call field research, we do not ‘go’ into the field. We are already in the field because we are already on the subject. What we aim to do is to move psychosocially and territorially closer to the densest parts and sites of the multiple intersections and critical interfaces of the subject-field, where discursive practices confront each other and, when confronted, become more recognizable’ [emphasis by author].

In the educational experience under study, the field diaries not only tracked students’ reflections on the experience of the meetings, but also opened rifts in what was observed and what was unobserved, silences, mobilized affects, activated memories, and existential territories\textsuperscript{15}.

This study presents the discourse analysis of a couple’s narrative from 2017 and a student’s five field diaries from 2019. For the selection of these field diaries, the corpora that bring more reflections and student descriptions become so-called concepts-analysis.

Data analysis process

Discourse analysis views the text as a ‘monument’ into which cuts can be made in order to interpret the discourse inherent in the text, which is a “complex unit of meanings”\textsuperscript{16}(321). The way a text, created in a particular context and originating from a particular historical subject, is interpreted aims at meeting the research objective through thematic analysis in the context of social and environmental health.

Any discourse analysis is an interpretation of the meanings promoted by the discourses, by the words that circulate, in which the speaker speaks with the idea of producing a meaning for the receiver, who in turn may not interpret in the same way as the sender, because there is a conception of the world that influences the way the message is also internalized. We aimed to interpret and understand what the text meant in the context of this study, remembering that words do not have a meaning by themselves, but in the context of memory, as Orlandi\textsuperscript{17}(52) says, “it is the text that means”. Starting from the material surface of the text, the analytical movement of describing and interpreting the meaning of the text is undertaken.

The procedure proposed in this study was to analyze the paraphrases of the text, that is, the return to the same space of saying, with the matrices of meaning, similar to what Freire\textsuperscript{18} proposed. There is an intrinsic relationship between paraphrase, the return to existing meanings (which are more socially delimited, such as patriarchy) and polysemy, the possibility of breaking with what is said, the ‘new’ meanings for symbolic objects\textsuperscript{17,19,20}. That is, in the paraphrasing movement of discourse stagnated in meaning, polysemy can occur, indicating a tendency to deviate from sociocultural determinations, therefore,
from what is customary, because “despite the particularities, paraphrase and polysemy interpenetrate and press meaning between preservation and change”\textsuperscript{21(62)}, summarizing in the present context the expression of what was experienced in the field.

The study was approved by the Research Ethics Committee and received Certificate of Ethical Appreciation CAAE No. 81066017.3.0000.5505. The students and narrators were given code names of authors and characters from Brazilian literature.

Results

Exploring the field diaries

The analyzed diaries were written by Ana Aurora do Amaral Lisboa, from the Social Work course, and the narrator was Pedro Rubião, who was in a very fragile state of health and had a history of repeated strokes, sudden fainting spells, and weakness. The conversations focused on the industrial pollution he had experienced and the consequences on his health. The concepts of analysis that emerged were: polluted territory, health effects, case details, environmental justice, social-ecological issue and identification with the issue.

There’s so much evidence of the careless handling of health and inadequate working conditions caused by Rhd that it’s difficult to understand how the judiciary hasn’t yet completed these processes.

The words ‘difficult to understand’ indicate the injustice that seems obvious to the student. With regard to the motion filed by Pedro in the judiciary, Ana’s speech shows the discursive formation that contrasts with the length of the court proceedings. For the student, there is sufficient evidence that damage has been done that needs to be repaired, that justice needs to be established in favor of the narrator. She argues that there is documented evidence of pollution and health effects that weaken the narrator, so justice is urgently needed.

And what’s really increasing is the fight, much fight that’s lasted more than 30 years, for a retreat of the company that arrived here, settled, made its profit and left everything behind. Unfortunately, this shows the reality in which our country still lives. Despite the progress in laws, both labor and environmental, they prove to be more on paper than in practice for companies, regulators and judges [...]. I was able to observe and report that everything I learned in the courses is far from being implemented when it comes to respecting workers, their labor or health rights, and I was able to witness how long it takes to get justice for those who are entitled to it. Very disturbing and sad!

As a learner, Ana Aurora takes a position that shows that experiencing the narrative encounter and knowing the whole process involved in the case contributed to reflection. In her position as a learning subject, her attitude changed from the uncritical belief in law compliance that she had learned in other places and courses, and the practical learning in this context touched her and triggered strong feelings. She found that in practice there were deficiencies in the enforcement of laws that she once believed would be followed to the letter if they benefited workers. This made her realize that there is another movement besides the laws themselves: There are people and powers that move in opposing interests.

Recently, we have observed changes in the environment caused by human activities that directly or indirectly affect the social and economic activities of communities, biota, aesthetic and sanitary conditions, and the quality of natural resources, as well as, in some areas, the health, safety, and well-being of the population and workers.
Ana’s statement is intended to stimulate reflection on socio-environmental health and, briefly, begins by referring to the socio-environmental issue in determinants and conditions of health. She lists various factors that affect the environment through human actions, including what she’s come to know (workers from some sectors, community activities). She does not limit the criticism to humans themselves and their actions in the environment, but wants to point out that there are effects of these actions on humans themselves, who are affected and influenced by them. The word ‘changes’ refers to adverse effects on the environment.

In the position of someone who is in the process of learning, Ana Aurora summarizes in the context of socio-environmental health to signal that there is an expanded understanding of environmental issues and the health and disease process that results from human actions that have caused imbalance and changes in the environment.

Since the beginning of the UC Encontros e Produção de Narrativas em Saúde Socioambiental, I was very happy to be placed in this room because my training in Occupational Safety and Environment Techniques would help me develop something that I didn’t know well enough yet, but it was in a context that I already knew, and so it would facilitate my learning in what was to come. Gathering strength, gaining muscles and energy to make the necessary confrontations to build a greater socio-environmental awareness that I’ll surely acquire [...].

The narrative suggests that there were changes in matters about which she thought she knew everything. Thus, it was not only a matter of writing a narrative that was challenging for her, but also of reviewing what she previously thought she possessed and what she thought she ‘already knew’. Such ‘necessary confrontations’ during the process were important for the student to reflect that there is always something to learn, even in areas where she considers herself knowledgeable. Ana Aurora left the quiet place she had occupied at the beginning of the module as she ‘develops a greater social and environmental awareness’.

The meaning that Ana Aurora expresses in her statement is that from the beginning she was open to the development of narratives on social-environmental health, since she had professional knowledge in the fields of environment and occupational safety, but there was a shift in the perception of what was already known. Therefore, added to the perspective of the meetings and classroom instruction was the challenge of re-elaborating what was already known about the environment.

Exploring the narrative

The analyzed narrative was by Aurélia Camargo and was written by the duo Rachel de Queiroz, from the Psychology course, and her partner Cecília Meireles, from the Social Work course. The concepts of analysis that emerged were: Health Conditions, Case Details, Health Impacts, Socio-environmental issues and Environmental Justice.

April 2, 2015, definitely changed the life of Aurelia: a fire that hit the fuel tanks of a company in the Alemoa neighborhood, Ultracrg, in Santos, on the coast of São Paulo. The fire, which broke out around 10 a.m., showed signs of destruction, and she, who’d just returned from the city center, could see the patch of smoke in the sky from afar. It was already clear that something had gone terribly wrong. The fear was great, the risk of an explosion, losing everything, the uncertainty of not knowing what was happening, were feelings that Aurelia shared with other residents of the area. There was a little information and much speculation, which led to widespread uncertainty and fear among the population.
The students place the reader in the subject of the fire and articulate what is written with what the episode means to the narrator. They begin with the impact on Aurelia’s life, which was permanent. They describe the contents of the tanks that contained fuel, the name of the company, and the location of the event, placing the recipient of the message in what it is all about. With the ‘signs of destruction’ they refer to the importance of the fire scenario, because from the tanks there were flames that would spread if the fire was not contained in time.

The duo conveys what the fire represented from the perspective of the narrator and the other inhabitants, as the feelings of fear and uncertainty were common to all. The use of expressions with opposite meanings, such as ‘little’ and ‘much’ when referring to information about what was happening, is meant to emphasize the effect on the inhabitants.

The same day there were new explosions. The fire lasted for long days before it could be contained, while all the pollution hovered over the entire community of Jardim São Manoel and the adjacent neighborhoods.

To point out that the consequences of the fire were much greater for residents living near the company’s premises, the students used words that refer to intensity: ‘all the pollution’.

In this way, the students want to point out the environmental injustice of having a fire in close proximity to the people in the community and its consequences in the air. Working with the notion of intensity with the reader, they have an idea of what the air quality was like on the days of intense environmental degradation (long days).

The news reported the absence of victims, but Aurelia was hospitalized the same day and needed medical attention, as did other residents of the affected neighborhoods. And unfortunately, she’s one of the numerous victims who felt and still feel the effects of the fire.

The duo’s narrative statement is meant to show that there were victims, the narrator herself being an example. The words ‘numerous victims’ represent the health consequences of the fire.

The students present a narrative discourse that there was a social and environmental injustice with Aurelia and many other people who were not recognized as victims, even though they suffer from the damage to this day.

**Discussion**

Gradual changes promoted by the narrative encounters between Ana Aurora Lisboa and Rubião can be seen in the statements, which are related to the social-environmental health content introduced in the module. This is confirmed by Capozzolo et al.⁵ and Goulart et al.²² when they speak of changes and transformations that occur in the educational process through narrative encounters.

As Morin²³(35) points out,

[...] where there’s ‘cultural heat’, there’s no rigid determinism, but stable and changing conditions. Just as physical heat means intensity/multiplication in the movement and encounters between particles, “cultural heat” can mean intensity/multiplication of exchange, confrontation, polemics between opinions, ideas, and conceptions. And if physical coldness means rigidity, immobility, immutability, then one can see that the softening of rigidity and cognitive immutability can be introduced only by ‘cultural heat’. [emphasis by author].

The liveliness created by dialogic encounters and the exchange of ideas between students and narrators with different life stories and perspectives and unfavorable socio-environmental circumstances contributes to the flexibility of the students’ field experience.
Ana Aurora gradually demonstrates the extent to which Rubião’s revelations contribute to her rethinking of the positions anchored in her concepts and her self-perception as a subject in transition. This process of reflection that Ana Aurora carries out with the help of the field diary is a pedagogical-didactic tool that encourages self-reflection, because:

learning introspection is part of learning clarity. The reflective faculty of the human mind, which enables it to contemplate itself as it unfolds [...]24(53).

And it is in line with meaningful learning, which, for Rogers25(323), is

[...] that which brings about a change, whether in the behavior of the individual, in the direction of the future action he chooses, or in his attitude and personality. It is a pervasive learning that is not limited to an increase in knowledge, but penetrates deeply into all aspects of their existence.

And as Pelizzari et al.26 explain, it is about the student's learning to learn, which moves toward the modification and/or extension of structures that enable the construction and reconstruction of knowledge. The student also shows interest in expanding on topics brought up at the meetings as she seeks more information, such as the details of the names of chemical products and their effects. Highlighting what Souza, Vilaça and Teixeira27(44) say,

Active methodologies are educational processes that promote critical-reflective learning, in which the participant experiences a greater approximation to reality and, as a result, receives a series of stimuli that can lead to a greater curiosity about the subject under discussion [...].

The use of a field diary in health education from a socio-environmental health perspective made it possible to observe the processes set in motion in each movement of the students in the module, thus representing the triangular relationship between the experience of encountering those who need health care, the articulation with the theoretical framework of the module, and the mediation by the professor in this process. As Vieira28 states, the diaries have the ‘sincerity’ factor, since there is no right and wrong. Therefore, there is more freedom when writing about fears, doubts, emotions and sensations that may not appear when sharing in a group with peers.

The narrative discourse of the pair of students is developed to represent the narrator’s perception of the health-disease process that resulted from the fire, as well as the changes that have occurred in Aurelia’s living conditions since then. The students point out that Aurelia’s position has changed and she now begins to see herself as a victim of the fire. She now has a different perspective, that of finding legal professionals who can support her in a claim for damages. This situation confirms Cunha29(187), who says: “When a person reports the facts that he or she is experienced, it is felt that he or she is reconstructing the path traveled and giving it new meanings”.

Narratives are considered a task that involves art, transcreation. Based on the fact that it is a feedback for the narrator, this narrative is usually constructed as the students perceive this narrator. The central theme of the narrative encounters, the fire and its consequences for individual and collective health, runs through the narrative. However, the description of the narrator, her personality, tastes, and perceptions of the facts were not disregarded in order to bring the person into focus and give her a leading role.

Aurora expresses her perception in the field diary that no matter how much she plans the meeting, there is the uncertainty factor inherent in actions between people,
that is, the meeting does not take place exactly as it is idealized, as it begins with the narrator, how he decides to share his memories, as well as what he conceals. If we follow Ana Aurora’s field diary from the first encounter with the narrator, noticing the process of estrangement, the resistance to previous certainties and those resulting from previous formations, as well as her perception of having left another person in the process, and even changes that are not perceived but are contained in the meaning of the discourse, there is a confirmation of what Capozzolo et al. say about health work in encounters and in the production of narratives:

[...] any health intervention takes place in a complex context involving those affected. Favorable conditions are not always a foregone conclusion, but often have to be created. But this is not a process without risks, the greatest of which is the possibility of being transformed in the end.

This possibility, referred to by the authors, can be observed in the way the narrative is elaborated, reflecting the forms of approach that have been built up, which include affection, attention, estrangement, and familiarity. In the field diary, in addition to the descriptive observations, the thoughts and feelings evoked by the narrative encounters are also presented in more detail, as all senses are intertwined and permeate professional health care practice.

Final considerations

Field diaries and narratives as pedagogical strategies and tools that mobilize creativity, sensitivity, and interest in what the other has to say about his or her health-disease process and life story are consistent with training that invites the trainee to co-author the training process. They are important allies in capturing emerging and relevant issues that can be brought into the health education process as material for study and analysis. There is also the dimension of individual feedback to the students, which opens up new possibilities of understanding and openness.

The discourse in the diaries and in the narrative is permeated by polysemic gaps, as it tends to give new meanings to learning. Thus, movements that abandon the familiar, the reproduction of the hegemonic, and adopt perspectives that advocate for the guarantee of rights, including the right to health, are perceived as articulating an expanded understanding of the health-disease process and its relationship to the socio-environmental issue.

It is important to develop future studies on the inclusion of socio-environmental health in health education in other educational contexts and from other methodological perspectives.

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Collaborators

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