



Research Article

STUDY OF FAUNA AND PUBLIC PERCEPTION OF CAPTIVE ANIMALS AT PESHAWAR ZOO, KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

Zoos are commonly regarded as the best place for amusement and enjoyment. A large number of people visit zoos to see different animals with their family and friends. The current study investigated "fauna and public opinion of caged animals at Peshawar Zoo" using a well-designed Questionnaire. Questionnaires include questions regarding the zoo environment, public behavior toward animals, and the zoo's involvement in the conservation of endangered species, animal health and enclosure upkeep, and visitor services such as drinking water, a café, and washrooms. People were also polled to choose which species they preferred and which animals they would want to see at the Peshawar Zoo. The responders were then asked whether they had any thoughts or recommendations for zoo upgrades. 198 visitors were questioned both inside and outside the zoo. As a result, it is apparent that the Peshawar Zoo is an excellent location for leisure and recreation. Visitors were excited to view the various animals and were pleased with the zoo's administration. It is specious that the majority of visitors were unaware of the zoo's role in the conservation of endangered animals. A variety of valuable suggestions can aid in the development of the Peshawar Zoo. The concerned authorities should take notes on the methods of education and modes of information used by the zoo management.

Keywords: Fauna, Management, Conservation, Endangered species, Entertainment.

INTRODUCTION

Zoos play a vital role in animal welfare by serving as conservation, entertainment, and research and public awareness centers for wildlife management and related issues. Zoos' role in animal management has evolved significantly, from being a source of entertainment to conservation sites to institutes for research and public education. Zoos have historically been characterized as places for general public pleasure, and they continue to rely on tourist revenue. Zoos are now recognized as active sites for wildlife conservation. They are presently used for conservation, teaching, research, and recreation. Zoos are critical to wildlife management and conservation. They are ex-situ conservation sites. Although zoos are emphasizing

later ones, a large proportion of visitors still visit the zoo for recreational purposes. Zoos are either considered conservation centers or animal refuge centers that protect animals from anthropogenic threats (Reade and Waran, 1996; Anderson *et al.* 2003; AZA, 2008). Ex-situ conservation of threatened animal species is better served by a zoo. The artificial habitat in a zoo should be similar to that of a natural habitat so that animals do not struggle to adapt. In general, habitat refers to the location where an organism lives, but that habitat must meet all of the basic requirements such as proper food, cleanliness, enclosure size, breeding sites, and so on (Uttan Sharma, 2016). The role and objectives of local zoos in Pakistan are not clearly defined. As a developing country, its ecosystem is under severe strain, resulting in the fragmentation and destruction

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of animal's natural habitats, threatening the survival of wildlife. (Booth and Tribe, 2003)

Visitors are essential components of zoological parks, and their significance has resulted in a research area dedicated to understanding the people-zoo relationship. This paper reviews and provides an entry point into the literature on zoo visitor research. The field is diverse and interdisciplinary; having emerged relatively recently (it shares common ground with sociology, education, psychology, zoology, and other academic disciplines). Several areas (audience analysis, circulation and orientation, exhibit evaluation, and interactions with animals) have been identified in the literature, and these areas have revealed visitors' demographic and behavioral characteristics, people's behavioral responses to endogenous and exogenous factors, the impact of exhibit design, and visitors' movements around zoos. (M S Margulis *et al.*, 2003) Captive wildlife settings account for a sizable and important portion of the wildlife tourism industry. They are also the subject of heated debate, much of which focuses on whether zoos and sanctuaries provide benefits that outweigh the necessity of keeping animals in captivity (Wood, B. 2002)

Peshawar Zoo is Pakistan's largest zoo and the first zoo in Peshawar, Khyber Pakhtunkhwa. It debuted on February 12, 2018. It is managed by Khyber Pakhtunkhwa wildlife department, forest management, and environment department. Peshawar Zoo has a total area of 29 acres (12 ha). The Peshawar Zoo has 68 species, including 22 species of mammals, 37 species of birds, and 9 species of reptiles. Peshawar Zoo plays an important role in the conservation, education, and research of Khyber Pakhtunkhwa and Pakistan's wild fauna.

MATERIALS AND METHOD

Peshawar Zoo (Figure 1) is one of the largest in Pakistan and the city's first zoo. The construction of the Peshawar Zoo formally began on February 3, 2016, with Prime Minister Imran Khan and KPK Chief Minister Pervez Khattak in attendance. It debuted on February 12, 2018. It is managed by the Government of Khyber

Pakhtunkhwa Forests, Environment, and Wildlife Department. Peshawar Zoo is near Palosi Road, near Markaz-ul-Uloom Islamia Rahatabad. Peshawar, Khyber Pakhtunkhwa. Peshawar Zoo has a total area of 29 acres (12 ha). The Peshawar Zoo has 68 species, including 22 species of mammals, 37 species of birds, and 9 species of reptiles. According to Google Maps, the approximate location is 34°01'02.3"N latitude 71°29'23.0"E longitude. Khyber Pakhtunkhwa is Pakistan's North West Frontier Province, bordering Afghanistan via the newly merged federally administered tribal area (FATA), northeast, Gilgit Baltistan, and Azad Kashmir. The population was 30,523,371 as of the 2017 census, and the area was 74,521 km. The Pakistani province of Khyber Pakhtunkhwa is home to a wide variety of wild mammals and birds. The province is rich in diverse diversity, which is found throughout the province (Khan, 2017). Frontier Region was formerly known as Peshawar Subdivision. Peshawar is a city in Pakistan's Khyber Pakhtunkhwa province. Peshawar is also known as the "City of Flowers." Khyber Pakhtunkhwa capital city is Peshawar. It is about 160 kilometers west of Pakistan's capital, Islamabad. Peshawar is the district headquarters. According to the 2017 census, the population of the Peshawar district is 4,269,079, and the area covered is 70, 741. Peshawar's ethnicity is Pashtun.

The survey is conducted from September 15 to December 15 at various locations within the Peshawar Zoo as well as outside the zoo, including the Birds Aviary, Mammals Place, and Reptilian Place. Visitors' information is gathered through a questionnaire. In the afternoon, a questionnaire is distributed to visitors with simple questions that can be answered by answering Yes/No or selecting an answer from a list of options. Binoculars, a mobile camera, a Ci5 laptop, and old research papers were used in the study. During the survey, we have a DSLR camera and a mobile phone to photograph mammals, birds, and reptiles, as well as their young. Forest department, Wildlife department, Zoo staff, Local residents, Environment Professor, and mostly public visitors were interviewed about the current and past status of zoo animals for indirect data collection. We obtained additional information from Google and YouTube to confirm the area, location, number of species, and animal behavior.



Figure 1 .Google Map of Peshawar Zoo.



Figure 2. Guide Map of Peshawar Zoo.

RESULTS AND DISCUSSION

Our research site was the Peshawar Zoo in the district of Peshawar, Khyber Pakhtunkhwa, Pakistan. There were four large lawns and eight small lawns with a large number of trees. A pond, a safari track, and an aquarium are all available. During the observation, 68 different species were recorded using a DCLR camera and a mobile camera, including 22 mammals, 37 birds, and 9 reptiles. Mammals from 12 families are as follows: Bovidae 22.72 percent (5 species), Cervidae 18.18 percent (4 species), Felidae 13.63 percent (3 species), Camelidae 9.09 percent (2 species), Canidae 9.09 percent (2 species), Carprinae 4.54 percent (1 specie), Equidae 4.54 percent (1 specie), Macropodidae 4.54 percent (1 specie), Ursidae 4.54 percent (1 specie), Giraffe (1 specie). Birds are classified into 12 orders, which are as follows: Passeriformes 7.89 percent (3 species), Galliformes 26.31 percent (10 species), Psittaciformes 23.68 percent (9 species), Gruiformes 10.52 percent (4

species), Anseriformes 13.15 percent (5 species), Columbiformes 5.26 percent (2 species), Casuariiformes 5.26 percent (2 species), Otidiformes 2.36 percent (1 specie), and Accipitriformes 2.36 percent (1 specie).

There are 2 orders and 7 families of reptiles which are as, Colubridae 33.33 percent (3 species), Agamidae 11.11 percent (1 specie), Boidae 11.11 percent (1 specie), Viperidae 11.11 percent (1 specie), Pythonidae 11.11 percent (1 specie), Elapidae 11.11 percent (1 specie), and Trionychidae 11.11 percent (1 specie). The majority of the 198 questionnaire responses came from men (71 percent). Figure 1 shows that females (29%) were initially hesitant or mostly uninterested in responses. Approximately 64% of visitors said they had previously visited Peshawar Zoo, 10% had previously visited Lahore Zoo, and 16% had visited Peshawar Zoo for the first time (Figure 2). This indicated that the zoo was well known as a recreational and entertaining destination.

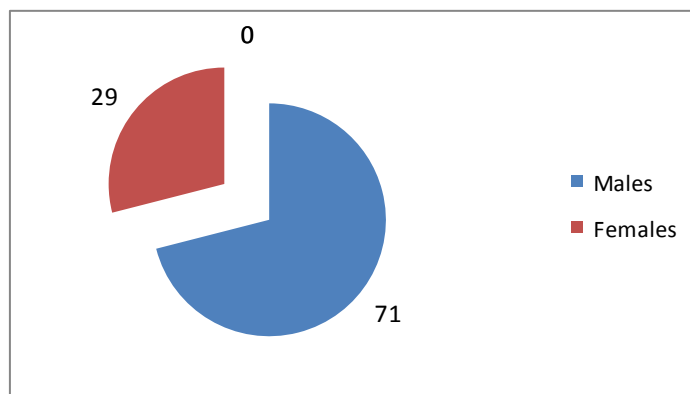


Figure 3. Gender

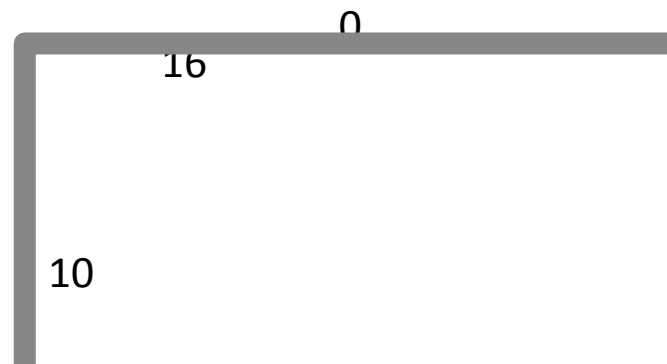


Figure 4. Have you visited any zoo before.

In response to the question "the purpose of the visit," The majority of visitors, 58 percent, were there for fun and entertainment, 30 percent came to see animals, and only 12 percent came to learn about animals (figure 3). This demonstrates that the Peshawar Zoo is the best place for recreation and entertainment. Visitors consider the Peshawar Zoo to be one of the best places to visit. The majority of visitors (49%) went to the zoo with their friends, 30% went with their families, 12% said they wanted to bring their children to the zoo, and only 9% went on a school or college tour (Figure 4). This demonstrates Peshawar Zoo's potential for delivering and instilling positive messages about nature conservation through live animals. Students' levels of knowledge and interests reflect the need to emphasize conservation and extinction issues in formal education. A question about the basic facilities available at the Peshawar Zoo, The majority (61%) of visitors stated that they are extremely satisfied with the facilities provided, 13 percent are satisfied, and 20 percent stated that there is room for improvement in canteens, food quality and quantity, washroom availability, improvement in water availability, such as increasing the number of Greasers and Coolers and making water available in the zoo 24 hours a day (Figure 5). Do you see any endangered species at the Peshawar Zoo?" Majority at Peshawar Zoo, 72 percent of visitors were unaware of the term

"Endangered." 26 percent have seen endangered species in zoos, such as Markhor, while 12 percent have not seen any endangered species in zoos (Figure 6). This indicated that they were completely unaware of the destruction of wildlife habitat and that in-situ conservation programs were difficult to implement. People are unaware of the value of wildlife. The majority of visitors (76%) believe that animals should be kept in their natural habitat, while 24% believe that some animals should be kept in zoos for recreation and that visitors should see and study them (Figure 7). For questions about the health and general care of zoo animals 25 percent of visitors were extremely satisfied that the animals were in good health, 20 percent were satisfied, and 13 percent stated that there was room for improvement in terms of animal maintenance and health. 42 percent are dissatisfied (Figure 8). This means that they require proper care, food, and medications. This demonstrates that zookeepers are not professionals and are not well trained. When asked about the cleanliness of the zoo, 52 percent of visitors were extremely satisfied and stated that the zoo was clean and well maintained. 31 percent are pleased, 3 percent are unsatisfied, and 14 percent believe there is room for improvement. This demonstrates that the Peshawar Zoo environment is sanitary (Figure 9).

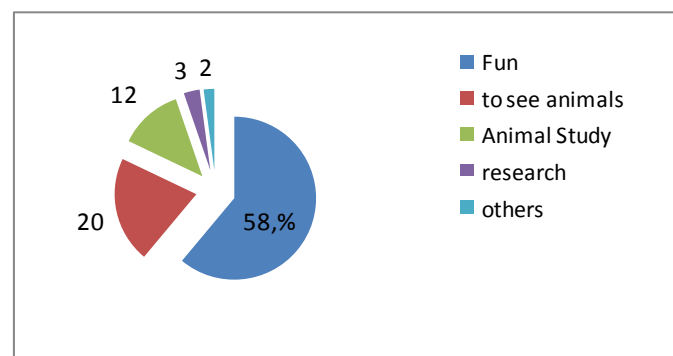


Figure 5. Purpose of Visit.

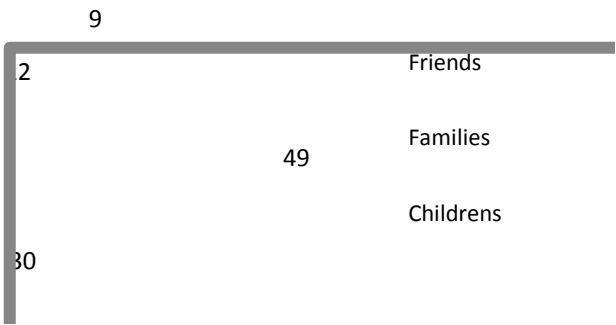


Figure 6. You visit zoo with.

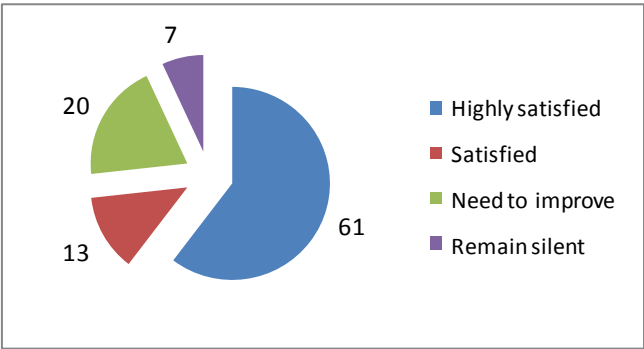


Figure 7. Basic facilities in Peshawar zoo

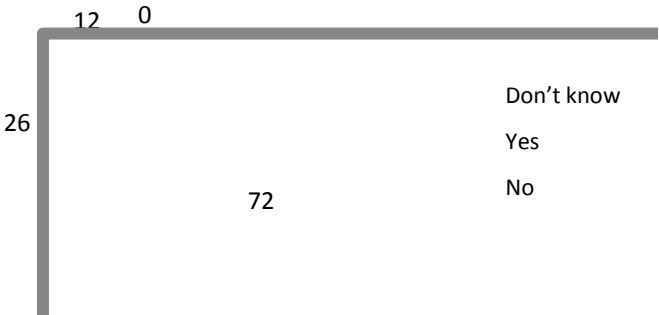


Figure 8. Do you see any endangered species

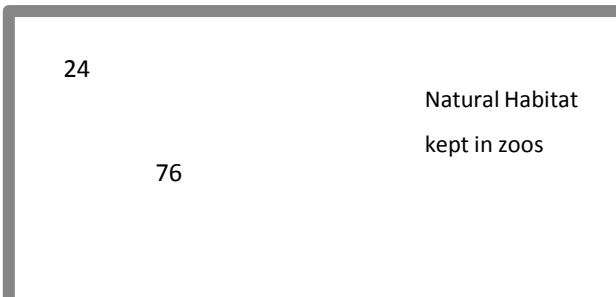


Figure 9. Animals should keep in.

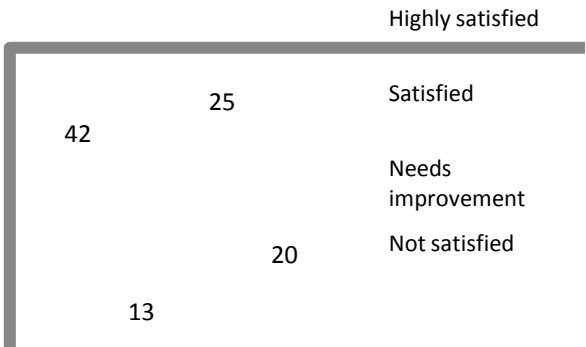


Figure 10. Health of zoo animals.

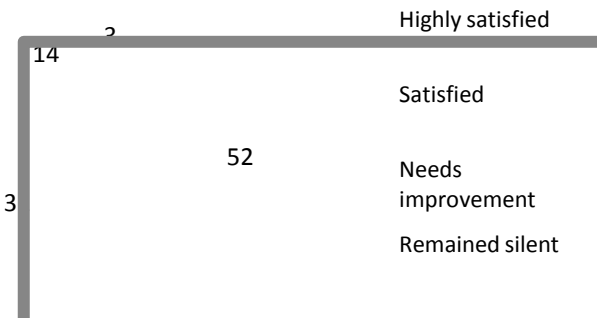


Figure 11. Cleanliness of Peshawar zoo.



Figure 12. Enclosures Cleanliness .

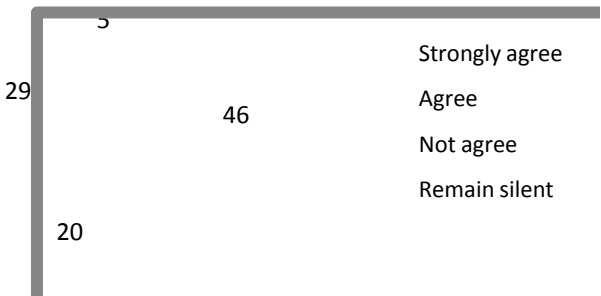


Figure 13. Animal’s selection for Peshawar zoo.

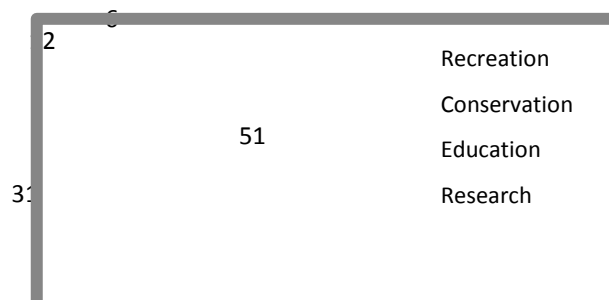


Figure 14. Visitors view about zoo priority.

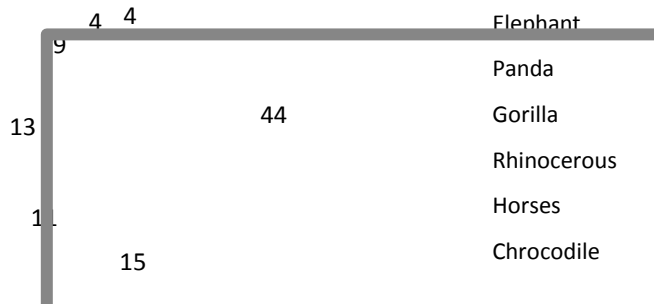


Figure 15. Missing animals in Peshawar zoo.

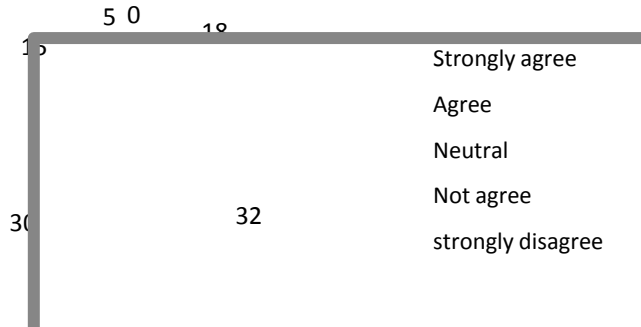


Figure 16.Role of zoo in conservation.

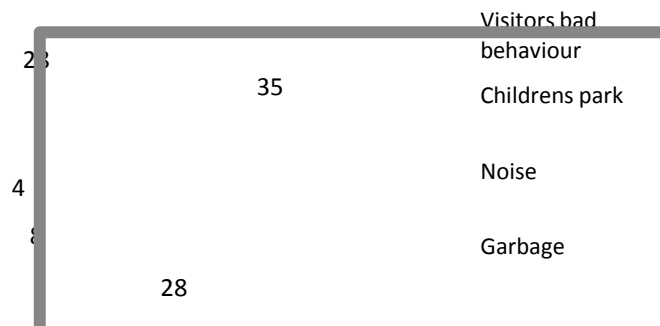


Figure 17.Elements responsible for Disturbance in Peshawar zoo.

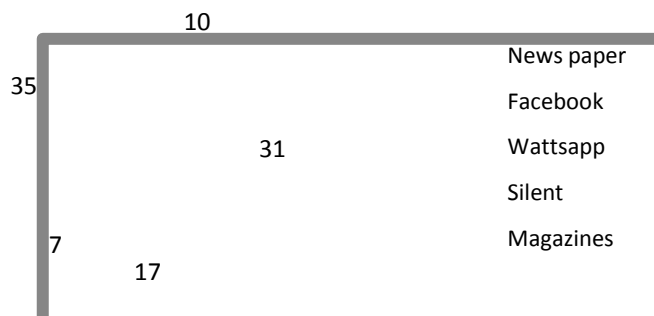


Figure 18. What kind of education should zoo adopt.

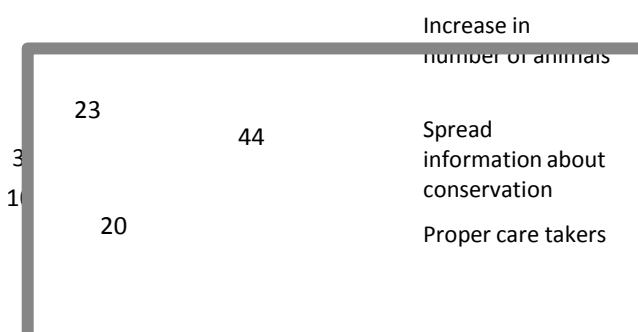


Figure 19. Steps to improve Peshawar Zoo.

When asked about enclosure cleanliness and maintenance, 56 percent said that enclosures were clean and well maintained. 15 percent are satisfied, 19 percent believe there is room for improvement, 7 percent are dissatisfied, and 3 percent are silent (Figure 10). 46 percent of visitors said they strongly agreed that the Peshawar Zoo had a good selection of animals (a correlation with their personal likes and dislikes). 20 percent agreed, 29 percent stated that there are a number of animals missing, and 5 percent remained silent (Figure 11). "What should the zoo's priority be?" 51 percent of visitors said the zoo should be used for recreation, 31 percent said it should be used for conservation, 12 percent said it should be used for education, and only 6 percent said it should be used for research. According to the above ratios, recreation should be the primary goal, and visitors prefer to see and enjoy more animals (Figure 12). A query about "Missing animals from Peshawar Zoo" Majority in Peshawar Zoo, 44 percent of visitors are missing Elephants, 15 percent are missing Pandas, 11 percent are missing Gorillas, 13 percent are missing Rhinos, 9 percent are missing Horses, 4 percent are missing Crocodiles, and 4 percent are missing Porcupines. According to the data presented above, a number of animals are missing from the Peshawar Zoo. The Khyber Pakhtunkhwa government and zoo management should investigate missing animals and bring more animals to the zoo (Figure 13). A question was posed, "What is the role of Peshawar Zoo in conservation?" Eighteen percent of visitors strongly agree that Peshawar Zoo plays a role in animal conservation, 32 percent agree, and 30 percent are silent or less interested. 15 percent of visitors disagree with the zoo's role in conservation, while 5 percent strongly

disagree (Figure 14). "Elements responsible for disturbance in Peshawar Zoo," a question 35 percent stated that visitors' bad behavior, such as throwing stones on animals, giving food to animals, and making various kinds of voices to animals, 28 percent stated that the presence of children parks disturb animals due to high sounds, 8 percent stated that noise pollution of visitors and also high sounded instruments, 4 percent stated that garbage also disturbs zoo environment, and 28 percent stated that they are unaware (Figure 15). Majority 31 percent of visitors agree that the Peshawar Zoo website or Facebook page is helpful in providing zoo and animal updates. Ten percent of visitors agreed by newspaper, seventeen percent on wattsapp, seven percent remains, and three-fifths stated that zoo importance should be included in weekly and monthly magazines (Figure 16). Majority of improvements to the Peshawar Zoo 44 percent of visitors stated that there is a need to increase the number of animals in Peshawar Zoo, which will lead to advancement in Peshawar Zoo and more visitors. 20% believe that social media should be used to spread information about the role of conservation in Peshawar Zoo, endangered species kept at the zoo, and breeding programs. 10% stated that proper zoo caretakers, veterinary doctors, and other personnel are required and cleanliness of the zoo, as well as animal enclosures, 3 percent said that zoo animal security should be improved, while 23 percent remained silent (Figure 17).

Nowadays, zoos are the best places for public entertainment and for displaying various animals to the public. Because of technological advancements in the last few decades, the role of zoos has changed significantly.

Zoos now play an important role in conservation of endangered species, breeding centers, education, and research. The current study aimed to assess men's understanding of the animals kept in Peshawar Zoo, specifically why these animals are kept in a zoo rather than in their natural habitat, what the status of animals in conservation is according to the IUCN, and what measures are taken to preserve animals. Furthermore, visitor responses play an important role in achieving the zoo's objectives and meeting all of the important needs and facilities. Visitors are the zoo's primary source of funding, so all basic facilities should be available. As a result, a study was conducted to combine a review of the literature and public reviews about zoos and their animals. Zoos are the best places for recreation and enjoyment in a developing country like Pakistan. Visitors are only interested in seeing different animals and enjoying their behaviors. The main point to note is that no such work has previously been done in Peshawar Zoo, so the purpose of this study was to analyze the tools for future policy and management should take steps towards the advancement of the zoo. There are approximately 68 species of animals in the Peshawar Zoo, including 22 species of mammals, 37 species of birds, and 9 species of reptiles, which is significantly less than the 140 species in the Lahore Zoo. Less research has been conducted on public perception of zoos in Pakistan because most researchers are not interested in such work, but its significance cannot be overstated. There are only a few documents relating to public opinion about zoos around the world, particularly in Pakistan. The current study also sought to comprehend the significance of public opinion to authorities and management in improving the condition of the zoo and the animals housed there. People's perceptions of animal welfare are influenced by their own experiences, values, norms, convictions, and interests (2006, Boogaard).

A similar study was conducted at the Lahore Zoo, where public perceptions were gathered via questionnaires. According to the findings of the current study and survey, the Lahore Zoo is a good place for people to hang out and have fun. The zoo's animal collection is interesting and well-liked by visitors. This decision, however, has nothing to do with their conservation status. People are generally unaware of the importance of endangered species, in-situ and ex-situ conservation, environmental education, and natural ecosystem damage control. Lahore Zoo is involved in research, educational programs, and internships, but such programs require targeted marketing and proper advertisement to draw the attention of visitors, which will increase the funds available to carry out such plans in the future (S. Ahmad *et al* 2015). In comparison to the Lahore Zoo, the Peshawar Zoo is poorly managed and organized. Peshawar Zoo is also a great place to have fun and relax. Visitors enjoy the animal collection at the Peshawar Zoo.

A similar study was conducted in Malaysian zoos, where three zoos were compared for their roles in recreation, research, education, and conservation. The study revealed a lack of proper education and awareness about the role of zoos in conservation. People believe that zoos

are places of recreation and entertainment, and that they keep animals to attract visitors; some respondents were knowledgeable about conservation, extinction, captive breeding, reintroduction, and environmental enrichment, and said they were motivated to visit the zoo in order to achieve the goals stated in the zoo mission statement (2007 Paun and Zakaria). In comparison to Malaysian zoos, Peshawar Zoo is poorly managed and organized. People voted Peshawar Zoo as the best place to go for recreation and entertainment. Christoffersen *et al.* (2013) investigated the role of regional zoos in environmental education in Brazil, surveying four zoos with 400 questionnaires each. The majority of zoo respondents stated that the primary role of the zoo was recreation and entertainment. However, one zoo visitor stated that they came to learn about the zoo's environmental education program. According to the findings of the current study and survey, Peshawar Zoo is the best place for entertainment, with most visitors coming with their friends and families to have a good time. . Because the zoo is not yet fully developed, a number of steps are being taken to achieve their objectives. The basic facilities at the Peshawar Zoo are excellent, but drinking water availability could be improved. There are approximately 68 different animal species. The collection of animals in Peshawar Zoo is interesting and well-liked by visitors, but there are a number of animals that are missing in the zoo, including a large number of elephants, as well as Pandas, Gorillas, Rhinos, Horses, Porcupines, and Crocodiles. The majority of visitors are unaware of the term "endangered species" and its significance, as well as the importance of conservation, environmental education, and natural ecosystems that can be protected from damage.

CONCLUSION

Visitors consider Peshawar Zoo to be the best place to visit and recognize the zoo as a recreational and entertaining area. The majority of visitors stated that they are unaware of the term Endangered Species, which means that they are completely unaware of the destruction of natural habitat and the importance of wildlife. The animal selection is satisfactory, but several animals are missing, including elephants, gorillas, pandas, rhinoceroses, and horses. Basic amenities are accessible, and the atmosphere is sanitary. The majority of respondents agreed that visitors' inappropriate behavior toward animals is the main source of disruption in the zoo, and the presence of playing equipment in the zoo also has a negative impact on the animals. The Peshawar Zoo plays a little part in the protection of endangered species and public awareness. Some animals do not have a partner; hence such species require a mate. Recommendation: Given the issues raised above, a number of useful suggestions for visiting Peshawar Zoo can be made. The concerned authorities should take note of the following issues. Some animals are unable to reproduce and thus require mates. The zoo should work for the welfare and importance of endangered species, as well as raise public awareness. Peshawar Zoo could work on formal and informal education to provide information about upcoming programs like breeding

strategy, conservation strategy, natural environment conservation, and entertainment programs. The Peshawar Zoo, according to its management, is a self-sustaining organization. The education and public relations departments should raise awareness, assist visitors, and educate the public about the degraded natural environments of endangered species. So, if Peshawar Zoo overcomes the upcoming challenges and works hard on the needs, it will undoubtedly increase the motivation and interest of visitors, resulting in more visitors visiting Peshawar Zoo and increasing the zoo's income.

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