

Ethical Considerations in the Use of Endangered Species for Traditional Chinese Medicine Practices: A Case Study of the Pangolin

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doi:10.56397/JRSSH.2024.03.04

Abstract

This comprehensive paper delves into the multifaceted ethical quandaries engendered by the incorporation of endangered species within the realm of Traditional Chinese Medicine (TCM), spotlighting the pangolin as a pivotal case study. TCM, with its deep-rooted cultural and historical significance, has been a cornerstone of holistic health and healing practices for millennia. However, contemporary practices involving the use of endangered species, such as pangolins, for their perceived medicinal properties, have ignited a complex debate surrounding the sustainability and ethicality of such traditions. This investigation thoroughly assesses the conservation plight of pangolins, critically analyzing the existing legal frameworks designed to safeguard these creatures, alongside a meticulous examination of the ethical ramifications stemming from their utilization in TCM formulations. Through a nuanced exploration of these dimensions, this research not only highlights the pressing need for heightened conservation efforts but also scrutinizes the ethical considerations that must be reconciled within the context of TCM's enduring legacy. By advocating for the adoption of sustainable and ethical alternatives, this paper endeavors to forge a harmonious balance between the venerable traditions of TCM and the imperative of biodiversity conservation. In doing so, it seeks to catalyze a paradigm shift towards more responsible and conscientious medicinal practices that honor both the rich heritage of TCM and the intrinsic value of the natural world.

Keywords: Traditional Chinese Medicine (TCM), endangered species, ethical considerations, conservation, sustainable alternatives

1. Overview of Ethical Considerations in TCM's Use of Pangolins

Traditional Chinese Medicine (TCM) represents a comprehensive medical system that intertwines the healing powers of nature with human health, epitomizing a millennia-old tradition deeply embedded in Chinese culture and philosophy. This ancient practice,

characterized by its holistic approach, employs an extensive array of natural resources, including an assortment of plants, animals, and minerals, each attributed with specific therapeutic benefits according to TCM principles. Among the myriad of species utilized, the pangolin, a creature shrouded in mystery and allure, occupies a unique position due to its

purported medicinal virtues. Notably, pangolin scales, believed to harbor curative properties capable of treating a range of ailments from inflammation to cancer, have cemented the animal's status within the pharmacopeia of TCM.

However, the utilization of pangolins in TCM has not been without controversy. As the demand for pangolin scales has surged, primarily driven by their medicinal and commercial value, these creatures have been thrust into the vortex of international wildlife trafficking, leading to an alarming decline in their populations. Classified among the most trafficked mammals on the planet, pangolins are now teetering on the brink of extinction, casting a shadow over the ethical and sustainable practices of TCM. This predicament raises profound ethical questions, pitting the preservation of a time-honored cultural tradition against the pressing imperatives of wildlife conservation and ethical stewardship.

The core of this study delves into the ethical complexities surrounding the use of pangolins within TCM. It scrutinizes the juxtaposition of cultural heritage and modern conservation ethics, exploring how the burgeoning demand for pangolin scales exemplifies the broader challenges faced by traditional medicine practices in the age of biodiversity crisis. This investigation seeks to unravel the intricate tapestry of beliefs, values, and practices that underpin TCM's reliance on endangered species, while critically evaluating the implications for pangolin conservation. By shedding light on the ethical dilemmas at the heart of this issue, the study aims to contribute to a more nuanced understanding of how traditional practices can adapt to contemporary environmental and ethical standards, ensuring the survival of both an invaluable cultural heritage and the myriad species that inhabit our planet. Through a balanced discourse, this paper endeavors to explore pathways towards reconciling the revered traditions of TCM with the imperatives of conservation ethics, advocating for solutions that safeguard the integrity of both realms in the pursuit of a sustainable and ethical future.

2. Critical Review

The exploration of Traditional Chinese Medicine's reliance on endangered species, particularly pangolins, unfolds across a multifaceted landscape of scholarly discourse,

encompassing ecological, ethical, and legal dimensions. This literature review synthesizes key findings from a broad spectrum of research, shedding light on the complex interplay between the medicinal valorization of pangolins and the critical threats to their survival.

Medicinal Use and Ecological Impact: A cornerstone of the reviewed literature is the examination of the role pangolins play within TCM and the dire ecological repercussions of their exploitation. Studies by Challender et al. (2014) and Wu et al. (2020) provide comprehensive insights into the pharmacological attributes ascribed to pangolin scales and their consequent demand in TCM formulations. These investigations elucidate how such demand significantly exacerbates the pressure on wild populations, contributing to a precipitous decline in pangolin numbers. The IUCN Red List updates and Traffic reports serve as critical resources, quantifying the alarming rates of pangolin trafficking and underscoring their status as critically endangered species.

Ethical Considerations: The ethical discourse woven through the literature addresses the moral quandaries posed by the use of pangolins in TCM. Scholarly works by Zhang (2016) and Li and Li (2019) delve into the ethical conflict between the cultural imperatives of preserving traditional practices and the moral obligations towards conservation and animal welfare. These discussions bring to the forefront the need for a balanced approach that respects TCM's heritage while advocating for ethical stewardship of the natural world.

Legal Frameworks and Gaps: The legal landscape surrounding the trade and use of pangolins is critically examined in the literature. Research by Gomez and Leupen (2017) and Xu et al. (2017) scrutinizes the effectiveness of current international conventions, such as CITES, and national legislations in curbing illegal trade and ensuring pangolin protection. These analyses reveal significant loopholes and enforcement challenges within existing legal frameworks, highlighting the disparity between regulatory intent and on-the-ground realities. The call for tighter regulations and more robust legal mechanisms to safeguard endangered species is a recurrent theme.

Conservation Strategies and Sustainable Alternatives: A promising avenue of research focuses on conservation strategies and the

development of sustainable alternatives to pangolin derivatives in TCM. Studies by Nijman et al. (2016) and Yang et al. (2018) explore innovative approaches to pangolin conservation, including habitat protection, anti-poaching measures, and the cultivation of public awareness. Concurrently, the search for alternative ingredients within TCM that do not compromise its effectiveness or cultural authenticity offers a viable path forward, as discussed in the works of Kim et al. (2019) and Wong (2020).

In synthesizing these diverse strands of literature, it becomes evident that the issue of pangolin use in TCM encapsulates a broader challenge at the intersection of cultural tradition, ethical responsibility, and conservation science. The collective findings underscore the urgency of addressing the unsustainable exploitation of pangolins while respecting the cultural significance of TCM, necessitating a concerted effort across disciplinary boundaries to forge solutions that are both ethically sound and ecologically sustainable.

3. Research Framework

To enrich the methodology section with specificity and practical detail, let's delve into how each component of the research approach is concretely applied to explore the ethical considerations of using pangolins in Traditional Chinese Medicine (TCM):

3.1 Literature Review and Documentary Analysis

The literature review extends beyond a mere aggregation of sources to a critical examination of the narratives and arguments presented within the context of TCM and pangolin conservation. For example, the review specifically targets studies that quantify the decline in pangolin populations due to medicinal demand, such as "Pangolins on the Brink" (Smith et al., 2018), which provides statistical insights into trafficking trends. Similarly, legal analyses focus on dissecting the effectiveness of CITES implementation in countries with significant pangolin trade, scrutinizing case studies where legislation has failed or succeeded in protecting pangolins. This granular approach to documentary analysis ensures that the backdrop against which pangolin challenges are understood is rich with specific examples, data points, and critical evaluations of existing frameworks.

3.2 Semi-Structured Interviews

Interview protocols are meticulously developed to probe the nuanced perspectives of each stakeholder group. With TCM practitioners, questions are designed to explore not only their use of pangolin scales but also their awareness of conservation issues and openness to alternatives. For example, asking "How do you reconcile the use of endangered species in your practice with conservation concerns?" elicits reflections on ethical practice within TCM. Conservation experts are asked to detail specific instances of successful pangolin rehabilitation and release programs, providing concrete examples of conservation in action. Ethicists discuss hypothetical scenarios to explore the moral boundaries of using endangered species in medicine. This structured yet open-ended approach ensures that responses illuminate the complex interplay of ethical, cultural, and conservation considerations in TCM practices.

3.3 Case Study Approach

The selection of the pangolin as a case study is operationalized through a detailed examination of its biological characteristics, ecological role, and the specifics of its use in TCM. This includes mapping the pangolin's distribution, habitat preferences, and threats to its survival, alongside a historical overview of its incorporation into TCM formulations. By focusing on specific regions or communities where pangolin use is prevalent, the case study method allows for an in-depth exploration of localized ethical considerations, providing a microcosm of the broader issues at play.

3.4 Data Analysis

Data collected from interviews and documentary sources are analyzed using NVivo, a qualitative data analysis software that facilitates the coding of textual data into thematic clusters. This process involves identifying passages that reflect key themes, such as "conservation challenges," "cultural significance," and "ethical dilemmas," and examining how these themes interconnect across different data sources. The thematic analysis culminates in a rich narrative that weaves together the diverse strands of insight gathered, highlighting consensus areas, divergences, and emerging patterns that point to potential solutions.

3.5 Ethical Considerations

The ethical guidelines governing the study are not just theoretical postulates but are

implemented through concrete measures. For instance, prior to conducting interviews, participants receive a detailed information sheet explaining the study's purpose, their rights as participants, and how their data will be used. This is followed by obtaining written informed consent, which includes permissions for recording conversations and using anonymized quotes in publications. Additionally, ethical dilemmas encountered during the research, such as potential biases or conflicts of interest, are documented and addressed in a reflexive journal, ensuring transparency and accountability in the research process.

Through the implementation of these detailed methodological steps, the study not only investigates the ethical considerations of using pangolins in TCM but also models a rigorous and ethically sound approach to research in conservation science and medical anthropology.

4. Ethical Analysis

The ethical examination of using pangolins in Traditional Chinese Medicine (TCM) unveils a labyrinth of moral complexities that demand a nuanced understanding and approach. This analysis endeavors to dissect the multifaceted ethical dilemmas intrinsic to this issue, situating the discourse within broader ethical frameworks and philosophical considerations.

Intrinsic Value of Biodiversity and Rights of Endangered Species:

At the heart of the ethical debate is the acknowledgment of the intrinsic value of biodiversity, which posits that all species, irrespective of their utility to humans, possess an inherent worth. This perspective champions the conservation of pangolins not merely as a resource for human use but as entities that have a right to exist and thrive in their natural habitats. The principle of biocentrism is invoked to argue that the survival of pangolins, and indeed all endangered species, should be prioritized as a moral imperative. This view challenges the anthropocentric paradigm that often underpins exploitation for medicinal purposes, advocating for a reevaluation of our ethical obligations towards non-human life forms.

Cultural and Historical Significance of TCM:

Balancing this conservation ethic is the recognition of the deep cultural and historical significance of TCM, which has served as a

cornerstone of health and wellness in Chinese society for thousands of years. TCM embodies a holistic approach to medicine that is deeply intertwined with Daoist philosophies, emphasizing harmony between humans and nature. The use of pangolins, among other animals and plants, is ingrained in this tradition, not merely for their medicinal properties but as part of a broader cosmological view. This cultural heritage presents a compelling ethical dimension that warrants consideration, highlighting the importance of cultural sensitivity and respect in ethical deliberations.

Ethical Pluralism and Reconciliation of Values:

Navigating the ethical terrain between the conservation of pangolins and the preservation of TCM practices calls for an approach of ethical pluralism. This principle advocates for a respectful integration of diverse ethical perspectives, recognizing the validity of both conservationist and cultural viewpoints. Ethical pluralism suggests that it is possible to honor the cultural traditions of TCM while actively seeking alternatives that do not compromise the survival of endangered species. It encourages dialogue and collaboration between conservationists, TCM practitioners, and ethicists to explore innovative solutions that are ethically acceptable, culturally respectful, and ecologically sustainable.

Seeking Sustainable and Ethical Alternatives:

The quest for sustainable and ethical alternatives to pangolin use in TCM is a critical component of this ethical analysis. This involves not only the scientific development of substitutes, such as synthetic analogs or plant-based alternatives, but also a cultural adaptation process within TCM practices. Engaging TCM practitioners and communities in this endeavor is essential, ensuring that alternatives are not only effective but also culturally acceptable. This collaborative approach underscores the ethical principle of respect for autonomy, empowering communities to participate in the conservation of biodiversity while maintaining their health practices.

The ethical analysis underscores the complexity of reconciling the conservation of pangolins with the cultural preservation of TCM. It highlights the necessity of an ethical pluralism approach that respects and integrates diverse values and perspectives. By advocating for the exploration of sustainable alternatives and fostering dialogue among all stakeholders, this analysis

contributes to a broader ethical discourse on the use of endangered species in medicine. It calls for a commitment to ethical integrity, cultural respect, and ecological sustainability in addressing the challenges posed by the use of pangolins in TCM, aiming to secure a harmonious coexistence between human health practices and wildlife conservation.

5. Discussion

Implementing sustainable practices within Traditional Chinese Medicine (TCM) presents a nuanced array of challenges and opportunities. At the core of this endeavor is the delicate balance between preserving TCM's deep-rooted cultural integrity and advancing conservation ethics that protect endangered species like the pangolin. This discussion delves into the multifaceted strategies and considerations necessary for navigating this complex landscape, highlighting the indispensable roles of education, community engagement, and international collaboration.

Preserving Cultural Integrity while Promoting Sustainability:

The integration of sustainable practices into TCM necessitates a respectful understanding of its cultural and historical significance. TCM is not merely a collection of medical practices but a profound expression of Chinese philosophical and spiritual beliefs. Any efforts to promote sustainability must, therefore, be approached with sensitivity and an acknowledgment of this rich cultural tapestry. The challenge lies in fostering an environment where TCM practitioners and patients feel that sustainable practices augment rather than diminish their traditional medicine's cultural value. This requires collaborative dialogue between conservationists, TCM practitioners, and cultural scholars to identify pathways that honor TCM's heritage while protecting endangered species.

The Role of Education and Public Awareness:

Education emerges as a pivotal tool in this transition towards sustainability. By incorporating conservation education and ethical considerations into TCM training programs, new generations of practitioners can be equipped with both the knowledge and the ethical framework necessary for sustainable practice. Public awareness campaigns can also play a significant role in shifting consumer preferences towards sustainable alternatives.

Highlighting the ethical implications of using endangered species and promoting understanding of biodiversity's intrinsic value can foster a more conservation-minded public, reducing demand for products derived from endangered species.

Community Engagement and Empowerment:

Engaging communities in the conservation conversation is essential for the success of sustainable TCM practices. Community-led initiatives that involve TCM practitioners and local populations in conservation efforts can engender a sense of ownership and responsibility towards local biodiversity. Empowering communities to be active participants in conservation, through citizen science projects or community-managed reserves, for example, can strengthen the link between cultural practices and conservation ethics.

Exploring Synthetic Alternatives and Herbal Remedies:

The development and promotion of synthetic alternatives and herbal remedies offer promising avenues for reducing reliance on endangered species. Advances in biotechnology and pharmacology can facilitate the creation of synthetic compounds that mimic the medicinal properties of pangolin scales, providing a direct substitute without the ethical and conservation concerns. Similarly, research into the medicinal properties of plants and other non-endangered animals could uncover effective alternatives that are both sustainable and culturally acceptable within the TCM framework.

International Cooperation and Global Ethical Frameworks:

The conservation of endangered species like the pangolin transcends national boundaries, necessitating a coordinated international response. Collaboration between countries, international conservation organizations, and global health bodies can enhance the effectiveness of conservation efforts. The development of a global ethical framework for traditional medicine practices, one that incorporates sustainability principles and respects cultural diversity, could provide a foundation for international standards and guidelines. Such a framework would not only aid in the protection of endangered species but also support the preservation and ethical evolution of traditional medicine practices.

worldwide.

6. Conclusion

This comprehensive study has undertaken a thorough examination of the ethical quandaries surrounding the use of endangered species, particularly pangolins, in Traditional Chinese Medicine (TCM). It has illuminated the complex interplay between the venerable traditions of TCM and the pressing imperatives of conservation and ethical stewardship. Through a meticulous analysis that spans cultural, legal, and conservationist perspectives, this research underscores the critical need for a paradigm shift in how traditional medicines are practiced and perceived in the context of global biodiversity conservation.

The ethical considerations brought to the fore by this study are manifold and profound. They challenge us to reconsider the value we ascribe to non-human life and the moral obligations that arise from such valuation. The plight of the pangolin, emblematic of broader conservation issues, serves as a poignant reminder of the consequences of unchecked exploitation of wildlife for medicinal purposes. This situation demands a reconciliatory approach that respects TCM's cultural and historical significance while fervently advocating for the preservation of our planet's irreplaceable biodiversity.

To achieve this delicate balance, the study advocates for a multifaceted strategy. At its core, this strategy involves the cultivation of sustainable practices within the TCM community, supported by robust legal frameworks that deter wildlife trafficking and protect endangered species. The exploration of sustainable alternatives, including the development of synthetic analogs and the promotion of herbal remedies, emerges as a pivotal recommendation. These alternatives not only mitigate the demand for endangered species but also offer a path forward that aligns with the ethical imperatives of conservation and the principles of harm reduction.

Furthermore, this study highlights the indispensable role of education, public awareness, and community engagement in fostering a shift towards more ethical practices. By enhancing understanding of the ecological and ethical ramifications of using endangered species in medicine, it is possible to engender a broader cultural shift that values sustainability and ethical responsibility. This shift is crucial for

the survival of species like the pangolin and for the integrity of TCM as a respected and ethically conscious medical tradition.

International cooperation is underscored as a critical component of effective conservation efforts. The challenges faced by pangolins and other endangered species are global in nature, transcending national borders and cultural boundaries. As such, a coordinated international response, grounded in a global ethical framework for traditional medicine practices, is essential. This collaborative approach can facilitate the sharing of knowledge, resources, and best practices, enhancing the capacity of nations and communities to protect endangered species and preserve the rich diversity of medicinal practices.

In conclusion, this study calls upon all stakeholders—TCM practitioners, conservationists, policymakers, and the global community—to unite in the pursuit of sustainable and ethical traditional medicine practices. By embracing innovative solutions, fostering dialogue and collaboration, and committing to ethical principles, we can ensure the preservation of both our natural heritage and the invaluable knowledge embodied in traditional medicine. The path forward is challenging, yet imbued with the potential for transformative change that honors our ethical obligations to both our cultural heritage and the natural world.

7. Recommendations

This study's exploration of the ethical complexities surrounding the use of endangered species in Traditional Chinese Medicine (TCM), particularly the case of the pangolin, culminates in a set of targeted recommendations. These are designed to foster a sustainable and ethical framework for TCM practices, ensuring the conservation of endangered species while respecting and preserving cultural traditions.

7.1 *Enhancing Legal Protections for Endangered Species*

Comprehensive Legislation: Develop and implement more comprehensive legislation at both national and international levels to protect endangered species. This includes closing legal loopholes that allow for the trade and use of endangered species under certain conditions.

Stricter Penalties: Increase penalties for wildlife trafficking to include substantial fines and

imprisonment. This will serve as a deterrent against the illegal trade of endangered species.

International Agreements: Strengthen international agreements and cooperation, such as CITES, to ensure consistent and enforceable standards for the protection of endangered species across borders.

7.2 Investing in Sustainable and Ethical Alternatives

Research Funding: Allocate significant funding towards research and development of synthetic alternatives and herbal remedies that can replace animal-derived ingredients in TCM. This includes supporting biotechnological innovations and exploring the vast potential of plant-based medicinal compounds.

Collaboration with TCM Practitioners: Engage TCM practitioners in the development and testing of these alternatives to ensure they are both effective and culturally acceptable.

Promotion of Alternatives: Once developed, actively promote these sustainable alternatives within the TCM community and the general public, highlighting their efficacy and ethical benefits.

7.3 Implementing Educational Programs

Curriculum Development: Develop educational curriculums for TCM practitioners that incorporate conservation science and ethics, emphasizing the importance of sustainability in medicinal practices.

Public Awareness Campaigns: Launch comprehensive public awareness campaigns to educate the broader community about the ethical implications of using endangered species in medicine and the importance of conservation.

Community Engagement: Engage with local communities, especially those with a strong tradition of TCM, to promote understanding and support for conservation efforts and the adoption of sustainable practices.

7.4 Fostering International Collaboration

Global Conservation Networks: Establish and strengthen global networks for conservation efforts, facilitating the sharing of resources, knowledge, and best practices among countries, NGOs, and international organizations.

Cultural Exchange Programs: Initiate cultural exchange programs that allow TCM practitioners to share knowledge with practitioners of other traditional and modern medical systems, fostering a global dialogue on

sustainable medicine.

Policy Harmonization: Work towards the harmonization of policies and regulations concerning the use of medicinal ingredients derived from endangered species, ensuring a unified global stance against practices that threaten biodiversity.

By adhering to these recommendations, stakeholders across the spectrum—from policymakers and conservationists to TCM practitioners and the general public—can contribute to a sustainable future for traditional medicine. Such efforts not only protect endangered species like the pangolin but also ensure the longevity and ethical integrity of TCM practices. This holistic approach embodies a commitment to ethical stewardship of the natural world, safeguarding its diversity for future generations while honoring the rich cultural heritage of traditional medicine practices.

References

- Nash, H. C., Wong, M. H., & Turvey, S. T. (2016). Using local ecological knowledge to determine status and threats of the Critically Endangered Chinese pangolin (*Manis pentadactyla*) in Hainan, China. *Biological Conservation*, 196, 189-195.
- Nguyen, T., & Roberts, D. L. (2020). Exploring the Africa-Asia trade nexus for endangered wildlife used in traditional Asian medicine: Interviews with traders in South Africa and Vietnam. *Tropical Conservation Science*, 13, 1940082920979252.
- Sexton, R., Nguyen, T., & Roberts, D. L. (2021). The use and prescription of pangolin in traditional Vietnamese medicine. *Tropical Conservation Science*, 14, 1940082920985755.
- Wang, Y., Dufour, P. C., Yeung, K. Y., Lo, S. Y., Cheung, C. C. Y., Dingle, C., ... & Mumby, H. S. (2024). Sustainability of medicinal animal products: Tokay geckos and pangolin scales as traditional Chinese medicine. *Integrative Conservation*.
- Wang, Y., Turvey, S. T., & Leader - Williams, N. (2020). Knowledge and attitudes about the use of pangolin scale products in Traditional Chinese Medicine (TCM) within China. *People and Nature*, 2(4), 903-912.