

Enhancing Veterinary Health Care Services In Mizoram: A Decadal Analysis And Educational Imperatives

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Abstract

This research article presents a comprehensive analysis of veterinary health care services in Mizoram over a decade, from 2009 to 2019, with a focus on the educational implications for veterinary professionals and students. The study examines four key parameters: the number of cases treated in outpatient departments (OPD), the number of castrations performed, the number of artificial inseminations conducted, and the number of vaccinations administered. The data is analyzed to identify trends, patterns, and areas for improvement in veterinary health care services, emphasizing the need for enhanced educational frameworks. The findings are presented in three rigorous statistical tables, followed by detailed analysis and discussion, including insights gathered from a survey of stakeholders.

Keywords: Veterinary, Outpatient, Health Care Services, Educational Framework, Survey.

Introduction

Veterinary health care is a cornerstone of agricultural productivity and rural livelihoods, particularly in regions like Mizoram, where livestock farming is integral to the economy and culture (Kumar et al., 2018).

(Singh & Bhatia, 2018) explored the potential of technology in improving veterinary health services in rural India. They highlight the challenges faced by rural veterinary services, including limited infrastructure, inadequate skilled personnel, and poor access to diagnostic facilities. Their study suggests that technology, such as mobile apps, telemedicine, and online platforms, can enhance veterinary health services in rural areas which can further facilitate remote consultations, improve access to diagnostic facilities, and enable the sharing of knowledge and expertise among veterinary professionals. They conclude that the effective integration of technology into veterinary health services can lead to better health outcomes for livestock, improved productivity, and increased income for rural farmers.

Challenges and opportunities faced by veterinary healthcare services in rural India were studied (Choudhury & Dutta, 2020). The study concludes that addressing the challenges and leveraging the opportunities can improve the delivery of veterinary healthcare services in rural India, ultimately benefiting the livelihood of farmers and the health of livestock. As the demand for veterinary services continues to rise, it becomes increasingly imperative to equip veterinary professionals with the necessary knowledge and skills to meet these challenges (Rai & Gupta, 2021). However, despite these advancements, there remain significant gaps in service delivery, particularly in rural and remote areas where access to veterinary care is limited.

This study aims to analyze the trends in veterinary health care services in Mizoram over a ten-year period, highlighting the educational implications for veterinary training programs. Furthermore, this research seeks to identify areas for improvement in veterinary education, ensuring that graduates are well-prepared to address the evolving challenges in animal health care. The findings of this study will not only contribute to the existing body of knowledge on veterinary health care in Mizoram but also serve as a valuable resource for policymakers, educational institutions, and veterinary professionals. By understanding the current state of veterinary services and the educational requirements of the sector, stakeholders can work collaboratively to enhance the quality of veterinary care, ultimately benefiting the agricultural sector and the livelihoods of rural communities.

Methodology

The data for this study was meticulously collected from the Department of Animal Husbandry and Veterinary Services, Mizoram. The dataset spans from the fiscal year 2009-10 to 2018-19 and encompasses information on four critical

parameters: the number of cases treated in outpatient departments (OPD), the number of castrations performed, the number of artificial inseminations conducted, and the number of vaccinations administered. This comprehensive dataset provides a robust foundation for analyzing trends in veterinary health care services over the specified period.

To ensure the accuracy and reliability of the data, the study employed a systematic approach to data collection. The Department of Animal Husbandry and Veterinary Services provided access to official records and reports, which were then compiled and organized for analysis. The data was categorized by year and parameter, allowing for a clear comparison of trends over time. This methodical approach ensured that the analysis was based on accurate and up-to-date information, reflecting the true state of veterinary health care services in Mizoram.

In addition to quantitative data analysis, a comprehensive questionnaire was disseminated to 300 stakeholders from Aizawl district, including veterinary professionals, farmers, government officials, and representatives from non-governmental organizations (NGOs). The questionnaire was designed to gather qualitative insights on the effectiveness of veterinary health care services and the educational needs of the sector. Questions focused on various aspects of veterinary services, including accessibility, quality of care, and the perceived effectiveness of current educational programs for veterinary professionals.

The survey was conducted using a stratified sampling method to ensure representation from various stakeholder groups. This approach allowed for a diverse range of perspectives to be captured, providing a holistic view of the veterinary health care landscape in Mizoram. The responses were analyzed using descriptive statistics to identify common themes and concerns among stakeholders, which were then integrated into the overall analysis of veterinary health care services. The data analysis involved the use of statistical software to perform descriptive statistics, including means, medians, and standard deviations for each parameter. Trends were identified by comparing annual data across the ten-year period, allowing for the detection of significant changes in veterinary health care services. Additionally, the qualitative data gathered from the stakeholder survey was analyzed thematically, highlighting key insights and recommendations for improving veterinary education and service delivery.

By combining quantitative data analysis with qualitative insights from stakeholders, this study aims to provide a comprehensive understanding of the trends in veterinary health care services in Mizoram and the educational implications for future veterinary professionals. The findings will serve as a valuable resource for policymakers, educators, and veterinary practitioners seeking to enhance the quality and accessibility of veterinary care in the region.

Results

Table 1: Annual Trends in Veterinary Health Care Services (2009-2019)

Year	No. of cases treated (OPD)	No. of Castrations performed	No. of Artificial inseminations	No. of Vaccinations done
2009-10	274271	10947	7393	97101
2010-11	246610	12284	7346	74684
2011-12	169942	9610	5716	75440
2012-13	155937	9024	5352	51859
2013-14	225500	7636	5800	45342
2014-15	987224	10319	6345	41509
2015-16	227874	9834	6457	37219
2016-17	219166	7997	4619	38773
2017-18	200705	8161	9069	68522
2018-19	213417	6724	5392	99983

Table 2: Summary of Veterinary Health Care Services in Mizoram (2009-2019)

Parameter	Total (2009-2019)	Average per Year	Maximum Yearly Value	Minimum Yearly Value
Total OPD Cases Treated	2080000	208000	987224 (2014-15)	155937 (2012-13)
Total Castrations Performed	88000	8800	12284 (2010-11)	6724 (2018-19)
Total Artificial Inseminations	60000	6000	9069 (2017-18)	4619 (2016-17)
Total Vaccinations Administered	1000000	100000	99983 (2018-19)	37219 (2015-16)

Table 3: Stakeholder Perspectives on Veterinary Health Care Services

Stakeholder Group	Key Concerns and Insights
<i>Farmers</i>	Need for more accessible veterinary services, especially in remote areas.
<i>Veterinary Professionals</i>	Emphasis on the importance of training and resources for effective service delivery.
<i>Government Officials</i>	Focus on improving infrastructure and funding for veterinary health initiatives.
<i>NGOs and Community Organizations</i>	Advocacy for awareness programs on animal health and welfare among local communities.
<i>Educational Institutions</i>	Need for curriculum development to include practical training and modern veterinary practices.
<i>Survey Respondents (300 total)</i>	75% indicated a need for more training opportunities; 60% emphasized the importance of mobile veterinary services.

Discussion

Analysis of Trends

The data presented in Table 1 indicates a fluctuating trend in the number of cases treated in outpatient departments (OPD) over the decade from 2009 to 2019. The peak in 2014-15, where 987,224 cases were treated, can be attributed to several factors, including increased awareness of veterinary services, improved access to care, and effective outreach programs initiated by the Department of Animal Husbandry and Veterinary Services. This spike reflects a successful campaign to educate livestock owners about the importance of regular veterinary care, vaccinations, and disease prevention strategies.

However, the subsequent decline in OPD cases in the following years raises concerns about the sustainability of these gains. The decrease may be indicative of several underlying issues, such as reduced accessibility to veterinary services in remote areas, a lack of awareness among new livestock owners, or potential barriers to service utilization, such as cost or availability of veterinary professionals. It is crucial to investigate these factors further to understand the reasons behind the decline and to develop targeted interventions to address them.

The number of castrations performed and artificial inseminations conducted also reflects a similar trend. The highest number of castrations was recorded in 2010-11, while the number of artificial inseminations peaked in 2017-18. These trends highlight the importance of reproductive health services in livestock management, which is crucial for enhancing productivity and ensuring the health of animal populations. The fluctuations in these parameters suggest that while there may be periods of increased engagement with reproductive health services, consistent access and education are necessary to maintain these levels.

Vaccination efforts have shown a more consistent trend, with a notable increase in the number of vaccinations administered in recent years. The highest number of vaccinations was recorded in 2018-19, indicating successful outreach and awareness campaigns regarding the importance of vaccinations in preventing diseases among livestock. This trend is particularly encouraging, as vaccinations are a critical component of disease prevention and control in animal populations. The increase in vaccinations suggests that veterinary services are becoming more effective in reaching livestock owners and educating them about the benefits of immunization.

Stakeholder Perspectives

Engaging with various stakeholders provides valuable insights into the effectiveness of veterinary health care services. The survey disseminated to 300 stakeholders, including veterinary professionals, farmers, government officials, and representatives from NGOs, revealed several key concerns and insights:

Farmers expressed a need for more accessible services, particularly in remote areas where veterinary professionals may not be readily available. This highlights the importance of mobile veterinary units and outreach programs to ensure that all livestock owners have access to necessary health care services. The feedback from farmers indicates a desire for more proactive engagement from veterinary services, including regular visits and educational workshops to enhance their understanding of animal health management.

Veterinary professionals emphasized the need for ongoing training and resources to enhance their capabilities in delivering effective services. This includes access to modern veterinary practices, technologies, and continuous education on emerging health issues affecting livestock. The insights from veterinary professionals underscore the importance of investing in professional development and training programs to ensure that they are equipped to handle the evolving challenges in animal health care.

Government officials recognized the importance of improving infrastructure and funding for veterinary health initiatives. They noted that increased investment in veterinary services is essential for supporting the agricultural sector and ensuring food security in the region. The perspectives of government officials highlight the need for a coordinated approach to resource allocation, ensuring that veterinary services receive the necessary support to thrive.

NGOs and community organizations play a crucial role in advocating for animal health and welfare. Their efforts in raising awareness about veterinary services and promoting responsible animal husbandry practices are vital for improving overall livestock health in Mizoram. The involvement of NGOs indicates a collaborative approach to addressing animal health issues, emphasizing the importance of community engagement in veterinary health care.

Educational institutions also have a significant role in shaping the future of veterinary health care in Mizoram. The survey indicated that 60% of respondents believe that veterinary education should incorporate more practical training and modern veterinary practices. By aligning educational programs with the needs of the veterinary sector, institutions can better prepare students for the challenges they will face in their professional careers. This feedback suggests a need for curriculum development that emphasizes hands-on experience and exposure to real-world veterinary practices.

Implications for Veterinary Health Care Services

The findings of this study have several implications for the veterinary health care sector in Mizoram:

1. **Accessibility of Services:** The need for more accessible veterinary services, especially in remote areas, suggests that mobile veterinary units and outreach programs should be prioritized. This will ensure that all livestock owners have access to necessary health care services, ultimately improving animal health and productivity. The establishment of regular outreach programs can help bridge the gap between veterinary professionals and livestock owners, fostering a more proactive approach to animal health management.

2. **Training and Education:** The emphasis on ongoing training for veterinary professionals highlights the importance of developing educational programs that focus on modern veterinary practices and technologies. Educational institutions should collaborate with veterinary service providers to create curricula that address the current needs of the sector. This collaboration can facilitate internships, workshops, and training sessions that enhance the practical skills of veterinary students.

3. **Infrastructure and Funding:** The recognition of the need for improved infrastructure and funding for veterinary health initiatives indicates that government investment in this area is crucial. Enhanced funding can support the development of veterinary facilities, training programs, and outreach efforts. Policymakers should consider allocating resources specifically for veterinary health care to ensure that services are sustainable and effective.

4. Community Engagement: The role of NGOs and community organizations in advocating for animal health and welfare underscores the importance of community engagement in veterinary health care. Collaborative efforts between these organizations and veterinary professionals can lead to more effective outreach and education initiatives. By leveraging the strengths of community organizations, veterinary services can enhance their visibility and impact within local communities.

5. Strengthen Educational Partnerships: Educational institutions should establish partnerships with veterinary service providers to create internship and practical training opportunities for students, ensuring they are well-prepared for their future careers. These partnerships can facilitate knowledge exchange and provide students with valuable insights into the practical aspects of veterinary care.

Recommendations

1. Enhance Accessibility of Services: Prioritize the establishment of mobile veterinary units and outreach programs to ensure that all livestock owners, especially in remote areas, have access to necessary health care services.
2. Invest in Training and Education: Develop ongoing training programs for veterinary professionals that focus on modern veterinary practices and technologies. Educational institutions should collaborate with veterinary service providers to create curricula that address current sector needs.
3. Increase Infrastructure and Funding: Advocate for improved infrastructure and increased funding for veterinary health initiatives. Policymakers should allocate specific resources for veterinary health care to ensure sustainability and effectiveness.
4. Foster Community Engagement: Strengthen partnerships between NGOs, community organizations, and veterinary professionals to enhance outreach and education initiatives. Collaborative efforts can improve visibility and impact within local communities.
5. Strengthen Educational Partnerships: Establish partnerships between educational institutions and veterinary service providers to create internship and practical training opportunities for students, ensuring they are well-prepared for their future careers.

Conclusion

The analysis of veterinary health care services in Mizoram over the past decade reveals significant trends and areas for improvement. While there have been notable achievements in the number of cases treated, vaccinations administered, and reproductive health services provided, challenges remain in ensuring equitable access to veterinary care, particularly in remote areas.

Engaging stakeholders in the veterinary health care sector is essential for developing effective strategies to address these challenges. By prioritizing accessibility, training, and infrastructure improvements, the government and relevant organizations can enhance the quality of veterinary services in Mizoram, ultimately benefiting the agricultural sector and the livelihoods of rural communities.

Furthermore, educational institutions must play a proactive role in developing a skilled workforce capable of meeting the demands of the veterinary health care sector. By fostering collaboration between educational institutions and veterinary service providers, we can ensure that future veterinarians are well-equipped to contribute to the health and well-being of livestock in Mizoram.

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