

Research Article

**Structuring Green Prescriptions as a Formal Practice:
The Hidden Role of Operator–Patient Interactions****Droli Maurizio¹, Qualizza Stefano², Petricig Danila³ and
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Abstract

Green prescriptions are written recommendations provided by healthcare professionals during clinical consultations to promote health recovery or maintain well-being in a cost-effective manner. In Italy, this practice is not formally recognized within the healthcare system and therefore remains informal. Within this context, operator–patient interactions (OPIs) represent a largely underexplored dimension. This study seeks to identify OPIs that may facilitate or hinder the formalization of green prescriptions as an established healthcare practice. It draws on data from managerial research on green prescriptions conducted in the Friuli Venezia Giulia Region, Italy. Interactions were examined using Bales’ Interaction Process Analysis (IPA), distinguishing among: (a) general interactions related to the heterogeneity of prescription goals; (b) specific interactions associated with the sociodemographic diversity of professionals prescribing nature-based physical activity; and (c) dynamic interactions emerging across different stages of the prescription process. Dysfunctional interactions seem associated with the coexistence of prevention-oriented goals—often lacking a robust evidence base—and conventional pharmacological treatments grounded in strict evidence-based standards. Functional interactions were more frequently observed among female professionals practicing in smaller municipalities. Both interaction types coexist within the prescription process. Although limited by its partial examination of the complex and intangible nature of OPIs, this study indicates that formalizing green prescriptions requires strengthening functional interactions and mitigating dysfunctional ones. Policymakers seeking to enhance the effectiveness, efficiency, equity, and environmental sustainability of healthcare systems should consider OPIs an integral component of prescription practices.

Keywords: Physical well-being, Mental well-being, Informal work, Community medicine, One Health**Introduction**

Growing global exposure to pandemics, along with their significant socioeconomic consequences, has led policymakers to reassess and expand the preventive responsibilities of healthcare professionals [1]. Despite this progress and the increasing consolidation of the environmentally integrated frameworks One Health, EcoHealth, and Planetary Health, the institutionalization of emerging informal preventive practices remains limited, with few notable exceptions.

[2,3]. Within this practices, Green Prescriptions (GRx) have attracted increasing attention among healthcare professionals.

GRx were initially defined as written advice to engage in physical activity, provided by a healthcare professional during a clinical consultation, with the aim of enabling patients either to restore a healthy condition or to maintain health in an efficient and cost-effective manner [4]. To date, research on GRx has largely focused on the identification of best practices and implementation methods, thereby privileging performance-related variables [5,6]. Nevertheless, prescribing low-cost, widely accessible preventive activities—such as walking in natural environments—can be

viewed through a social justice lens as a means of leveraging Healthcare Professional–Patient Interactions (HPPIs) and democratizing access to prevention [7: 111].

HPPIs can be defined as “the process through which healthcare professional–patient communication is shaped by the way in which the communicating actors participate in problem-solving” [8: 164].

For example, the sociology of health has repeatedly highlighted the risk of losing contact with lived reality through the uncritical affirmation of the principle of rationality [9], particularly via the overuse of market-based models that are centred on the client rather than on the patient [10]. Other scholars have emphasised how the imposition of performance targets across all domains of social life may foster simplified and reductive interpretations of economic life and value attribution processes [6]. In light of this complementarity between social and technical dimensions, the present study relies on a minimal and essential quantitative base, with the aim of exploring the social dimensions of justice and power embedded in HPPI.

Issues of social justice and power that are not directly linked to the con-

sumption of goods and services have been examined for centuries within sociology. According to this tradition, the analysis of any complex phenomenon requires the adoption of three distinct yet complementary levels of observation: a general or holistic level [11], a particular or atomistic-segmentary level [12], and a processual or dynamic-relational level [13].

The objectives (O) of this study, which targets healthcare professionals registered with the Orders of Physicians, Surgeons, and Dentists (OMCeO), are as follows:

O1 (general level): to identify potential healthcare professional–patient tensions arising from physicians’ perceptions of the importance of green prescriptions for health-related purposes and from the degree of consensus surrounding this perceived importance.

O2 (particular level): to identify potential healthcare professional–patient tensions generated by the heterogeneity of the sociodemographic characteristics of physicians who show greater interest in prescribing nature-based physical activities, as emerging from processes of self-segmentation.

O3 (dynamic-relational level): to identify potential healthcare professional–patient tensions arising from the heterogeneity of physicians’ judgements regarding the importance of green prescriptions, as reflected in targeting processes.

O4 (managerial level): to identify potential healthcare professional–patient tensions associated with the heterogeneity of the stages involved in the prescription process.

The research hypotheses (RH) of this study posit that a set of healthcare professional–patient tensions—both functional and dysfunctional with respect to green prescriptions (GRx)—are generated by the informal practice of green prescribing and may be associated with the following dimensions:

RH1: the heterogeneity of the potential health-related purposes of green prescriptions and the degree of consensus surrounding these purposes;

RH2: the heterogeneity of healthcare professionals in terms of gender, age, and size of the municipality of residence;

RH3: the heterogeneity of the locations identified by healthcare professionals as most suitable for GRx purposes;

RH4: the heterogeneity of the stages involved in the prescription process.

METHODS

Healthcare professional–patient interactions and tensions as epistemic resources.

Bales [14], was among the first scholars to propose a systematic framework for the analysis of interactions. Specifically, the Interaction Process Analysis (IPA) approach developed by Bales conceptualises interactions as the modalities through which interpersonal communication within a group reflects the ways in which its members participate in decision-making processes [8]. According to the IPA framework, interactions comprise both a human or socio-emotional component and an action-oriented or task-related component.

The socio-emotional component can be further divided into twelve mutually exclusive categories, including six value-neutral categories, three categories indicating negative (dysfunctional) tension, and three categories indicating positive tension (functional to green prescribing). In its standard application, Bales’ analysis is conducted using textual, that is qualitative,

material. Nevertheless, subsequent studies [15] have successfully applied the Bales framework to the analysis of quantitative data, demonstrating its methodological flexibility and robustness.

The IPA approach is well established in both qualitative and quantitative research traditions and has been widely applied in healthcare settings [16]. In particular, it has been used to analyse the causes of patient disengagement from inpatient and outpatient care facilities, to examine strategies for improving adherence to dental health pathways among adult patients [17], and to enhance communication between healthcare professionals and older patients [18]. Several literature reviews, including [19–21], have synthesised the empirical evidence produced by studies adopting this approach.

The IPA framework developed by Bales is therefore primarily centred on the healthcare professional [22–24] and is well suited to the aims of the present study. Moreover, it allows for the categorisation of healthcare professionals’ behaviours according to six specific task-oriented dimensions, as outlined below.

Task-oriented behaviours

Providing information: the physician provides details regarding treatments, test results, and medical procedures.

Seeking information: the physician asks the patient for information about symptoms, medical history, lifestyle, and any concerns they may have. **Providing suggestions:** the physician recommends a course of action, such as lifestyle changes, medication, further diagnostic tests, or referral to other services.

Providing opinions: the physician offers a professional judgement or viewpoint on a medical issue.

Seeking opinions: the physician solicits the patient’s perspective or thoughts regarding their condition or the proposed treatment plan.

Clarifying: the physician ensures that the patient understands the information and recommendations provided, often by reformulating or summarising key points.

These categories enable an in-depth analysis of the dynamics of healthcare professional–patient interactions and contribute to improving communication with the aim of achieving better health outcomes. Within the same framework, the IPA approach also distinguishes between positive and negative socio-emotional behaviours.

Positive socio-emotional behaviours

Demonstrating empathy: the physician acknowledges the patient’s feelings and experiences, expressing understanding and compassion.

Providing reassurance: the physician offers words of comfort and security, helping to alleviate patient anxiety and to foster trust.

Building trust: through consistent, respectful, and transparent communication, the physician promotes a strong physician–patient relationship.

Negative socio-emotional behaviours

Misunderstandings: situations in which either the patient or the physician misinterprets the other’s communication, leading to confusion or frustration.

Dismissive behaviour: instances in which the physician appears disengaged or overlooks the patient’s concerns, potentially generating feelings of neglect or devaluation.

Frustration: moments in which the interaction becomes tense, often as a result of disagreements or unmet expectations on either side.

According to this approach, the identification and analysis of these behaviours may substantially enhance the quality of physician–patient interactions, thereby contributing to improved health outcomes and increased patient satisfaction. The present study focuses on task-oriented interactions as well as on socio-emotional interactions with both positive and negative valence.

Analytical Method: The Case-Study Approach

The *case-study* method refers to an empirical investigation that examines a contemporary phenomenon within its real-life context, particularly when the boundaries between the phenomenon and its context are not clearly defined [25]. Case-study research addresses situations in which numerous variables of interest exist relative to the available data. It typically employs multiple sources of evidence and often implements data triangulation, drawing on existing theories to guide both data collection and analysis (ibid.).

The primary aim of the case-study method is to understand a specific case in its uniqueness, complexity, and socio-economic context, rather than to generalise findings [26]. In the present study, the case-study method is employed to investigate how green prescriptions are implemented within healthcare practice—as an informal practice—and why potential tensions may arise within a highly structured professional context such as the healthcare services sector [27].

Research Area

The research area is the Friuli Venezia Giulia (FVG) region in northeastern Italy. A study conducted in 2011 [28] identified physiological benefits in children with asthma associated with participation in a mountain-based residential programme in the municipality of Sauris (altitude: 1,440 m above sea level). Notably:

The altitude of the resort hosting the programme in Sauris was considerably lower than the average altitude of 2,260.34 m a.s.l. [29] of similar climatic resorts in Western [30] and Eastern [31] Europe;

The duration of the Sauris programme was seven days (six nights), which was significantly shorter than the average duration of previous mountain-based programmes conducted over the preceding four decades [30,31], which averaged 50.41 nights [29];

The Sauris study identified partial self-repair of pulmonary tissue damaged by the pathology, although this effect was neither included among the primary outcomes nor examined in previous studies on mountain-based programmes.

A non-systematic review of the literature [32] explored some of the potential causes underlying the unexpected improvements observed in Sauris, yielding partially conclusive results. Additional preliminary clinical studies conducted in Fusine in Val Romana (900 m a.s.l.) [33] and in the Natisone Valleys, San Leonardo (190 m a.s.l.) [34] reported physiological benefits associated with participation in one-week forest-based programmes, which were:

- a. partly similar to those observed in Sauris;
- b. implemented at progressively lower altitudes; and
- c. conducted in locations distributed from east to west, covering the entire regional Alpine area in a relatively homogeneous manner.

On the basis of these findings, and supported by the scientific literature emerging from the field of *forest medicine* [35], the “first forest therapy experience in Italy” was effectively established [36, pp. 243–245]. This ini-

tiative operated in substantial continuity with the original model [37] and was subsequently recognised as a good practice in Europe [38].

Pilot Study and Database

Within the research area, a previous study [39] suggested a positive relationship ($R^2 = 0.8498$) between the perceived importance (“value”) of nature-based activities for prescriptive purposes and the statistical concentration of the judgments expressed by healthcare professionals. At a more specific level, the study highlighted the potential role of demographic variables in the implementation of green prescriptions. Group comparisons indicated, for example, that female healthcare professionals, compared with their male counterparts, attributed higher health potential to nature, as did younger professionals (ages 25–34). Spatial variables also appeared to play a role: healthcare professionals living in small municipalities assigned greater health benefits to nature than those living in larger cities. At a more dynamic level, the study suggested that healthcare professionals tended to attribute high importance both to green prescriptions and to environments characterized by the presence of forests for the same purpose. For these reasons, the results obtained from the previous study in the same research area were adopted as a quantitative foundation for conducting the present case study.

A semi-structured questionnaire consisting of 32 items was administered to healthcare professionals (HP) in the research area by the previous study. The study applied general, particular, and dynamic analytical criteria.

General level: the study assessed healthcare professionals’ overall knowledge and interest in prescribing nature-based physical activity. For the purposes of the pilot study, 15 structured questions were selected, with scores ranging from 1 (minimum) to 10 (maximum), evaluating the importance that medical professionals attributed to the specific aspects investigated for human health purposes. Based on the pilot results, the variables exceeding both the importance and concentration thresholds were: General Prevention (Prev_Gen), Prevention of Non-Communicable Chronic Diseases (Prev_NCD), Improvement of Quality of Life (Supp_QdV), Prevention of Addictions (Prev_Addict), Prevention of Psychiatric Disorders (Prev_Psych), and Support of Conventional Pharmacological Therapies (Support_Farma). Moreover, the importance (“value”) of individual judgments or perceptions recorded by HP and the statistical concentration of these judgments were positively correlated.

Particular level – Gender: male physicians assigned significantly lower scores than female physicians on the following items (see Table 4): Prevention of Oncological Diseases (Prevention_Onco: $\Delta M = -0.63$, $p = 0.05$), Prevention of Infectious Diseases (Prevention_Infect: $\Delta M = -0.87$, $p = 0.02$), Prevention of Occupational Diseases (Prevention_Occup: $\Delta M = -0.77$, $p = 0.05$), Prevention of Psychiatric Disorders (Prevention_Psych: $\Delta M = -0.65$, $p < 0.01$), and Support for Pharmacological Therapies (Support_Pharma: $\Delta M = -0.56$, $p = 0.02$).

Particular level – Age: physicians aged 25–34 showed greater interest in direct involvement in research activities (Interest_Join: $\Delta M = 2.05$, $p < 0.01$; $\Delta M = 1.45$, $p = 0.05$) compared with those aged 35–49 and over 65. They also assigned higher scores to the importance of scientific publications illuminating clinical effects associated with specific locations and trails (Importance_LocatScient: $\Delta M = 1.37$, $p = 0.02$) compared with physicians aged 35–49. Conversely, they assigned lower scores to Prevention_Onco ($\Delta M = -1.91$, $p = 0.05$) compared with physicians aged 50–65. Healthcare professionals aged 35–49 assigned lower scores to the presence of trees in prescribable locations (Importance_Trees: $\Delta M = -0.91$, $p = 0.06$) compared with those over 65.

Particular level – Place of residence: physicians living in small municipalities (5,000–19,999 inhabitants) assigned higher scores to the impor-

tance of green prescriptions for addiction prevention (Prevention_Addict: $\Delta M = 0.86$, $p = 0.02$) and to Importance_Trees ($\Delta M = 0.88$, $p = 0.03$) compared with those living in medium-sized municipalities (20,000–99,999 inhabitants). Compared with those living in large cities (>100,000 inhabitants), small-town physicians assigned higher scores to Importance_Trees ($\Delta M = 0.84$, $p = 0.05$), Importance_Locat ($\Delta M = 1.72$, $p < 0.001$), Importance_LocatScient ($\Delta M = 1.50$, $p = 0.01$), and Importance_LocatPub ($\Delta M = 1.65$, $p < 0.01$).

Dynamic level: A separate section of the questionnaire examined healthcare professionals’ responses to the question:

"Which type of natural environment would you suggest or recommend as the ideal setting for human health purposes?"
The response options were:

Marine environments; Urban and peri-urban green areas; Hills; Forests and woodlands at any latitude; High-altitude forests; Mountains above 1,500 meters above sea level; Natural or artificial caves; Other; "I don't know."

The pilot study revealed a clear preference for the following options: forests and woodlands at any latitude ($n = 76$, 47.5%), urban and peri-urban green areas ($n = 25$, 15.6%), hills ($n = 22$, 13.8%), and marine environments ($n = 21$, 13.1%). The remaining options received few preferences: high-altitude forests ($n = 1$, 0.6%), mountains above 1,500 m a.s.l. ($n = 4$, 2.5%), natural or artificial caves ($n = 1$, 0.6%), other ($n = 5$, 3.1%), and "I don't know" ($n = 4$, 2.5%). One healthcare professional (0.6%) did not express any preference.

RESULTS

The results obtained in relation to the research hypotheses IR1, IR2, IR3, and IR4 are presented below.

R1 – Results from a General Perspective: Interactions and Tensions Associated with the Importance of Green Prescriptions and Professional Consensus

IR1 postulated that a series of healthcare professional–patient tensions induced by this informal practice could be associated with the heterogeneity of potential objectives and the level of consensus regarding these objectives.

Table 1. summarises the results obtained from the general analytical model.

Interacting Objectives	Physician–Patient Interactions and Potential Tensions Induced by Nature-Based Physical Activity Prescriptions
General Prevention (Prev_Gen), Prevention of Non-Communicable Chronic Diseases (Prev_NCD) versus Support of Conventional Pharmacological Therapies (Support_Farma)	• Prescribing nature-based physical activity for Prev_Gen and Prev_NCD purposes does not require on-site scientific research, unlike prescriptions for Support_Farma. • Tensions induced by prescriptions for Prev_Gen and Prev_NCD are low or absent. • Tensions induced by prescriptions for Support_Farma are inversely proportional to the quality of the clinical study, publication, and the journal certifying them.
Improvement of Quality of Life (Supp_QdV) versus Support of Conventional Pharmacological Therapies (Support_Farma)	• Improving Supp_QdV is not considered a health-specific objective. • This objective is broader than Prev_Gen and Prev_NCD. • As such, conducting a clinical study is not required (Possible tensions induced by the heterogeneity of objectives achievable through green prescriptions).
Direct relationship between statistical concentration of importance judgments and the judgments themselves	• This relationship suggests the existence of pre-existing, embryonic knowledge among prescribing healthcare professionals. • It is unclear how much of this knowledge is evidence-based. • Evidence-based knowledge is itself in an embryonic state and is evolving rapidly. • The dissemination of content on green prescriptions via new media and AI raises serious concerns about potential misinformation (Possible tensions induced by heterogeneity of sources and the rigor of the scientific methods used to collect information).

Potentially negative tensions appear to be associated, for example, with the coexistence of prevention objectives that are not necessarily evidence-based and the integration of conventional pharmacological therapies, which are evidence-based. Further ambiguities and similar tensions seem to be linked to the exclusion of patient Quality of Life improvement from strictly health-related objectives. Finally, the direct relationship between the statistical concentration of importance judgments and the judgments themselves indicates, on one hand, a natural predisposition of physicians to prescribe nature-based physical activity; on the other hand, it

does not clarify which scientific knowledge, skills, and innate abilities are possessed by physicians that facilitate their prescription of nature-based physical activity.

3.2 R2 – Results from a Particular Perspective: Interactions Associated with the Segmentation Process.

IR2 concerned the possible existence of a series of physician–patient tensions induced by the informal practice of green prescriptions, related to segmentation by gender, age, and size of the municipality of residence.

Table 2. presents the results obtained from the particular analytical model applied in the study.

Socio-Demographic Variables	Physician–Patient Interactions and Potential Tensions Induced by Nature-Based Physical Activity Prescriptions
Female vs. Male Physicians	• Male physicians assigned lower importance to green prescriptions for the following objectives: Prevention_Onco, Prevention_Infect, Prevention_Occup, Prevention_Psych, and Support_Pharma. • Gender imbalances among the most interested physicians. • Gender-related differences in prescription objectives. • Potential gender-based tensions among interested physicians (more female than male supporters). • Possible physician–patient tensions due to gender imbalances among both prescribing physicians and prescription recipients. • Possible self-reduction of the overall impact of the prescription process.
Physicians aged 35–49 and over 65 vs. Physicians aged 25–34	• Lower interest in Interest_Join among physicians aged 35–49 and over 65 compared with those aged 25–34. Possible physician–patient tensions due to reduced proactivity in research by older physicians. • Lower interest among physicians aged 35–49 compared with those over 65 in the presence of trees in prescribable locations (Importance_Trees). Possible physician–patient tensions arising from the need to explain to patients the importance of tree presence in prescribable locations.
Physicians living in small municipalities (5,000–19,999 inhabitants) vs. medium municipalities (20,000–99,999 inhabitants)	• Higher importance scores for green prescriptions aimed at Prevention_Addict among physicians living in small municipalities compared with those in medium-sized municipalities. Possible territorial imbalances in prescribing processes for Prevention_Addict (medium municipalities: OUT; small municipalities: IN).
Physicians living in small municipalities (5,000–19,999 inhabitants) vs. large municipalities (>100,000 inhabitants)	• Higher importance scores among small-town physicians for tree presence (Importance_Trees), Importance_Locat ($\Delta M = 1.72$, $p < 0.001$), Importance_LocatScient ($\Delta M = 1.50$, $p = 0.01$), and Importance_LocatPub ($\Delta M = 1.65$, $p < 0.01$). • Higher importance scores for Prevention_Addict prescriptions in small municipalities compared with large cities. Possible territorial imbalances in the prescription process for Prevention_Addict.

Physician–patient interactions appear to be characterized by a series of socio-demographic imbalances. Interactions that are functional to green prescriptions are more frequently associated with female physicians residing in smaller municipalities, and vice versa.

R3 – Results from a dynamic perspective. Interactions and tensions associated with the type of environment identified as preferable for the prescription of nature-based physical activity.

In line with IR3, a set of physician–patient tensions induced by the informal practice of green prescribing may be associated with the type of physical environment—mountain, marine, or hilly—identified by healthcare professionals as most suitable for the prescription of nature-based physical activity.

Table 3. presents the results obtained through the dynamic analytical model adopted in this study.

Locational variables	Physician–patient interactions and potential tensions induced by the prescription of nature-based physical activity
“Woodlands and forests at any latitude” versus “Urban and peri-urban green areas”, “Hills”, and “Marine environments”	• A clear preference among physicians for environments characterised by the presence of woodlands and forests. Potential physician–patient tensions may arise from the limited consideration given to alternative types of natural environments. • A marked gap between preferences attributed to “Woodlands and forests at any latitude” and those assigned to “High-altitude woodlands and forests”, “Mountains above 1,500 m a.s.l.”, and “Natural and artificial caves”, potentially limiting the diversity of environments considered suitable for prescription.

The study identifies physician–patient interactions and positive tensions, that is, tensions functional to the prescription of mountain-based physical activity. However, it also highlights the potential emergence of physician–patient tensions in contexts where healthcare professionals are actively involved in studies assessing the clinical effectiveness of the other types of environments considered.

3.4. R4 – Managerial tensions

Following IR4, a set of physician–patient tensions induced by the informal practice of green prescription may be associated with the different phases of the prescription process.

Table 4a. presents the physician–patient interactions characterising the prescription process, with specific reference to the need to balance ethical principles and innovation.

Task-oriented interactions	General level <i>Importance–concentration</i>	Particular level <i>Socio-demographic segmentation</i>	Dynamic level <i>Environmental segmentation</i>
a. Providing information: the physician provides details on medical conditions, treatments, test results, and procedures.	Facilitation in providing additional information on green prescriptions for preventive purposes, due to the abundance of published studies not linked to specific sites. Difficulty in providing additional information on green prescriptions for Support_Pharma (evidence-based), due to the scarcity of locally conducted studies. • Inclusion of potentially non-medical objectives (Quality of Life).	• Potential penalisation of patients treated by male physicians, physicians outside the 25–34 age group, and physicians practising in municipalities other than small towns (5,000–19,999 inhabitants), who appear less inclined to consider green prescriptions important for health purposes.	• Potential penalisation of patients residing in municipalities within regions less endowed with forests and more distant from forested areas perceived as more attractive for green prescription purposes.
b. Seeking information: the physician asks the patient for information on symptoms, clinical history, lifestyle, and any concerns.	• Need to collect additional information on possible allergies and patients' environmental exposure factors.	• nr	• nr
c. Providing suggestions: the physician recommends a course of action, such as lifestyle changes, medications, further tests, or referrals.	• Ease in recommending outdoor walking activities. • Possible resistance to recommending forest-based physical activity due to the existence of climate-related risks.	• see above	• Possible recommendation of alternative areas.
d. Providing opinions: the physician offers professional judgement or viewpoints on a medical issue.	Gaps in physicians' training regarding medico-botanical aspects. • Difficulty in comparing results from studies conducted in this field due to limited familiarity.	• see above	• Possible recommendation of alternative areas.
e. Seeking opinions: the physician asks the patient for their perspective or thoughts regarding their condition or treatment plan.	• —	• see above	• Possible recommendation of alternative activities.
f. Clarifying: the physician ensures that the patient understands the information and recommendations provided, often by reformulating or summarising key points.	• —	• see above	• Possible negative tensions due to physicians' imperfect knowledge of the regional territory and to incomplete information.

The table identifies several interactions that may be dysfunctional to the prescription of nature-based physical activity by physicians, along with the resulting tensions. These include, for example, the limited availability of clinical evidence regarding the functional effectiveness of specific natural resources and locations, as well as the concentration of physicians favourable to the prescription of nature-based physical activity among female practitioners. Further dysfunctional interactions may arise from an imper-

fect knowledge of the natural resources available within patients' areas of residence, particularly in cases where physicians reside in a municipality different from the one in which they carry out their professional practice.

Table 4b presents physician–patient interactions and the related positive socio-emotional tensions.

Table 4b. Positive physician–patient tensions.

Positive socio-emotional interactions	General level <i>Importance–concentration</i>	Particular level <i>Socio-demographic segmentation</i>	Dynamic level <i>Environmental segmentation</i>
a. Demonstrating empathy: the physician acknowledges the patient's feelings and experiences, showing understanding and compassion.	• Possible difficulty for patients in sharing traumatic experiences, perceptions of risk, or similar concerns with their physician.	• see above	• nr
b. Reassurance: the physician provides words of comfort and security, helping to alleviate patient anxiety and to build trust.	• —	• see above	• nr
c. Building trust: through coherent, respectful, and transparent communication, the physician promotes a strong physician–patient relationship.	• Possible difficulty for physicians in synthesising interdisciplinary information (<i>Support_Pharma</i>).	• see above	• nr

Table 4b does not identify physician–patient interactions that are functional at this stage of the prescription process. However, it highlights the decisive role played by empathy and by specific physician personality traits associated with it in supporting the institutionalisation of green prescriptions.

Table 4c. Negative physician–patient tensions.

Negative socio-emotional interactions	General level <i>Importance–concentration</i>	Particular level <i>Socio-demographic segmentation</i>	Dynamic level <i>Environmental segmentation</i>
a. Misunderstandings: situations in which the patient or the physician misinterpret the other's communication, leading to confusion or frustration.	• Possible physician–patient misunderstandings due to the scarcity of supporting scientific evidence (<i>Support_Pharma</i>).	• see above	• nr
b. Dismissive behaviour: situations in which the physician appears disengaged or ignores the patient's concerns, leading to feelings of neglect or underestimation.	• Possible physician behaviours aimed at minimising psychological distress and patient resistance to engaging in forest-based physical activity (all patients).	• see above	• nr
c. Frustration: moments in which the interaction becomes tense, probably due to disagreements or unmet expectations on both sides.	• Possible frustration arising from minor inconveniences occurring during nature-based activities.	• see above	• nr

Table 4c summarises the interactions that are dysfunctional to the institutionalisation of nature-based physical activity prescriptions and that stem from inherently negative and pre-existing physician attitudes.

DISCUSSION

This study naturally presents certain limitations. For instance, it reduces the entire spectrum of healthcare professionals to the important, yet not exhaustive, category of medical doctors. Despite this limitation, no similar studies have emerged in Italy in the field of green prescriptions. Furthermore, the need for a revised edition of the study is identified in order to involve relevant healthcare professionals overlooked in the present research, such as psychologists and professionals in mental and psychophysical well-being. In addition, the full range of practitioner–patient interactions appears difficult to analyse through the conceptual frameworks and prescription-process analysis methods adopted in this study. Despite this limitation, physician–patient interactions triggered by green prescriptions represent a novel object of investigation within a field of research dominated by a purely performance-oriented approach [40]. Moreover, this study does not identify the causes underlying imbalances in the types of interactions and tensions associated with socio-demographic variables. It nevertheless calls for further research in this direction.

Table 1 suggests the existence of both positive interactions and tensions,

as well as ambiguity concerning the availability of supporting information and the capabilities existing among healthcare professionals that could be leveraged in order to institutionalise the prescription of nature-based physical activity in the sense indicated by some of the reference health institutions operating in the field of nature-based physical activity prescriptions [1–4].

Table 2 highlights how, paradoxically, larger municipalities may risk being disadvantaged by the institutionalisation of a nature-based physical activity prescription process that instead places smaller municipalities at an advantage. This finding suggests the existence of a social justice issue [5] in access to green prescriptions, this time to the detriment of residents in larger urban centres.

Table 3 suggests that practitioner–patient interactions functional to the prescription of forest-based physical activity may conflict with practitioners' previous experience in prescribing high-mountain physical activities, which are more deeply rooted in the tradition of mountain climate stays. This result identifies a methodological tension between evi-

dence-based and nature-based activities [41]. The present study proposes defining a green prescription as an evidence-based and nature-inspired activity.

Table 4a suggests that the interactions activated by the prescription process may be accompanied by ethical–professional value tensions and by evaluations concerning the safety of forest environments used as settings for physical activity. This finding emphasizes not only the *attractiveness* of the forest setting [42], but also its *competitiveness* as a site for clinical practice.

4b. Practitioner–patient interactions may be improved when the former helps the latter to share memories related to previous experiences of activities carried out in natural environments, whether in adulthood or during youth. Professional soft skills such as empathy prove even more important in enabling patients to share traumatic experiences linked to activities in nature. The quality of practitioner–patient interactions also appears decisive in influencing patients’ willingness to disclose personal memories and potential resistances rooted in their lived experience, which may underlie their decision whether or not to engage in physical activity in natural environments. The study identifies the absence of a theoretical–conceptual framework to support appropriate managerial-level analysis.

The institutionalisation of the practice of prescribing nature-based physical activity therefore requires health institutions willing to assume specific and additional responsibilities, including in a pandemic-prevention capacity [1]. The public visibility of social phenomena requires processes of abstraction and quantification, and these processes carry political implications for social organisation [9] and for the more explicitly political aspects of prescribing practices, particularly those related to individual, organisational, and institutional power.

The findings of this study suggest that the adoption of an analytical approach centred on performance, best practices, and methods—namely, a managerial approach focused on performance-related variables—is useful but insufficient unless complemented by an approach centred on practitioner–patient interactions and the tensions embedded within the.

CONCLUSION

The study highlights the role played by practitioner–patient interactions as either a “social accelerator” or a “social brake”, depending on whether such interactions are functional or dysfunctional within the green prescription process.

Individual sensitivities, ethical motivations, a sense of social justice, and a human inclination toward nature among a portion of practitioners currently appear to compensate for the lack of consolidated information regarding the effectiveness of nature-based physical activity for prevention, integration of conventional pharmacological therapies, and rehabilitation purposes. The findings of this study may facilitate the transition of green prescriptions from an unstructured informal practice to a structured and institutionalised formal practice.

Further research may investigate the perception of green prescriptions among health institutions. Such studies could assess whether these institutions consider green prescribing to be a medically meaningful act or, conversely, of limited relevance. Economic–organisational and institutional variables influencing such evaluations may also be examined in future research. The value-based tension between activism and passivity among decision-makers constitutes an additional interaction whose potential remains to be explored and further developed.

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Study design, data collection, and manuscript drafting: MD.
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