

UNIVERSIDAD POLITÉCNICA DE MADRID

FACULTAD DE CIENCIAS DE LA ACTIVIDAD FÍSICA Y DEL
DEPORTE



**Equestrian: Horse sport development
and cooperation between horses and
humans**

DOCTORAL THESIS

Submitted for the degree of Doctor by:

JIAXIN LI

Máster en Gestión Deportiva de Entidades Deportivas

Madrid, 2024



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Doctoral Degree in Sciences of Physical Activity and Sport

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Under the supervision of:
Dr. ALFONSO DE LA RUBIA RIAZA

Madrid, 2024

Title: Equestrian: Horse sport development and cooperation between horses and humans

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Doctoral Programme: Sciences of Physical Activity and Sport

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External Reviewers:

Thesis Defense Committee:

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“慶曆四年春，滕子京謫守巴陵郡。越明年，政通人和，百廢具興，乃重修岳陽樓，增其舊制，刻唐賢今人詩賦於其上。屬予作文以記之。予觀夫巴陵勝狀，在洞庭一湖。銜遠山，吞長江，浩浩湯湯，橫無際涯；朝暉夕陰，氣象萬千。此則岳陽樓之大觀也，前人之述備矣。然則北通巫峽，南極瀟湘，遷客騷人，多會於此，覽物之情，得無異乎？若夫霪雨霏霏，連月不開，陰風怒號，濁浪排空；日星隱曜，山嶽潛形；商旅不行，檣傾楫摧；薄暮冥冥，虎嘯猿啼。登斯樓也，則有去國懷鄉，憂讒畏譏，滿目蕭然，感極而悲者矣。

至若春和景明，波瀾不驚，上下天光，一碧萬頃；沙鷗翔集，錦鱗游泳；岸芷汀蘭，郁郁青青。而或長煙一空，皓月千里，浮光躍金，靜影沉璧，漁歌互答，此樂何極！登斯樓也，則有心曠神怡，寵辱偕忘，把酒臨風，其喜洋洋者矣。嗟夫！予嘗求古仁人之心，或異二者之爲，何哉？不以物喜，不以己悲；居廟堂之高則憂其民；處江湖之遠則憂其君。是進亦憂，退亦憂。然則何時而樂耶？其必曰“先天下之憂而憂，後天下之樂而樂”乎？噫！微斯人，吾誰與歸？”

范仲淹(989—1052)

Acknowledgment

I like equestrian very much. It must be a beautiful coincidence in my life. There are always some people who show up and let me see a different world, experience a different life, and change the trajectory of my life.

Thanks to my parents who helped me realize my little dream of becoming more professional in equestrian sports and even more thanks to them who encouraged me to participate in Técnico Deportivo De Hípica and now I got my Técnico Deportivo De Hípica 2. I am now a professional equestrian trainer with a professional certificate of Eventing rider in Spain. I completed and passed all course exams, laying the foundation for my further equestrian studies in the future. Also, I would like to thank Equestrian Magazine for allowing me to use their data. Secondly, I would like to thank Professor Ferro Sanchez Amelia, who gave me a lot of help during my PhD studies. Furthermore, I must thank Professors Concha Bielza Lozoya and Pedro Larrañaga of the Faculty of Computer Science and Artificial Intelligence of the Universidad Politécnica de Madrid. They are a ray of sunshine in Madrid's cold winter and make me feel warm. I will always remember that afternoon when we first met and thank you for your warmth and kindness. Also, Prof. Olga López Torres and Prof. Amelia Guadalupe Grau, who allowed me to participate in my first research project and participated in the entire process from experiment to publication, especially during my most difficult time. They have been helping me come up with solutions, and I am grateful for their care and help. Also, thanks to Prof. Alfonso de la Rubia Riaza, Prof. Raúl Sánchez García and Prof. Enrique López Adán.

Of course, the most grateful thing is my parents. I can always insist on doing what I want to do without their support. This period of studying for a Ph.D. taught me a lot in my life. This includes the understanding of the death of a loved one. I believe that cause and effect will eventually pay off.

I want to thank my best friend, her name is Yang Bingrou. We have been friends for 24 years until this year. She was always listen to me, she comforted me when I was having a bad day, and she always believed that I would succeed. Thank you, my best friend forever. I would also like to thank my schoolmate Luo Shiyi and her husband Mr. Feng Runze. I wish them success in their research and future. My best roommate and my artist friend Yotsuba, she drew a picture of me to celebrate my first international conference using a photo of me practicing jumping, which I

will show you during my defense. I got into the PhD program because of my friend, Jeni. Before I decided to join the program, I took a gap year to study Spanish and travel to Europe, which was a wonderful year of my life for me. I wish her enjoy a wonderful life.

Finally, I hope that my defense will go well, that I will learn more about equestrian sports-related industries and more interesting people in my career, and that maybe one day I will have the opportunity to participate in equestrian competitions as an athlete. I am very grateful to the friends who I have made in these four short months in Australia for taking care of me and playing with me. Thank you to my good friends Rui, Youan Ma, Sijia Xu, Yixuan Luo and Zhuangru Wen. I hope that Xuan and Wen will go well in their Ph.D. studies, that my younger sisters can all find their favourite careers, Sijia's work goes well and that we all have a bright future. I also hope that all my mates can live happy horse lives and I hope to fight for their welfare when I can. I will face every challenge in my life with a grateful heart.

Monday, 15 April, 2024

Written in Madrid, Spain.

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Me gusta mucho la equitación. Equitación para mi debe ser una coincidencia. Siempre hay algunas personas que aparecen y me dejan ver un mundo diferente, experimentar una vida diferente y cambiar la trayectoria de mi vida.

Gracias muchas a mis padres que me ayudaron a realizar mi grande sueño de ser más profesional en la hípica y más gracias a ellos que me animaron a participar en Técnico Deportivo de Hípica y ahora obtuve mi Técnico Deportivo de Hípica 2. Ahora soy una entrenadora de hípica profesional en España. Aprobé el examen me cuesta menor tiempo. Completé y aprobé todos los exámenes del curso, sentando las bases para mis estudios equitación posteriores en el futuro. Además, me gustaría agradecer a Equestrian Magazine por permitirme utilizar sus datos. En segundo lugar, quisiera agradecer al profesor Ferro Sánchez Amelia, quien me brindó mucha ayuda durante mis estudios de doctorado. Además, debo agradecer a los profesores Concha Bielza Lozoya y Pedro Larrañaga de la Facultad de Informática e Inteligencia Artificial de la Universidad Politécnica de Madrid. Son un rayo de sol en el frío invierno madrileño y me dan calor. Siempre recordaré esa tarde en que nos conocimos y gracias por su calidez y amabilidad. También a la Prof. Olga López Torres y la Prof. Amelia Guadalupe Grau, quienes me permitieron participar en mi primer proyecto de investigación y participaron en todo el proceso desde el experimento hasta la publicación, especialmente durante mi momento más difícil. Me han ayudado a encontrar soluciones y estoy agradecido por su atención y ayuda. Y por final necesito dar muchas gracias a mis directores Prof. Alfonso de la Rubia Riaza y Prof. Raúl Sánchez García y Prof. Enrique López Adán.

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lunes, 15 de abril de 2024

Escrito en Madrid, España.

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我很喜欢马术这项运动，也是机缘巧合吧，总有一些人的出现让我见到了不一样的世界，体验了不一样的生活，并且改变了我的人生轨迹。

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2024 年 4 月 15 日 星期一

写于马德里 西班牙

Abstract

One of the most important industries in China's history has been the horse industry, and the modern horse industry is still in the process of being transformed. When the horse business is shifting from traditional to modern, there are several issues with its policies and regulations. This thesis aims to introduce relevant policies in three parts: An overview of the sports policy documents and regulations for equestrians in China; another related to horse racing policy changes and the evolution of the development; the third part is about how the equine therapy works in the whole world review. This thesis utilizes a qualitative method and systematic review method. Firstly, the major research direction of this thesis is defined the scope of the documents. This thesis has two research directions. One aims to investigate the evolution of competitive equestrian sports that include Chinese horse racing history and development of equestrian. Exploring the problems and then after finding out the goal of the research, define the keywords of competitive equestrian sports and horse racing to find literature, data, and historical records, and utilize the R language for sketching. And another one is around the new combine research—Equine therapy. In China, with the systematic review recent 5 years in equine therapy area, no shows any research in China. Therefore, the purpose of this doctorate thesis is to talk about how equestrian sports have developed in China, how well they've done at each level, how relevant regulations have affected them, and how they might grow even more successfully in the future. According to this general objective, four scientific studies were carried out.

Study 1 is all about the horse racing development in China, from the historical process overview to prohibition now, with started in 1844, there shows three waves of different times to run horse racing. According to the characteristics of the research, this study finds out the similarities and classifies different phases, namely four development stages, which are respectively 1844–1949: Period when horse racing was allowed: before the founding of the People's Republic of China; 1949–1985: The ban period after the establishment of the People's Republic of China; 1986–1999: A brief period of acquiescence for the opening of horse racing; 2000-Now: Without betting on speed horse racing, horse racing has seen an unrestricted period of prohibition in China.

Study 2 and 4, focus on Chinese equestrian development from polices aspect. China competed in equestrian sports for the first time at the 2008 Beijing Olympics. And

modern equine business has developed significantly over the past decade, and the lessons from the expansion between 2015 and 2020 are important considerations as China implements further legislation to aid in the development of its modern equestrian sports. Equestrian sports can propel the Chinese horse industry forward, and the horse industry is a unique business in that it integrates one, two, and three industries, with much growth potential. Study 2 assesses the development of equestrianism in China from four perspectives: the general sports economic environment; the development of equestrian activities; the economic industries driven by equestrian activities; and relevant equestrian policies. Equestrian sports within China are currently facing problems, and recommendations are given. It is a single case study. The research utilized a qualitative approach, collecting data from official and semi-official documents. Through understanding the data collated and its analysis, equestrian sports can improve the speed and quality of their development under the influence of better-informed policy-making and a relevant economic model. It is expected that the wider related horse industry in China will also undergo more significant development. Study 4 differs from Study 2 in terms of its time point, since it conducted an extensive analysis of Chinese equestrian policy documents and regulations spanning from 1978 to 2022. This study aims to thoroughly investigate the development of equestrian "policy" in China, emphasize existing difficulties, and offer perceptive analysis in the discussion part. The organization of this study is as follows: The initial section offers a concise summary of the current body of literature on Chinese sports policy. The subsequent section delineates the methodology employed for the analysis. The following section presents the evolution of equestrian policy and regulations, categorized into three distinct stages: the budding phase (1978–2004), the preparation phase (2005–2012), and the development phase (2013–2022). Ultimately, the discussion part provides a thorough analysis of the findings and highlights significant concerns and challenges.

Study 3, equine therapy, also known as equine-assisted therapy, utilizes interactions with horses to enhance physical, mental, and emotional well-being. Widely applied to address various physical and mental health issues such as anxiety, depression, post-traumatic stress disorder, and autism spectrum disorder, this therapeutic approach offers holistic benefits. This study includes a systematic review of the peer-reviewed literature on equine-assisted intervention therapy and examines the key characteristics of various equine interventions based on the body of research on the use of equine-assisted intervention therapy in veterans suffering

from post-traumatic stress disorder (PTSD). It has been demonstrated that equine-assisted intervention therapy works, but additional research needs to focus on the specifics and theories of equine-assisted interventions as well as the welfare of the horses used in the therapy.

Keywords: Equestrian, Horse riding, Equine, Politics, Equine therapy

Resumen

Una de las industrias más importantes en la historia de China ha sido la industria equina, y la industria equina moderna todavía está en proceso de transformación. Cuando el negocio de los caballos está pasando de lo tradicional a lo moderno, surgen varios problemas con sus políticas y regulaciones. Esta tesis presenta políticas relevantes en tres partes: una descripción general de los documentos y regulaciones de políticas deportivas para jinetes en China; otro relacionado con los cambios en la política hípica y la evolución del desarrollo; la tercera parte trata sobre cómo está funcionando la equinoterapia en todo el mundo. Esta tesis utiliza un método cualitativo y un método de revisión sistemática. En primer lugar, la principal dirección de investigación de esta tesis es definir el alcance de los documentos. Esta tesis tiene dos direcciones de investigación. Uno es investigar la evolución de los deportes ecuestres competitivos que incluyen la historia de las carreras de caballos chinas y el desarrollo de la equitación. Explorar los problemas y luego, después de descubrir el objetivo de la investigación, definir las palabras clave de los deportes ecuestres competitivos y las carreras de caballos para encontrar literatura. Datos y registros históricos, y utilizar el lenguaje R para dibujar. Por lo tanto, el propósito de esta tesis doctoral es hablar sobre cómo se han desarrollado los deportes ecuestres en China, qué tan bien les ha ido en cada nivel, cómo les han afectado las regulaciones relevantes y cómo podrían crecer aún con más éxito en el futuro. De acuerdo con este objetivo general, se realizaron cuatro estudios científicos.

El estudio 1 trata sobre el desarrollo de las carreras de caballos en China, desde la descripción general del proceso histórico hasta la prohibición actual, que comenzó en 1844, y muestra tres oleadas de épocas diferentes para realizar carreras de caballos. De acuerdo con las características de la investigación, este estudio descubre las similitudes y clasifica diferentes fases, a saber, cuatro etapas de desarrollo, que son respectivamente 1844-1949: Período en que se permitieron las carreras de caballos: antes de la fundación de la República Popular China; 1949-1985: el período de prohibición después del establecimiento de la República Popular China; 1986-1999: Breve período de aquiescencia para la apertura de las carreras de caballos; 2000-Ahora: Sin apostar por las carreras de caballos de velocidad, las carreras de caballos han pasado por un período de prohibición irrestricta en China.

Los estudios 2 y 4 se centran en el desarrollo ecuestre chino desde el punto de vista de las políticas. China compitió en deportes ecuestres por primera vez en los Juegos Olímpicos de Beijing 2008. Y el negocio equino moderno se ha desarrollado significativamente durante la última década, y las lecciones de la expansión entre 2015 y 2020 son consideraciones importantes a medida que China implementa más legislación para ayudar en el desarrollo de sus deportes ecuestres modernos. Los deportes ecuestres pueden impulsar la industria equina china, y la industria equina es un negocio único en el sentido de que integra una, dos y tres industrias, con un gran potencial de crecimiento. El estudio 2 evalúa el desarrollo de la equitación en China desde cuatro perspectivas: el entorno económico deportivo general; el desarrollo de actividades ecuestres; las industrias económicas impulsadas por las actividades ecuestres; y políticas ecuestres relevantes. Los deportes ecuestres en China actualmente enfrentan problemas y se dan recomendaciones. Es un estudio de caso único. La investigación utilizó un enfoque cualitativo, recopilando datos de documentos oficiales y semioficiales. Al comprender los datos recopilados y su análisis, los deportes ecuestres pueden mejorar la velocidad y la calidad de su desarrollo bajo la influencia de una formulación de políticas mejor informada y un modelo económico relevante. Se espera que la industria hípica en China también experimente un desarrollo más significativo. El Estudio 4 difiere del Estudio 2 en términos de su momento, ya que realizó un análisis extenso de los documentos y regulaciones de la política ecuestre china que abarcan desde 1978 hasta 2022. Este estudio tiene como objetivo investigar a fondo el desarrollo de la "política" ecuestre en China, enfatizar las existentes dificultades y ofrecer un análisis perspicaz en la parte de discusión. La organización de este estudio es la siguiente: La sección inicial ofrece un resumen conciso del cuerpo actual de literatura sobre la política deportiva china. La sección siguiente describe la metodología empleada para el análisis. La siguiente sección presenta la evolución de la política y las regulaciones ecuestres, categorizadas en tres etapas distintas: la fase de incipiente (1978-2004), la fase de preparación (2005-2012) y la fase de desarrollo (2013-2022). En última instancia, la parte de discusión proporciona un análisis exhaustivo de los hallazgos y destaca preocupaciones y desafíos importantes.

Estudio 3, la equinoterapia, también conocida como terapia asistida con caballos, utiliza la interacción con caballos para mejorar el bienestar físico, mental y emocional. Ampliamente aplicada para abordar diversas cuestiones de salud física y mental, como la ansiedad, la depresión, el trastorno de estrés postraumático y el trastorno del espectro autista, este enfoque terapéutico ofrece beneficios holísticos.

La terapia de intervención asistida por equinos tiene una historia de casi 60 años y se ha demostrado que tiene un impacto positivo significativo en varios tipos de pacientes de psicoterapia. Debido al aumento de la investigación sobre EAT, el número de métodos existentes de terapia de intervención asistida por equinos ha aumentado gradualmente. Basado en la literatura existente sobre la aplicación de la terapia de intervención asistida por equinos en veteranos con trastorno de estrés postraumático (TEPT), este estudio examina las características de varios tipos de intervenciones equinas e incluye una revisión sistemática de la literatura revisada por pares sobre la terapia de intervención asistida por equinos. Intervenciones para veteranos con trastorno de estrés postraumático publicadas durante los últimos 5 años, desde 2018 hasta el presente. Diez artículos cumplieron con los criterios de revisión y sirvieron como datos primarios para el análisis. Se demostró que varios tipos de intervenciones asistidas por equinos tienen un impacto psicológico beneficioso en los veteranos. Sin embargo, también se encontraron algunas limitaciones en los estudios, como que la mayoría de los experimentos estaban limitados por tamaños de muestra pequeños. Se ha demostrado que la terapia de intervención asistida por equinos es efectiva, pero se necesita más investigación para centrarse en los detalles y teorías específicos involucrados en las intervenciones asistidas por equinos y en el bienestar de los caballos involucrados en la terapia.

Palabras: Hípica, Equitación, Equino, Política, Equinoterapia

PUBLICATIONS DERIVED FROM THE DOCTORAL THESIS – SIGNS OF QUALITY

Table 1 includes the following information related to each of the studies that make up the quality indicators of the Doctoral Thesis: publication date, article citation (author/s, year, title, journal), JCR impact factor /SJR and impact quartile of the journal.

Table 1 Quality signs

Indication of quality	Publication date	Scientific publication citation	Impact factor JCR/SJR	Impact quartile JCR/SJR
1 Scientific article	17-Sep-22	Li, J., López Adán, E. L., & de la Rubia, A. (2022). A Historical Evolutionary Perspective on China's Open Horse Racing Problems and Choice Strategies. <i>Sustainability</i> , 14(18), 11692. https://doi.org/10.3390/su141811692	3.889/0.664	JCR-Q2 / SJR Q2
2 Scientific article	27-Jul-22	Li, J., López Adán, E., & de la Rubia Riaza, A. (2022). The Development of Equestrian Policies in China between 2015 and 2020. <i>Animals</i> , 12(15), 1913. https://doi.org/10.3390/ani12151913	3.231/0.601	JCR-Q1 / SJR Q1
3 Scientific article	19-Oct-23	Li, J., & Sánchez-García, R. (2023). Equine-assisted interventions for veterans with posttraumatic stress disorder: A systematic review. <i>Frontiers in Psychiatry</i> , 14, 1277338. https://doi.org/10.3389/fpsyt.2023.1277338	4.7/1.22	JCR-Q1 / SJR Q1
4 Scientific article	04-Jan-24	Li J and Sánchez-García R (2024) Chinese equestrian policy development: a narrative review. <i>Front. Vet. Sci.</i> 10:1281019. doi: 10.3389/fvets.2023.1281019	3.2/0.74	JCR-Q1 / SJR Q1

STRUCTURE OF THE DOCTORAL THESIS

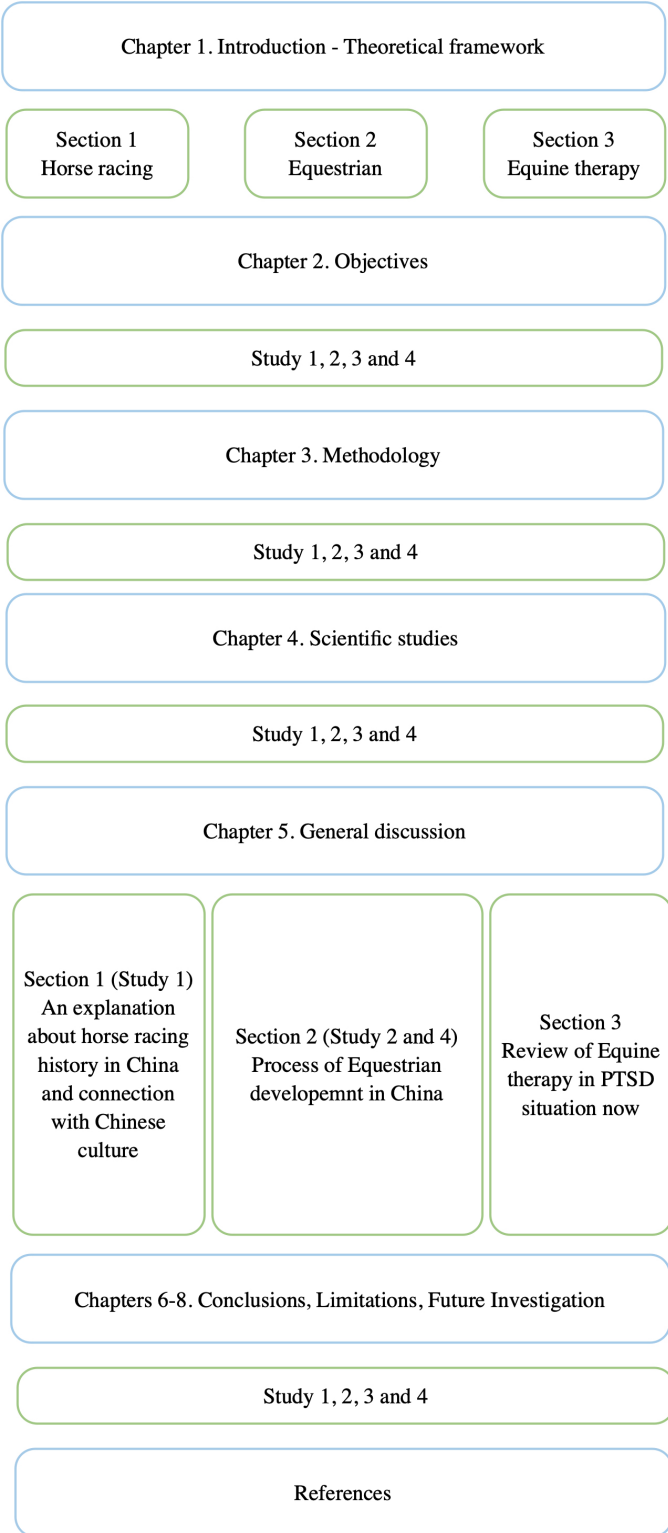


Figure 1 Organizational structure of the Doctoral Thesis by chapters

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Abbreviations and Acronyms

AAIs	Equine-based alternative activity interventions
AAQII	Acceptance and Action Questionnaire II
AAT	Animal-assisted therapy
AATs	Animal-assisted therapies
ADF	Australian Defence Force
AGRC	Australian Gambling Research Centre
AUDIT-C	Alcohol Use Disorders Identification Test
BDI-II	Beck Depression Inventory
BHS	British education system
CAPS-5	Clinician-Administered PTSD CSES Scale
CD-RISC	Connor-Davidson Resilience Scale
CEA	Chinese Equestrian Association
CSE	Coping Self Efficacy
CPC	Communist Party of China
CPPCC	Chinese People’s Political Consultative Conference
CSQ	Client Satisfaction Questionnaire
DSM	Diagnostic and Statistical Manual of Mental Disorders
EAGALA	Equine-Assisted Growth and Learning Association
EAS	Equine-assisted services
EAP	Equine-assisted psychotherapy
EAAT	Equine assisted activities and therapies
FEI	Fédération Équestre Internationale
GAS	General Administration of Sport
Galop	French equestrian education system
HCCG	German equestrian education system
NSI	Neurobehavioral Symptom Inventory

NPC	National People's Congress
PACES	Physical Activity Enjoyment Scale
PANAS	Positive and Negative Affect Scale
PCL-5	Posttraumatic Stress Disorder Check List for Diagnostic and Statistical Manual of Mental Disorders(Fifth Edition)
PHQ-9	Patient Health Questionnaire
PTSD	Post-traumatic stress disorder
QLES-Q-SF	Quality-of-Life Enjoyment and Satisfaction Questionnaire
SPRINT	The Short Post Traumatic Stress Disorder Rating Interview
TBI	Traumatic brain injury
THR	Therapeutic horseback riding
VA	Veterans Administration

1. Introduction - Theoretical framework

In horse history, a modern form of equestrianism was developed in the 18th century, was used by the military prior to 1948, and became an official Olympic sport at the modern Olympic Games in 1900 (de Haan & Dumbell, 2016).

In the 16th century, equestrian sports originated in England, initially reserved for European royal families and aristocrats. The 18th century marked the emergence of a modern form of equestrianism. Equestrian jumping gained official recognition at the 1900 Olympic Games, with a brief absence before returning for the 1912 Stockholm Games. Notably, in 1952, the Olympic Games opened up equestrian competitions to female riders, making it the only sport where men and women compete on the same playing field. Equestrian remains the sole Olympic sport where riders and horses compete together. China's history underscores the significance of the horse industry, with ongoing modern transformations.

1.1. An explanation about horse racing history and connection with Chinese culture

The evolution of equestrian sports has led to diverse collaborations between humans and horses. Competition such as dressage, show jumping, and eventing obstacles, as well as pony equestrian tailored for children, showcase this diversity. Horse racing, combining aesthetics and competitiveness, has gained prominence. Additionally, equine therapy, fostering human-horse interaction, has become a noteworthy facet. This thesis comprehensively examines equestrianism, horse racing, and equine therapy. It delves into these subjects from the perspective of human-horse cooperation, conducting classified and directional research in these three domains within equestrian sports. China boasts a vibrant equestrian history, underscoring the historical importance of horses in commerce, communications, and national infrastructure, particularly along the ancient Silk Road. From the Yuan Dynasty to the present day, horse racing in China has maintained a consistent developmental trajectory, with traditional horse racing enjoying popularity across various dynasties. After a period of decline and intermittent activities, equestrian sports experienced a resurgence in the late 1950s, eventually attaining the status of a national sport in China.

The domestic horses in China played a foundational role in fostering commerce, communication, and state infrastructure along the ancient Silk Road. Simultaneously, they were instrumental in driving notable military, social, and political developments within the country (K. H. Park, 2000). Since the Yuan Dynasty (1271), equestrian pursuits have a rich history in Beijing. When the Mongolians established their capital in Beijing, they brought their favorite horse race with them, and it gradually gained popularity in the city. Throughout the Ming Dynasty (circa 1368), traditional Chinese horse activities continued, especially during the spring. Following the fall of the Ming Dynasty, the Manchus took control of Beijing, establishing the Qing Dynasty in 1636. During the Qianlong period (1736-1796), numerous racecourses were constructed in Beijing, hosting traditional Chinese horse racing during various folk festivals. The sport was embraced by individuals ranging from the royal family to common flag soldiers ("History of Horse Racing in Tianjin," 2020). Therefore, the royal family supported and encouraged this activity, which lasted until the early years of the Republic of China (1912-1949) ("Republic of China (1912–1949)," 2022). Towards the end of the Qing dynasty's Xuan Tong era (1909-1911), a so-called "Western-style horse race" emerged in Beijing under the name "horse racing" (*Hankow Chinese Merchants' Association Jockey Club Coupons (i.e. Stock Certificates)*, n.d.).

Following a period of decline, the practice of "horse racing" became intermittent until the late Republic of China. With the establishment of the People's Republic of China, equestrianism experienced a resurgence, and in the late 1950s, the Chinese government decided to elevate equestrian sports to the status of a national sport.

1.2. Process of equestrian development in China

Horses have played a crucial role in Chinese history. In 1977, China boasted the world's largest horse stock at 11.45 million RMB. However, by 2019, the national horse stock had decreased to 3.671 million, comprising 6% of the world's total and ranking fifth globally (*World Meteorological Organization*, n.d.). As the world's equestrian center, Germany has become the first choice for training and competition for the world's best riders and has created a substantial equestrian industry with 300,000 jobs as a result of equestrian activity (A Guide through the Amazing German Horse World, n.d.). This is in stark contrast to the current equestrian sports industry in China, which will yield greater profits.

The Chinese sports industry integrated into Chinese society approximately 40 years ago and is still considered a developing sector in the country. The inception of the Chinese sports business saw the establishment of the Chinese Equestrian Association in 1979, and it became a member of the FEI in 1982 (*Chinese Equestrian Association*, n.d.).

Since 1983, China has resumed national equestrian competitions encompassing three Olympic disciplines – dressage, showjumping, and three-day event – alongside folk equestrian sports. In the 1990s, as part of the economic exploration following the reform and opening up, China sought to accelerate equine sports. While many envisioned the potential benefits of horse racing, all horse racing venues were canceled in 1999 and have since been abandoned, marking the beginning of the evolution of equestrian sports.

Post the 2008 Olympic Games, equestrian enthusiasm surged in China. Since the release of the State Council's "Opinions on Accelerating the Development of the Sports Sector and Promoting Sports Consumption" ("No. 46") in 2014, the sports industry has captured widespread public interest, and equestrianism has received official support through this document (*Five Years after the Release of "Document 46", China Sports Industry Summit to Take the Pulse of the industry_ China International Sporting Goods Expo*, n.d.). Launched in late 2014, the sports business was officially acknowledged as a distinct category within China's economy. The 46th National Development and Reform Commission report outlines the goal of establishing a reasonably organized, functional, and comprehensive sports industry system by 2025. The report emphasizes the role of other industries in significantly driving growth and aims for the total size of the sports industry to surpass 5 trillion yuan (*[5 Trillion Market Size to Drive the Development of Sports Industry into the "Fast Lane"] - National Development and Reform Commission*, n.d.).

A notable upsurge in activity has been caused by the growing interest in equestrian activities throughout China, as seen by the creation of multiple equestrian clubs and a notable increase in participation rates. These groups provide as gathering places for riders of all ages and abilities, offering chances for practice, competition, and leisure riding. Equestrian facilities, which serve a wide variety of riders, are becoming more and more accessible, ranging from busy urban centers to tranquil rural getaways.

China's equestrian community is expanding, and one prominent indicator of this is the country's increased attendance at important international horse auctions and events. Chinese riders and breeders are becoming well-known worldwide, exhibiting their skill and knowledge to spectators everywhere. Engagement in esteemed occasions like the Beijing International Equestrian Masters and the Longines Masters Series signifies China's rise to prominence in the global equestrian sphere.

Furthermore, equestrianism is becoming more and more popular in China outside of the sports and competitive worlds. It includes a wider range of cultural and social phenomena, as equestrian activities become more and more popular with people from all walks of life. The equestrian lifestyle has captivated people from many walks of life, from wealthy metropolitan elites seeking leisure and status to rural villages embracing equestrian traditions rooted in agriculture and horsemanship.

This increase in interest is encouraging more international cooperation and exchange in addition to growth within the domestic equestrian sector. Chinese investors are buying premium horses from well-known lineages and funding elite breeding operations at an increasing rate. International equestrian organizations are also forming alliances to promote the sport and ease knowledge transfer as they recognize the potential of the Chinese market.

In summary, the equestrian industry in China is a dynamic and thriving field, with anticipated continued growth and development in the years to come. Western countries have been at the forefront of this transformation, reshaping the traditional roles of horses in agriculture, transportation, and military affairs into modern industries centred around sports, leisure, and product consumption. The interconnectivity of the primary, secondary, and tertiary sectors within the modern equine industry is a global phenomenon (*Primary, Secondary and Tertiary Sectors - What Is a Business?*, n.d.). To accommodate the change in the social function of horses, an industrial chain was also developed. In contrast to the well-developed western horse industry chain, it includes activities such as horse breeding, horse conditioning, vaccination, horse racing, horse trafficking, horse equipment, and horse betting. Although China's horse industry supply chain is far from perfect, it is on the path to improvement. The development of equestrian sports and the horse industry in China can be informed by the success of the Western horse industry (*Policy Dividends! The Fifth Plenary Session of the Eighteenth Central Committee to Help the Development of Equestrian Sports in China*, n.d.).

The evolution of China's equestrian industry aligns with the new phase of Chinese-style socialism. The central societal contradiction has shifted towards the tension between the increasing aspiration for an improved standard of living and the need for balanced and sufficient growth. Guided by the new development concept, the systematic promotion of "human-centred, human-horse integration" is a key focus in the realm of equestrian sports (Jingfeng, Tan, n.d.).

With growing interest in horse riding and equestrian sports, the equestrian industry in China is witnessing significant expansion and development. China, with its rich tradition of horsemanship, has seen a surge in its community of riders, trainers, and enthusiasts. To meet the increasing demand, equestrian facilities, including riding schools and stables, have been established in cities across the nation. Exploring specific facets of China's equestrian journey, horse racing holds significant importance. Despite the current ban on horse racing in mainland China, local horse racing events with deep historical roots continue to persist. The management and dynamics of modern horse racing are influenced by each country's distinct socio-political and economic environment. Government support, well-defined regulations, and a comprehensive framework are crucial factors contributing to the success of the industry. This thesis explores three distinct categories within the realm of horse sports: horse racing, equestrianism, and equine therapy. The first part, horse racing, is primarily associated with leisure tourism, while the second, equestrianism, is centered around sporting events. The third part, equine therapy, aims to elevate the horse industry to a new level, offering potential contributions to the medical field. Although these three aspects share commonalities, their respective social groups are entirely distinct. Each category represents a unique facet of the equine industry, with its own distinct characteristics, purposes, and social implications.

The first category is horse racing, a pursuit deeply intertwined with leisure tourism and entertainment. Horse racing events, whether on prestigious tracks or local courses, attract spectators from all walks of life, drawn by the thrill of competition and the allure of wagering. From the opulent settings of renowned races like the Kentucky Derby to the grassroots appeal of community-run meets, horse racing serves as a vibrant tapestry of culture and tradition, steeped in history and spectacle.

The modern horse racing industry encompasses elements of sport, entertainment, and recreation, with its origins rooted in Britain as the birthplace of contemporary horse racing. The development of horse racing in Britain is deeply ingrained in its

cultural fabric, symbolizing values such as wisdom, bravery, agility, loyalty, manageability, nobility, chivalry, and gentlemanly manners. The horse has played a pivotal role in traditional British national culture.

China, with its diverse national cultures, possesses a vibrant horse culture that has the potential for significant growth. In recent years, there has been an explosion in special tourism centred around the cultures of ethnic minorities. Tourists often visit not only tourist villages but also minority villages to gain insights into minority cultures, with Tibetans and Mongolians being prominent in this regard. If ethnic minorities can promote their own horse culture, the broader horse culture in China is poised for development. While conditions for introducing horse racing are not currently favourable, maintaining localized horse races that have existed for many years and contribute to the local economy is preferable.

In mainland China, horse racing is presently prohibited. Various nations and regions conduct modern horse racing differently due to differences in their histories, cultures, socio-political situations, and economic systems. Although there are similarities, there are also notable differences in how modern horse racing is conducted and managed, stemming from the operational management model employed.

In the United States of America, the taxation of horse racing and horse lotteries is regulated by state-specific joint venture structures, allowing for sales across state lines. Each racecourse typically has an officiating committee comprised of racing deacons. To ensure openness, fairness, and equity, the horse racing deacon board often includes public officials appointed by the government, and the judges are state government employees independent of the racecourse. In commercial horse racing in the United States, there is a high rebate rate alongside a low tax rate. Government support is necessary for the U.S. horse racing industry to be a global leader (Yang Lin & Ling Quanling, n.d.).

Nevertheless, all these activities are anchored in a common foundation: laws and regulations. Despite being a betting sport, the government-led horse racing industry takes proactive measures to avert issues by formulating specific guidelines, rules, and regulations that govern the judging process. These regulations disclose the amounts of bets and payouts for each race, ensuring the accuracy and correctness of odds calculations and payouts, and regular announcements regarding the flow of money into the industry.

The "China Welfare Lottery" came into existence in the late 1980s and early 1990s. To streamline the management, numbering, printing, and issuance of sports lottery tickets on a global scale, the National Sports Commission established the Sports Lottery Management Center in early 1994. This initiative became known as the "China Sports Lottery". Following the introduction of the Chinese soccer lottery in October 2001, the lottery gradually gained more competitiveness. A basketball betting lottery was subsequently introduced in 2005 (*China Sports Lottery_ Baidu*, n.d.).

Instead, it discusses events directly relevant to the equestrian industry. In 1984, China joined the Olympic Games, but it wasn't show until the 2008 Beijing Olympics that Chinese equestrians participated. This marked the initiation of equestrian development in China, despite having 300 equestrian clubs prior to the 2008 Beijing Olympics when six equestrian athletes entered the Olympic stadium. Since the 29th Modern Summer Olympic Games in Beijing in 2008, equestrian sports have gained attention among the Chinese public. The absence of FEI-certified disease-free zone criteria, placing mainland China in the epidemic zone for equine infectious diseases, has been a limiting factor ("2008 Summer Olympic Games Equestrian Competition," 2022).

Hong Kong has extensive experience hosting international competitions over the years, making it a key factor in the decision to move the 2008 Beijing Olympic Equestrian Games there. Additionally, the establishment of an FEI-certified disease-free zone in Hong Kong provides economic support for the local community. The absence of qualified disease-free zones on the mainland means that high-level riders from abroad can only purchase one-way tickets for their horses to fly to mainland China, with concerns from many countries' health authorities about the safety of allowing these horses to return home.

After persistent efforts and continuous improvements, the Asian Games in Guangzhou in 2010 marked a significant milestone when Conghua City became the first certified temporary epidemic-free zone for international equestrian competitions in mainland China. This development marked the commencement of equestrian competition in China (*Conghua District Epidemic Free Zone Management Center -Guangzhou Conghua District Federation of Trade Unions*, n.d.).

In 2016, China introduced the "National Fitness Plan (2016-2020)," explicitly emphasizing the active cultivation of sports with consumer-led characteristics,

including equestrianism. This initiative coincided with the release of both the "13th Five-Year Plan for Sports Development" and the "Health China 2030" plan. Several local governments in China implemented various measures to support and promote equestrian sports, but official statistics tracking the growth of equestrianism in China were not available until 2016 when it gradually gained public awareness.

The second category, equestrian, on the other hand, is centered on competitive sports and the art and skill of horse riding. The disciplines that are included in equestrian activities are varied and include show jumping, eventing, and dressage, which are known for their high levels of adrenaline. Equestrians of different ages and skill levels participate in the sport, driven by a shared love of horses and a commitment to becoming experts in their chosen field. Equestrians, whether they are vying for Olympic gold or just taking pleasure in the friendships formed at regional events, create a tight-knit group united by a love of horses and horsemanship.

Equestrian part of the objective of this thesis is to compile and analyze the developmental factors of equestrian sports in China based on existing data, focusing on the period from 2015 to 2020. The analysis highlights existing challenges and offers suggestions for the betterment of the equestrian industry in China in the future.

In 2018, the State Council's General Office issued the "Guidelines on Accelerating the Development of Sports Competition and Performance Industry", emphasizing the critical role of developing the sports competition and performance industry in unlocking consumption potential, improving people's livelihoods, and revitalizing economic growth. This strategic direction set the stage for the growth of equestrian sports.

In 2020, the Ministry of Agriculture and Rural Affairs and the State General Administration of Sports jointly released the National Equine Industry Development Plan (2020-2025), a groundbreaking initiative that combines horses and sports to plan the future development of the equine industry. This plan's primary objective is to encourage equine breeding through athletic events, cultural tourism, and avenues.

1.3. Review of equine therapy in PTSD situation now

The third category, equine therapy, focuses on the therapeutic benefits of equine interactions rather than the recreational and competitive elements of horse sports. Programs for equine-assisted therapy make use of the special relationship that exists between people and horses to treat a variety of mental, emotional, and physical issues. The present research part focuses on the prominent psychiatric treatment case of post-traumatic stress disorder (PTSD). Consequently, this section of the research aims to conduct a comprehensive analysis, primarily addressing the existing research gap pertaining to PTSD over the previous five years. Equine therapy, which uses the therapeutic power of horses to support emotional well-being and personal development, offers a holistic approach to healing for a range of patients, from soldiers with PTSD to youngsters with autism spectrum disorders.

Due to the widespread adoption of this therapeutic approach, a significant portion of the population remains unfamiliar with horse treatment. Consequently, it is imperative to commence with a comprehensive elucidation of horse treatment. The subsequent introduction only focuses on the research methodologies employed in equine therapy within the domain of post-traumatic stress disorder (PTSD), owing to the extensive array of treatment cases.

The Equine-Assisted Growth and Learning Association (EAGALA) utilises a total of 600 equine-assisted intervention programmes, as documented in the existing literature (Eagala - A Global Standard in Equine-Assisted Psychotherapy and Personal Development, n.d.). As time has progressed, the number of people using equine interventions has increased (Lee et al., 2016). Research on equine-assisted intervention therapy has been limited and frequently poorly constructed up until the present day. This research has been conducted to address a variety of mental health issues, including post-traumatic stress disorder (PTSD). The research has been characterised by small sample sizes, unreliable assessments, unstandardized treatment techniques, and conflicts of interest among researchers.

An rise in the prevalence of post-traumatic stress disorder (PTSD) from 10% (in civilians) to 30% (in military personnel) can be attributed to the increased risk of trauma that military personnel endure, which can occur from war, injury, captivity, and sexual assault (Hoge et al., 2004; Murdoch et al., 2004; Zinzow et al., 2008). Members of the armed forces who suffer from PTSD are an essential component of the area of research on PTSD. The participation of horses in therapies has

developed into a novel supplementary therapy approach for a number of ailments, according to the most recent study that has been conducted.

With the purpose of providing a theoretical and empirical framework for the development of therapeutic horse interaction, the purpose of this study is to investigate prior treatment instances involving veterans who suffer from PTSD. To be more specific, the primary goals of the paper are to describe the demographics of the veterans who participated in equine-assisted interventions and the screening processes that were used in their selection. Additionally, the paper aims to describe the specific characteristics of equine-assisted interventions that have been applied to veterans, including the intervention methods, study design, and results utilised in these interventions.

Equine-assisted therapies have been an essential component of animal-human interaction therapy for the past sixty years, as was indicated earlier. The fact that current systematic research has shown that (Palomar-Ciria et al 2023) and narrative review (Marchand 2023) present a more detailed overview of the five different types of therapies that have been done in this field compared to previous reviews that have been conducted.

The following is the structure of the structure of the work: An introduction to a variety of approaches to horse therapy is provided in the first portion of this article. The details of these procedures are presented in the second section, which also addresses the current level of research on horse therapy for PTSD over a period of five years.

The initial section provides an overview of the concept of PTSD. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychiatric Association, 2013), PTSD diagnostic criteria encompass four domains: re-experiencing (recurrent thoughts or dreams) of traumatic events, avoidance (avoidance of thoughts or feelings associated with traumatic events), negative thoughts and moods (blaming oneself and/or others and maintaining a pessimistic perspective), and anger arousal (outbursts of intense anger). Furthermore, the long-term consequences of post-traumatic stress disorder (PTSD) are associated with notable functional impairment, diverse mental comorbidities, suicidal inclinations, substance misuse, persistent pain, compromised physical well-being, and delayed initiation of therapy (Sareen et al., 2007; Seng et al., 2005; Spitzer et al., 2009).

PTSD is a psychological condition characterised by the manifestation of symptoms following exposure to one or more stressful experiences (American Psychiatric Association & American Psychiatric Association, 2013). Individuals with PTSD are susceptible to several dangers, including diminished quality of life, substance misuse, suicide, engaging in dangerous and harmful behaviours, reduced productivity, domestic violence, and poor relationships (Hourani et al., 2011). PTSD is not primarily caused by traumatic neurosis, which is associated with an individual's susceptibility, but rather by an external incident that causes the disease. The studies conducted by Gillies et al., Bradley et al., and Schneier et al. demonstrate that certain individuals had symptomatic improvement during the course of treatment, but others did not (Bradley et al., 2005; Gillies et al., 2013; Schneier et al., 2012).

In the subsequent section, it is imperative to elucidate four distinct therapeutic interventions. The six aforementioned interventions encompass animal-assisted therapy (AAT), equine-assisted interventions, equine-assisted psychotherapy (EAP), equine assisted activities and therapies (EAAT), equine-assisted therapy (EAT), and equine-assisted services (EAS).

The therapeutic approach known as animal-assisted therapy (AAT) entails the collaboration of a patient, a therapist, and a trained animal, with the aim of attaining a pre-established therapeutic goal (Engelman, 2013). People of all ages, including those with mental and physical impairments, have been shown to benefit from animal-assisted therapies (AATs), which have been shown to be beneficial in treating patients.

Alternative and alternative therapy (AAT) has proven to be an effective treatment strategy for both adults and children who have both psychological and physical problems. The patient's affective, cognitive, motor, and social functions are all going to improve from this particular treatment, which is an adjuvant treatment (Beck, 2006). AATs have been shown to increase communication, patient responsiveness, social interaction skills, socialisation, activities of daily living, and overall well-being. This has been proved through research (Jorgenson, 1997).

There are a number of various kinds of animals that can be used in AAT, with cats, dogs, and horses being the most prevalent types of animals used at the moment (Farmer, 2021; Kinney et al., 2019). Additionally, it is essential to highlight the fact that AAT has been successfully utilised in the treatment of a wide range of physical disorders. People who have been through traumatic experiences have

been the subject of a substantial amount of research that has been conducted on the topic of alternative activity interventions (AAIs) that are centred on horses (How Animals Affect Us, 2011). In spite of the fact that AATs are widely used, there have only been a limited number of high-quality empirical research that have investigated the effectiveness of these techniques in the treatment of post-traumatic stress disorder (PTSD).

Advocates of Equine-assisted therapies contend that the therapeutic interplay between horses and people can facilitate patients in acquiring fresh insights and modifying their conduct by acting as catalysts for the formation of novel concepts and emotions. Despite the fact that the field of equine-assisted psychotherapy (EAP) is still in its infancy, there is a considerable body of evidence in the literature that supports the utilisation of AAT for those who suffer from disturbances connected to trauma. A number of potential advantages include the development of nonverbal communication skills through interaction with horses, as well as a reduction in blood pressure, heart rate, and anxiety levels. Additionally, Applied Animal Therapy (AAT) has the potential to effectively treat a variety of chronic mental illnesses, including depression, anxiety, attention deficit/hyperactivity disorder, conduct disorder, dissociative disorder, Alzheimer's disease, dementia, autism, and other conditions (Ahn et al., 2021; Alfonso et al., 2015; Bass et al., 2009; Matusiak-Wieczorek et al., 2020; Nurenberg et al., 2015; Pálsdóttir et al., 2020; S. Park et al., 2021; Yoo et al., 2014).

EAP was founded in 1990 and saw quick growth across Europe and the United States (Bachi et al., 2012). Limitations in EAP research may arise from the inherent variability of the intervention and the diverse contexts in which it is administered. However, it is feasible to conduct rigorous randomised controlled trials to assess the efficacy of EAP treatments (Marchand et al., 2021).

EAP shares similarities with other AATs in terms of its lack of empirical support, however it encompasses numerous components and benefits. EAP and AAT function in distinct manners. Dogs and cats are frequently utilised for Animal-Assisted Therapy (AAT) due to their status as devoted domestic companions. Horses exhibit distinct characteristics compared to dogs and cats, since they possess a heightened sensitivity to their surroundings and necessitate instruction in cultivating trust towards humans. They possess a heightened sensitivity to the emotions and actions of those in their vicinity (Burton et al., 2019). The efficacy and potency of EAP have been demonstrated in addressing the challenges faced by

those grappling with fear, sadness, rage, anxiety, and several other emotional illnesses (Ferruolo, 2016).

Second, in recent years, there has been a significant increase in the popularity of utilising horses for equine assisted activities and therapies (EAAT). This has resulted in more than 66,000 individuals, including over 6200 veterans and active-duty military personnel, receiving support from one of the 800 certified member centres and 4800 certified instructors (Malinowski et al., 2018).

The existing body of literature in the domain of Equine-Assisted Animal Therapy (EAAT) has predominantly concentrated on the realm of physical rehabilitation, with a significant proportion of scholarly papers examining the impacts of human-horse interaction (Aranda-García et al., 2015; Bunketorp-Käll et al., 2017; Chinniah et al., 2020; Hemachithra et al., 2020; Yoo et al., 2014; Žalienė et al., 2018). The treatment programmes largely concentrate on equine riding, and other associated research domains have resulted in notable progress in the management of physical mobility issues (Uchiyama et al., 2011).

Furthermore, EAT is increasingly being recognised as a supplementary and substitute therapy for PTSD. Equine-facilitated cognitive behavioural therapy (EAT) is an alternative term for EAT. Insufficient study has been conducted on the effectiveness, practicality, and safety of EAT in treating PTSD, and there is a lack of comprehensive treatment manuals for administering EAT. The study utilised a selection of 10 publications to investigate several branches of eating disorders (EAT), including therapeutic horseback riding (THR) and EAT-PTSD therapy, which are specifically tailored for individuals with post-traumatic stress disorder (PTSD). THR, a subdivision of EAT, primarily conducts research on children diagnosed with autism spectrum condition (Bass et al., 2009). In addition, THR is an essential EAT technique.

Nevertheless, it is important to distinguish THR from hippotherapy, as the latter involves specialised work by physical, occupational, and speech therapists who focus on enhancing the functional capabilities of horses in patients (Silkwood-Sherer, 2003). The establishment of a strong connection between the patient and the horse is encouraged by groundwork interaction and THR (Yorke, 2003).

In addition, The phrase "equine-assisted services" (EAS) encompasses a diverse range of artificial intelligences (AIs) that are specifically meant to provide benefits to human users (Wood et al., 2021). Given the nascent stage of scientific research of EAS therapies, comprehensive investigations are typically inadequate, and the

absence of a standardised intervention technique poses challenges in terms of comparing and replicating results (Marchand et al., 2021). A novel intervention paradigm known as Whispers with Horses was utilised in one of the ten publications incorporated in this study (Marchand et al., 2023).

At present, there is no established plan for equine therapy in China, and its potential incorporation into the horse industry is contingent on the industry's future evolution. Equine therapy remains in its nascent stages of development. Based on the remarkable journey of Danish rider Lis Hartel, equine therapy adds another dimension to the equestrian realm. Following this extraordinary event, medical and equine specialists in Europe started implementing therapeutic riding programs at their facilities (Berg & Causey, 2014). The exploration of equine healing commenced in 1960 and has unfolded over six decades. The utilization of horses in therapy is increasingly recognized as a viable option for addressing a diverse array of mental health disorders (Masini, 2010). The therapeutic utilization of horses gained momentum in the 1960s and has evolved into a valuable option for addressing various mental health conditions. Despite the expansion of equine-assisted therapy programs, research in this field encounters challenges, such as small sample sizes and non-standardized treatment techniques. The military, given its elevated risk of trauma exposure, especially in combat, has emerged as a crucial focal point for equine therapy research. This doctoral thesis exclusively undertakes a systematic review and analysis within the domain of equine therapy, aiming to comprehend the present developmental status of this therapeutic approach.

2. Objective

2.1. General objective

The general objective is examining how horse-human cooperation and how development in sports sector—in this thesis horse racing, equestrian, and equine therapy were discussed.

2.2. Specific objectives

- Specific objective 1: Examines the challenges faced by horse racing through the lens of historical evolution and current practical development.
- Specific objective 2: Aims to undertake an in-depth analysis of the current state of China's equestrian industry and evaluate the influence of pertinent legislation on its growth.
- Specific objective 3: Examines the specific details and rationale of equine-assisted therapy and the focus of equine therapy research over the past five years.
- Specific objective 4: Aims to provide a concise overview of the government's policies which growth of equestrian sports in China over the past four decades (since 1978).

3. Methodology

For the purpose of investigating the intricacies of human experience and behaviour, qualitative research makes use of a wide variety of data gathering methods. These methods are specifically designed to be collected. Researchers are able to enter the natural habitats of their subjects and observe and interact with them in order to gather first-hand knowledge through the use of participant observation, which is one of the most important approaches among these (Vindrola-Padros & Johnson, 2020). A deep understanding of social relations and cultural dynamics can be developed via the utilisation of this methodology. This is accomplished by revealing hidden norms and values that may not be immediately evident through the utilisation of alternative approaches. Similar to this, focus groups offer an interesting environment in which to investigate the dynamics of a group as well as their perspectives on a certain topic. Researchers are able to discover underlying motivations that influence people's views and behaviours by assembling a diverse group of participants in a debate that is facilitated. This allows them to discover shared ideas, opposing points of view, and underlying motivations (Aspers & Corte, 2021). The participatory engagement and open-ended questioning that are characteristic of focus groups make them an ideal setting for the production of rich qualitative data and the capture of the nuances of social discourse.

Another crucial tool in the toolkit of a qualitative researcher is the interview, which offers a procedure that is both structured and adaptive for eliciting profound insights from individuals. Researchers have the ability to delve into the experiences, beliefs, and attitudes of participants through one-on-one or group interviews, which provide insight into the subtleties of the participants' subjective world (Morse, 2021). Researchers are able to acquire essential qualitative data by cultivating an atmosphere that is warm and compassionate, which enables participants to openly communicate their thoughts and emotions throughout the research process. Enhanced interactive tools are the result of document analysis, which involves the investigation of artefacts that are either textual, visual, or audio-visual in nature and that provide windows into the social environment. In addition to containing social behaviours and cultural meanings, documents function as tangible relics of human activity. The government documents and personal diaries, as well as the depictions in the media and the online conversation, are all examples of these (Skjott Linneberg & Korsgaard, 2019). Scholars are able to improve their understanding of social processes by undertaking a rigorous study,

which enables them to uncover implicit patterns, inconsistencies, and discursive tactics that are disguised within these textual materials.

All of these different approaches to data collection, when combined, make it possible for qualitative researchers to investigate the complexities of the human experience in a sensitive and comprehensive manner, therefore illuminating the intricate web of social existence. Through the adoption of the iterative nature of qualitative inquiry and the practice of reflexivity, researchers are able to transcend their own subjectivities and shed light on the complex features of the phenomenon that they are examining. Therefore, qualitative research is seen to be an endeavour that is both dynamic and transformative, and it offers profound insights into the intricate fabric of human experience.

When it comes to grasping personal experiences, gaining an understanding of subjective viewpoints, or analysing complex social events, qualitative research is particularly important. In addition to quantitative research methods, which place an emphasis on numerical data and statistical analysis, it provides a comprehensive and in-depth grasp of the subject matter of the investigation.

Every sort of research, including quantitative research, incorporates the key aspects that we have defined to characterise them. These important elements include variations, technique, proximity, and increased comprehension. Just like a financial analyst, every type of research incorporates these essential elements. It is possible that the term "What is Qualitative in Research?" could have been used as the title of the article instead. According to our point of view, qualitative research should only be considered when all of the components of the definition are employed. Following a thorough examination of the qualitative research paper, I have come to the conclusion that the methodology proposed by Cecilia et al. would be an excellent way to incorporate into my thesis. The primary objective of her research is to find ways to speed up the process of conducting qualitative research. After conducting a two-stage systematic evaluation of the relevant literature, we discovered that there are six primary motivations for employing quick approaches. Among these reasons are the following: saving time, saving money, collecting more data, boosting efficiency, enhancing accuracy, and attaining a closer fit to the facts that research participants have described (Vindrola-Padros & Johnson, 2020).

Following an examination of the aforementioned approaches, the document analysis was ultimately determined to be the primary form of data analysis utilised in the qualitative research methodology. When it comes to quantifying and

thoroughly reviewing scientific articles, this methodology has the most potential to be effective (Leung et al., 2017). In addition, another research emphasises that this method is effective for doing documentary analysis and is scientifically sound (López-Belmonte et al., 2020). Particular attention is paid to the examination of co-words within the framework of the research design (Hirsch, 2005).

The purpose of this section is to provide an overview of the process, and the sections that will follow it will demonstrate the analysis method as well as the content of the analysis for each individual detail.

3.1. Study design

The methods that were utilised in these four separate articles are discussed in this section, which is based on the introduction to qualitative research that was presented in the section before this section.

Comparable methodologies were utilised in studies 1 and 2, as well as in the one case study. In the first study, the research strategy focused on government papers and news media as the primary sources of information on horse racing themes. This was accomplished by conducting a search for the word "horse racing" and utilising the method that was proposed by Ryan and Bernard. The choosing of methods and themes for discussion, specifically: There are two items to discuss: intervals during which horse racing is permitted and intervals during which it is not permitted. This article is organised in accordance with the chronological order of the development of "horse racing" in China since it was first introduced. For the purpose of analysing China's considerations over whether or not to allow horse racing as a sporting event, we will first examine the history of horse racing. The significance of this method lies in the fact that it sheds light on the history of horse racing as a sport in China and provides additional information regarding the attitudes of different levels of government at different times. By doing so, we will be able to evaluate the connection between the type of institution and the level of motivation or engagement. This form of analysis has the potential to offer more insights into the discussion of attitudes with the goal of growing the future of horse racing as an industry. Additionally, it will offer a firm foundation for the extension of practical work in the future. Work based on empirical evidence.

Exactly the same research strategy was utilised in study 2 as it was in study 1: a one case study. The data for the study came from official and semi-official papers, and the researchers collected them using a qualitative methodology. Equestrian

sports have the potential to accelerate and improve the quality of their development if they have a better grasp of the data that has been compiled and analysed. This will be affected by more informed policies and suitable economic models. It is also anticipated that China's horse industry, which is related to horses in general, will develop more significantly. At the Beijing Olympics in 2008, China competed in equestrian disciplines for the very first time. This marked the beginning of data mining. In order for China to further enact legislation that will assist in the growth of modern equestrian sports, it is vital for China to take into consideration the lessons gained from the expansion that took place between the years 2015 and 2020. The development of China's horse industry, which is a one-of-a-kind industry that merges the primary, secondary, and tertiary industries and has a significant potential for expansion, can be facilitated by the promotion of equestrian sports. There are four different points of view that are taken into consideration while analysing the data: the general sports economic environment, the sports economic environment, and the development of equestrian sports in China. Policies that are related to equestrian activities, as well as the development of equestrian activities and economic enterprises that are driven by equestrian activities.

An approach known as a systematic review was utilised in Study 3. Equine-assisted intervention therapy has been around for close to sixty years, and it has been demonstrated to have considerable therapeutic impacts on patients who are undergoing any kind of psychotherapy. Because of the rise in the amount of research conducted on EAT, there is a growing variety of equine-assisted intervention treatments that are currently available. This study examines the characteristics of several equine interventions by comparing them to the existing literature on the use of equine-assisted interventions for veterans suffering from post-traumatic stress disorder (PTSD). Additionally, this research includes a review of equine-assisted interventions that have been conducted over the course of the past five years (2018–2021). An analysis of the material that has been published up to this point on equine-assisted therapies for veterans suffering from post-traumatic stress disorder (PTSD) was carried out. The criteria for the review were satisfied by ten papers, which served as the primary data for the analysis.

An overview of Chinese equestrian policy documents and regulations from 1978 to 2022 is provided in the fourth item of this collection. As a result of the examination of policies and regulations, the horse business in China is transitioning from a traditional model to a model that is based on leisure sports. Using Whitemore and

Knafl's five-step approach (Whittemore & Knafl, 2005a) to policy analysis, a comprehensive examination of the content of policies, the context in which they are implemented, and the governance mechanisms were carried out. The extraction, classification, and examination of 29 documents originating from official and semi-official sources have been completed as of the year 2022. This article intends to provide a concise summary of the policies that the Chinese government has implemented over the past four decades in order to foster the growth of equestrian sports in China.

3.1.1. One case study

One case study was utilised as a research design in both study 1 and study 2, and it was based on the concept of looking for congruence and corroboration, as well as evaluating the significance of published sport-related policies and documents (Robert K. Yin, 2002). A qualitative research approach was taken by us in order to analyse sports policies and the most recent trends linked to equestrian sports in China. We used documents from official and semi-official sources for analysis in order to process the qualitative data that was acquired (Patton, 2014). The significance of Patton's qualitative research approach, which was articulated in his work in the process of carrying out this study, is something that we both acknowledge. This methodology places an emphasis on doing an exhaustive investigation of a subject by means of the examination of a variety of sources, with the intention of generating conclusions that are both insightful and contextually rich. We hoped that by employing this methodology, we would be able to guarantee the impartiality and validity of our findings, which would contribute to a comprehensive examination of current developments in China's policies regarding sports related to horse sports.

3.1.1.1. Study 1

Our qualitative research approach involved a thorough examination of documents sourced from official and semi-official resources in order to further explore horse racing-related sports policies and current trends in China. By employing this technique, we hoped to develop a nuanced understanding of the subject and offer insightful information about the state of Chinese horse racing at the time.

Our research was built on official sources, such as government reports, policy documents, and regulatory frameworks. These papers provided a detailed breakdown of the laws and rules governing horse racing in China. They offered

insightful information regarding the government's position on horse racing, its strategic goals, and the steps taken to grow and manage the sport.

Additionally, we also used semi-official sources, which included press reports, statements from industry associations, and industry publications. These resources offered a more varied viewpoint and shed light on the various parties involved in Chinese horse racing. They made it possible for us to comprehend the perspectives of experts in the field, fans of the sport, and other relevant parties, providing a well-rounded analysis of the subject.

We aimed to capture the nuances and complexities of Chinese horse racing by combining these official and semi-official sources. We were able to examine both formal policies and regulations as well as informal practices, trends, and new developments within the industry thanks to the qualitative research approach. We sought to present a comprehensive understanding of the state of horse racing in China through this in-depth analysis.

3.1.1.2. Study 2

When conducting Study 2, the objective was to collect multi-range, accurate correlation data. We employed a wide variety of keywords to cover a variety of businesses, such as the equestrian industry and professional equestrian activities; in Chinese, these keywords are: “马术运动,” “马匹,” “马术,” “马”. We covered these industries from 2015 to 2020. The compilation of its findings included the utilisation of data from three distinct sites. There are a variety of sources, such as scholarly publications and newspapers, Internet sites, and official annual reports from key sports bodies and municipal governments. The State Council, the State Sports General Administration, the Ministry of Finance, the National Development and Reform Commission, the Department of Science and Education, the State Sports General Administration, the General Office of the State Council, the State Sports General Administration, and the National Bureau are all entities that are involved in the administration of sports in the state. The State Bureau and the General Office of the State Council are two other institutions that provide information. In addition, the data originate from semi-official sources of mass media, newspapers, two of the most well-known equestrian magazines in China (Horsemanship and World Equestrian), China Sports Practitioner Training Network, Equestrian Online, Guangming Daily, Malaysia.com, JMedia, Xinhua News Agency, and government publications (National Sports Strategy). Every single one of these sources is regarded as being semi-official. In conclusion,

statistics were gathered from other yearbooks that were issued by a variety of local and provincial administrations.

It is essential to take into consideration that Taiwan, Hong Kong, and Macau were not included in the findings of the study. Furthermore, in the context of this study, the term "province" refers to all of China's provinces, municipalities, and autonomous territories. And make use of charts to present the facts. Without offering any commentary, the findings were reported. The aims of the study were accomplished through the utilisation of graphical analysis to examine the data that was received from the sources that were mentioned before.

3.1.2. Systematic review

Systematic reviews adhere to a well-defined procedure in order to investigate a particular research question. This objective is accomplished by conducting a thorough examination of the available scholarly works, doing a rigorous evaluation of the number and quality of research findings, and performing a comprehensive analysis of the evidence in order to integrate responses to the research inquiries. The collection of evidence in systematic reviews can be conducted using either qualitative or quantitative methods. The QUOROM statement was introduced in 1999 with the aim of enhancing the reporting of meta-analytic studies (Moher et al., 1999). This declaration introduced the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standard (Page et al., 2021). The PRISMA declaration encompasses meta-analytic studies and systematic reviews, comprising a compilation of 27 essential components that must be incorporated when documenting a systematic review or meta-analysis (*Cochrane Handbook for Systematic Reviews of Interventions*, n.d.).

A fundamental distinction between a systematic review and a conventional narrative review is to the meticulous, transparent, and replicable search process that is an essential component of a systematic review (Rother, 2007). When evaluating and analysing review articles, it is crucial to comprehend the methodology employed, the scholarly objective, and the level of credibility associated with the piece (Sataloff et al., 2021).

A literature review is distinguished by a broad procedure that may or may not encompass a methodical and thorough exploration, evaluation of quality, and synthesis of research findings in a narrative manner. In general, these findings are commonly presented in a sequential or thematic format. On the other hand, a

systematic review is characterised as thorough and all-encompassing, since it methodically seeks, assesses, and combines research findings, typically adhering to a set of guidelines, and thereafter presents "the existing knowledge, practical recommendations, and remaining aspects". Uncertainties, ambiguity over research findings, suggestions for future research (Grant & Booth, 2009). Hence, although it is possible to perform literature reviews in a systematic manner, the primary objective of a systematic review is to assess and integrate the available information in order to address specific inquiries based on a predetermined protocol review topic. The authors define a review as a methodical examination of the current body of literature in a certain topic, without aiming to address a specific research question.

The contemporary evidence-based review business is characterised by a growing amalgamation of specialised terminology, collaborative efforts, foundational structures, databases, online platforms, publications, tools, criteria, and online educational programmes (MacLure et al., 2016).

Reviewers meticulously record every step of the search process, with the goal of guaranteeing the replicability of evaluations and a thorough search methodology. The findings may encompass many outcomes, each characterised by its distinct term. It is imperative for readers to comprehend the distinctions among various types of reviews, as only meticulously executed systematic reviews offer the utmost level of evidence, as advocated by Sir Ian Chalmers, a renowned health services researcher and one of the pioneers of the Cochrane Collaboration (Jpt, n.d.). The typology proposed by Grant and Booth encompasses 14 distinct categories of reviews. The reviews that are neither narrative reviews or critical, documentary, cartographic, meta-analysis, mixed methods, overview, qualitative systematic, fast, scoping, or status quo reviews are considered to be the most sophisticated, systematic, systematic search and review, systematisation, or umbrella reviews.

Rapid reviews are a method of synthesising knowledge in which certain aspects of the systematic review process are streamlined or excluded in order to generate information promptly (Khangura et al., 2012). While there are several rapid review programmes available globally (Watt et al., 2008), there is a limited body of research that has investigated their technique. Our objective was to analyse rapid review methodologies, recommendations, influence, and comparisons using a scoping review.

3.1.2.1. Study 3

In this work, a systematic review is presented. Extensive searches were performed in the US National Library of Medicine (PubMed, Bethesda, MD 20894, USA), Medical Literature Analysis and Retrieval System Online (MEDLINE), and Web of Science databases. These databases are widely recognised for their collection of articles that are of outstanding quality and dependability, providing strong bibliographic assistance. The search approach outlined in Table 2 was utilised to identify original articles that specifically addressed horse therapy within the last five years.

Table 2 Searching strategy in databases.

Search strategy	Description
#1	(horse PTSD) OR (therapeutic riding PTSD)
#2	hippotherapy PTSD
#3	(equine assisted PTSD) OR (horse treatment PTSD)
#4	# 1 AND # 2 AND # 3

3.1.2.2. Study 4

The following is the outline of the contents of the work: In the first section, a quick summary of the available literature on Chinese sports policy is presented; in the second section, a description of the methodologies utilised for the study is provided; and in the third section, the development of equestrianism policy and regulation is presented, which may be broken down into three phases: the budding phase (1978–2004), the preparation phase (2005–2012), and the development phase (2013–2022). A number of China's sports policies have not developed in a manner that is consistent with the most recent developments and trends. The authors Li et al. focused their attention particularly on the new developments in equestrianism in China (Li, López Adán, & de la Rubia Rianza, 2022). To provide a straightforward explanation, we made use of figure 2.

It has not been possible to conduct a comprehensive investigation on the development of China's equestrian policies over the course of time, despite the fact that previous studies have provided vital insights. By conducting an analysis of original documentary sources, the purpose of this paper is to fill this vacuum.

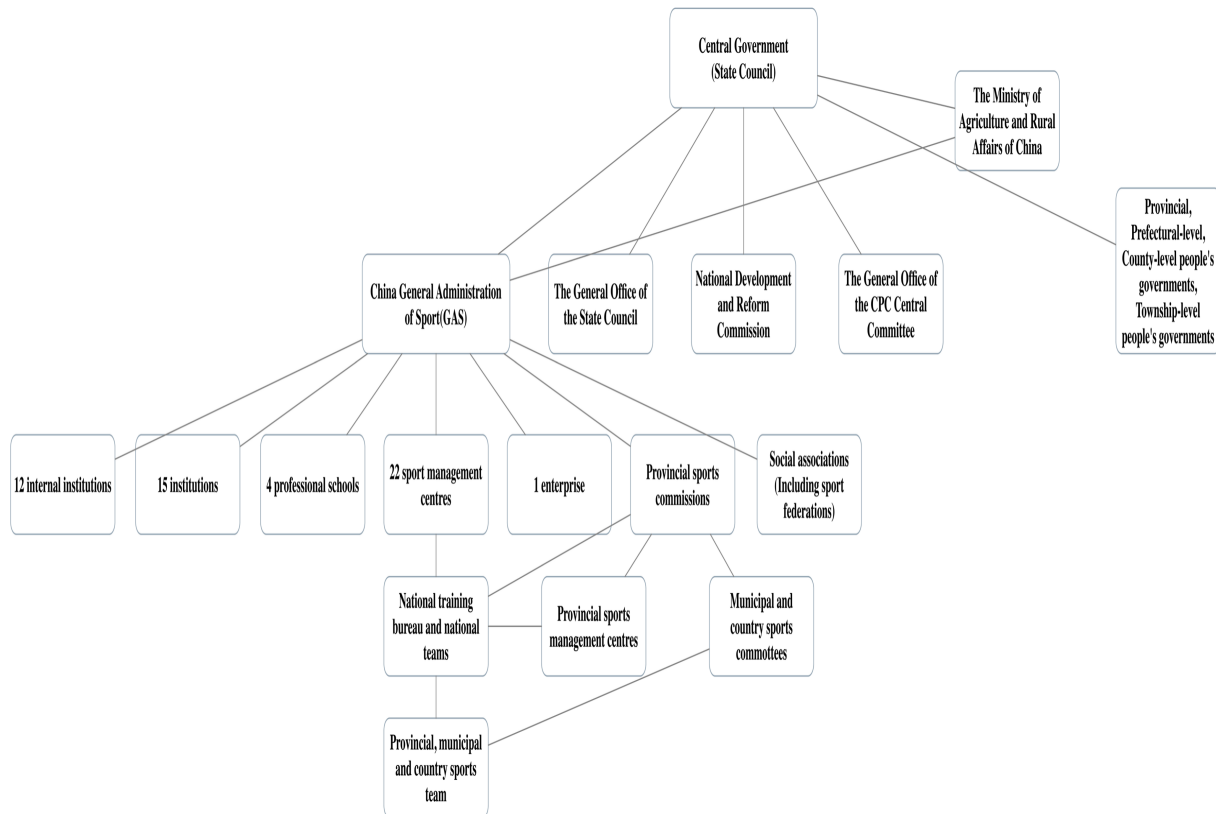


Figure 2 Sports system in China.

For the purpose of this study, a qualitative analysis using Whitemore and Knafel's five-step method of China's equestrian laws and regulations documents spanning the years 1978 to 2022 is utilised (Whitemore & Knafel, 2005b). Considering that policies are "a collection of processes that occur in sequence" that "reflect past, present, and future discussions," policy papers can be interpreted as "a specific point in the materialisation of the policy process intended to represent or enact power and change (Barlete, 2020)." This is because policies are a collection of processes that occur in sequence. The Chinese government has a long tradition of "documentary politics," which refers to the practice of organising national affairs through the use of policy documents (The Communist Party of China and Human Rights Protection -- A 100-Year Quest, n.d.). There is a significant amount of legal weight attached to policy documents. These documents include decisions, directives, opinions, rules, notices, and explanations that have been published by the National People's Congress, the Central Committee of the Communist Party of China (CPC), the State Council, and other state organisations (Notice of the State Education Commission on Issuing "Several Opinions on Strengthening and Improving Humanities and Social Sciences Research Work in Colleges and Universities," n.d.). There is a possibility that these policies may indicate the broad

policy goals of the central government or will establish governance methods (Han & Xu, 2019).

The policy on the equestrian industry is comprised of a collection of policies that have been implemented by the federal, provincial, and municipal governments in order to actively participate in the equestrian industry and the economic activities that are related with it. These laws intend to facilitate the growth of the equestrian industry, regulate the expansion of the equestrian market, effectively allocate resources, encourage the growth of the equestrian industry, and facilitate the transition of China's traditional horse industry into a modern equestrian sector as quickly as possible. Since equestrian sports are distinct from other types of equestrian competitions, it is impossible to separate them from the larger equestrian industry. The training of equestrian athletes is essential, and the market for horses is essential as well. The promotion of horse breeding becomes more difficult in the absence of a market, and the likelihood of producing horses of good quality and competitive ability decreases dramatically. As a result of the fact that these factors contain a multitude of components and touch on an infinite number of characteristics of decision-making, debate, and evolution in day-to-day sporting activities, their presence is pervasive (Catherine Palmer, n.d.).

To be more explicit, our methodology includes the analysis of qualitative documentary evidence. There were four key sources that contributed to the creation of our material: (1) Official websites and internal documents from the General Administration of Sports (GAS) of China, the Ministry of Agriculture and Rural Affairs of China, provincial sports policies, and Chinese sports federations. We also obtained pertinent content from the China Hownet, Web of Science, and EBSCO databases; (2) pertinent papers from Chinese administrative and commercial entities; (3) insights into the ramifications of sports industry policies, gleaned from Chinese business unit websites; and (4) semi-official resources (from media and organisations) such as Sina News and Equestrian Online. All of these sources were utilised in order to gather information. Each of these data sources is broken down in Table 3.

Table 3 The research sources detail.

Category	Resources
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Government	The Government of Xinjiang Uygur Autonomous Region of China	Related publications, including policies, sports, and history Souhu news; Sina news Equestrian Online (Equestrian Magazine - Equestrian Online, n.d.)
	The Government of Inner Mongolia Autonomous Region of China	
	Department of Agriculture and Animal Husbandry of Inner Mongolia Autonomous Region of China	
	The General Office of the CPC Central Committee and the General Office of the State Council	
	Hulunbuir Municipal Government	
	The Ministry of Agriculture and Rural Affairs of China,	
	General Administration of Sport	
	General Administration of Sport	
	Jinnai County People's Government	
	General Office of the State Council	
Sports association	China equestrian association	
Academic	China Hownet	
	Web of Science	
	EBSCO databases	
Semi-official media	News media	
	Organization	

Every policy document was subjected to a selection process that consisted of two stages. In the beginning, we employed search engines and databases to search for certain terms among the aforementioned resources. These terms included "马/horse," "马术运动/equestrian sports," and "马产业/horse industry." In addition to this search, a literature review was conducted on equestrianism and China's horse business in order to acquire additional policies that were pertinent to the investigation. Following that, we eliminated content that was not associated with equestrian sports and the policies of the horse industry. Examples of this include articles on horse science and equine medicine. All of the selected documents cover the years 1978 through 2022.

3.2. Data analysis

The culture of horses in China has a long history and is an essential cultural tradition that is deeply ingrained in many elements of Chinese society from the very beginning. One of the most fundamental aspects of Chinese culture has

always been horses, whether it is in the context of ancient royal rites or contemporary sporting activities. Not only do horses in China come to represent power and speed, but they also bring with them the admiration that people have for bravery and bravery. It is a part of it that horse sports have undergone thousands of years of growth and development, which has resulted in the formation of a culture that is unique to horse sports.

It is possible to trace the origins of China's horse racing tradition all the way back to the Warring States and Han Dynasties, which have been there for a very long time. At that time, horses were considered to be a symbol of national might because of their significant involvement on the battlefield, where they made a significant contribution. Over the course of history, horse racing evolved into a kind of entertainment that was commonly enjoyed by nobility and royal families. It also played a significant part in a number of celebrations and rituals.

Despite this, there are just a handful of international studies that have been conducted on the culture of Chinese horse racing, and the most of the pertinent information and literature is written in Chinese. This presents a number of difficulties for researchers who do not know Chinese, as it is possible that they will not be able to easily access and comprehend the resources. The study team was aware of this, and as a result, they were able to acquire sufficient data and meticulously analyse it thanks to their superb Chinese language skills and their in-depth awareness of the culture around Chinese sports.

The efforts of the research team were concentrated on a variety of historical sources as well as official and semi-official statistics in order to gain an understanding of the development of the culture around horse racing in China. In addition to this, they investigated the relevant policies of Chinese sports institutions and government departments, as well as looking into the function and relevance of horse sports in contemporary Chinese society.

3.2.1. Study 1

A wide range of data sources are used for this analysis, including information disclosure columns by the Chinese government, academic publications and other types of documents, and Internet news sources. Besides official print and Internet document sources, scholarly publications are also available, such as books, journal articles, and papers written by international and Chinese scholars, such as Xia Hongwu, Li Pinlin, and Qin Zunwen (Qin Zunwen, n.d.; Xia Hongwu & Li Pinlin,

2012). These data are supplemented by the output of semi-official mass media, such as Sohu News, daluma, and Baidu.com.

The four historical eras that have been established each have their own distinct characteristics and are symbolic of their time period. Besides providing information on the history of the development of horse racing in China, the document also discusses the views of various levels of government at different times. In addition, it allows an assessment of the relationship between motivation or participation and the regime type. By providing insights into state attitudes towards horse racing as an industry, this type of analysis will be able to further the discussion of the industry and provide a solid basis for future empirical research.

3.2.2. Study 2

An analysis of the chronological development of horse sport in China and China's consideration of whether or not to open up horse sport are included in the questions and theoretical framework of this study. The work of Ryan and Bernard contributed to the definition of the themes of the study through research questions and theoretical frameworks (defined periods). These themes include the political context of equestrian sports, financial support, the development of the sports industry, and the achievements of the equestrian market (Ryan & Bernard, 2003).

3.2.3. Study 3

Due to the nascent nature of the subject and the scarcity of data, no restrictions were imposed on the study design. Consequently, both longitudinal and cross-sectional studies were taken into account. Likewise, the study populations were not restricted based on age. The search was conducted by two researchers, JL and RS, who worked separately and simultaneously. They examined the titles and abstracts of 85 papers that were retrieved, evaluated the complete texts, and ultimately made the final decision. Out of this procedure, 10 articles satisfied the requirements for inclusion.

The inclusion criteria were established to only include original studies that assessed the involvement of real horses in Psychologically-Assisted Therapy for Humans. Interventions utilising horse simulators were excluded from the analysis. Excluded from consideration were reports, letters to the editor, and other

systematic and narrative review articles. In accordance with these requirements, a total of 10 items were ultimately incorporated.

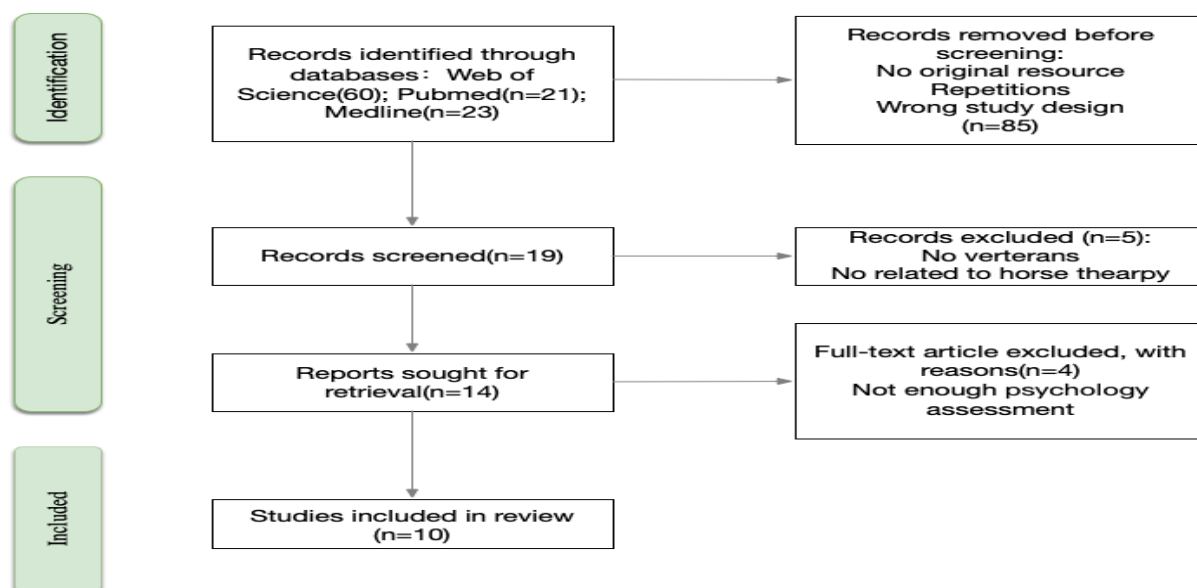


Figure 3 Methodology of selected articles.

Figure 3 provides a PRISMA flow diagram that visually represents the search process. The references derived from the chosen research were carefully examined in order to discover any supplementary relevant literature. The systematic review was last conducted on May 1, 2023. There were no limitations imposed on the use of language.

3.2.4. Study 4

Nvivo 20 was the programme that we used to perform analysis on all of the full-text texts that were written in Chinese. Open coding was the first step in our methodology, which was then followed by grouping and categorization. In each of the documents, we classified the primary verbs by using the word frequency tool in Nvivo. The results of this classification are shown in Figure 4, which is presented in Chinese. Coding at the beginning of the process assisted in separating the texts into three distinct epochs. After that, we sorted the data in chronological order and categorised it into three crucial phases of policy development pertaining to horses, based on the milestones that occurred along the timeline. After this, we moved on to the classification step, which involved the organisation of theme concepts that were founded on relevancy in order to acquire a thorough understanding of the intricacies of China's strategy during the various stages. In

order to develop an interpretive overview that encompassed the outcomes of our investigation, this material was synthesised and produced.

At the time, all of the documents were written in Chinese, and the team was responsible for translating them into English. The authenticity of these translations was established by the utilisation of English references derived from official government websites, press releases, and scholarly journals. It was decided that Chinese pinyin would be preferred above English translations for some terms in order to more effectively convey indigenous ideas.



Figure 4 Nvivo policies word frequency.

4. Scientific studies

4.1.A Historical Evolutionary Perspective on China's Open Horse Racing Problems and Choice Strategies.

Horse racing, a sport with a rich history spanning centuries, is closely tied to horse betting, a practice currently deemed illegal in China due to its classification as gambling. If horse racing were to be introduced in China, legal "horse racing" might become a part of the landscape. In the early days of New China's development, horse racing was initially banned, and the stance continued through various shifts from acquiescence to rejection during the period of reform and opening up. While some provinces in China have pioneered initiatives in horse racing since the 1990s, the central government remains cautious about such plans for various reasons. Presently, except for a few places where speed horse racing has been trialed without the attribute of "horse betting", there has been no official release of this plan by the central government.

DOCTORAL THESIS

Jiaxin Li



Study 1

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Article

A Historical Evolutionary Perspective on China's Open Horse Racing Problems and Choice Strategies

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Abstract: There have been horse races for many centuries. Horse racing is closely related to horse betting, which is illegal in China, and strictly speaking, horse betting is regarded as gambling. If horse racing opens up in China, “horse betting”, legally, will likely be included as a part of the process. Since the founding of the People’s Republic of China, China has banned horse racing at the beginning of its development. After China’s reforms and opening up, it was tacitly approved and then refused until now. Several provinces in China have made pioneering contributions in this area since the 1990s. Nevertheless, the Chinese authorities are cautious about such plans for various reasons. Until now, the central government has not liberalized the scheme except for a few local trials of speed horse racing, which do not have the property of “betting on the horse”. This paper explores its problems in terms of both historical evolution and realistic development. Then, it proposes practical options for horse racing development based on summarizing the expansion of existing policies to promote horse racing. These options are in response to the lack of development models not mentioned in the guidelines.

Keywords: horse racing; China; gambling; horse racing history



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1. Introduction

The modern equestrian originated in England, and its traditional meaning of riding has evolved into other forms of unification, including horse racing [1]. More than 2000 racecourses are located in 88 countries and regions worldwide, generating hundreds of billions of dollars annually [2]. Various races have been developed, such as flat, steeplechase, harness racing, and endurance racing [3]. As the economy grows and people’s living standards improve, the demand for fitness and recreation, as well as sports and athletics, increases. As a leisure and cultural activity with welfare characteristics, horse racing has become a powerful source of capital and a pillar industry in the modern economy. Horse racing is a cross-fertilization industry that combines primary, secondary, and tertiary sectors. In terms of its industrial components, explicit institutional characteristics, social class composition, and cultural and moral structures, this complex system possesses both universal and unique regional characteristics. In China, the State Council published the “National Fitness Plan 2016–2020” and the “Health China” 2030 Plan Outline in 2017, both of which mention the sports industry [1,4]. A developing horse racing industry, which has become a symbol of the social and cultural development of countries such as the United Kingdom, the United States of America, Australia, Ireland, and Japan, will provide new opportunities for the Chinese economy.

There is a long history of Chinese horse culture. As early as the Spring and Autumn Periods (770 BC–476 BC/403 BC [5]), it demonstrated the art of taming horses through equestrianism, polo [6], horse dancing, horse walking, horse racing, and other sports and entertainment activities. The following related books have been recorded: Sun Yang (Bo Le) “Bo Le Xiangma Jing”, Mawangdui silk book “Xiangma Jing—Da Guang Broken Chapter”, Han Dynasty Ma Yuan “Xiangma Bone Method”, Dunhuang Cave 302 “Nail Horse Palm Picture”.

However, China's horse racing activities remained confined to a small number of enthusiasts and only focused on speed without becoming profitable. Since the introduction of government documents at all levels regarding the development of horse racing betting, there have been many discussions in China about opening up horse racing, including concerns about gambling. Reviewing and analyzing the history of horse racing in China during its brief opening, the information collected came mainly from government documents and the news media. This paper presents a detailed analysis of the origin, allowed period, and strict prohibition of horse racing in China's trying test, to provide you with a better understanding of the problems that remain to be resolved. As government documents have been introduced about regulating horse racing at all levels, the discussion of opening up horse racing in China has continued. The discussion will focus on whether China has the conditions to open up horse racing at this stage and what problems Chinese society will face if horse racing is allowed to proceed.

2. Materials and Methods

In this study, one case study was used as a research design. China is a country with a long history of horse culture as a criterion—the history of horse racing in China. There have been few international studies conducted on Chinese horse racing culture, and the majority of information collected was in Chinese. Due to the Chinese language skills, existing knowledge of Chinese sports, and familiarity with documentary sources among the study group, sufficient data was gathered and carefully analyzed.

For analyzing horse racing-related sports policies and recent trends in China, we used a qualitative research strategy with data from official and semi-official documents [7]. The text of the policy-related horse racing category mainly includes the provisions of laws, administrative rules, and regulations. Data sources include Chinese government information disclosure columns, academic publications and other types of documents, and internet news sources. Policy texts are collected from public sector websites such as the State Council, the Central People's Government, provincial and municipal governments at all levels, the National Sports Administration, and the National Development and Reform Commission. Most websites contain a page called "Policies and Regulations" that lists numerous laws, administrative regulations, and statutes relevant to the respective public sector organizations.

The National People's Congress established a database of Chinese laws and regulations (<https://flk.npc.gov.cn/>, accessed on 10 June 2022) and searched the full text with the keyword "horse racing". We then compared the search results with the listings we obtained from government agency websites. To address information gaps, we used Google and Baidu to find data that complemented policy texts, including books, journal articles, and papers written by prominent international and Chinese scholars such as Hongwu Xia, Pinlin Li, and Zunwen Qin [8,9]. These data are supplemented by the output of semi-official mass media, such as Sohu News, Daluma, and Baidu.com. Through this approach, we identified 38 laws, administrative regulations, and statutes that we categorized as horse racing-related policies. Twelve of these articles are entry standards for speed horse racing established by the China Equestrian Association, which were and are carefully reviewed to be inconsistent with the content explored in this paper and therefore were not discussed.

This paper focuses on the use of government documents and the press as the primary sources of information on the topic of horse racing by searching for the term "horse racing" and selecting and discussing the topics using the method proposed by Ryan and Bernard, i.e., two topics: the period when horse racing was allowed and the period when horse racing was prohibited [10]. The analysis is categorized according to the chronological development of "horse racing" in China. Through a review of horse racing history, we analyze China's consideration of whether to open up horse racing as a sporting event. This approach is valuable because it clarifies the history of horse racing as a sport in China and details the views of various levels of government at different times. This will help to assess any relationship between motivation or participation and regime type. The

insights that this type of analysis can provide will further the discussion of state attitudes towards horse racing as an industry and will also provide a solid basis for expanding future empirical work.

3. Results

The history of horse racing in China was reviewed and summarized by sorting out the timeline of major events as shown in Figure 1. It also clearly identifies the big events at different times regarding the development of horse racing that affected the race.

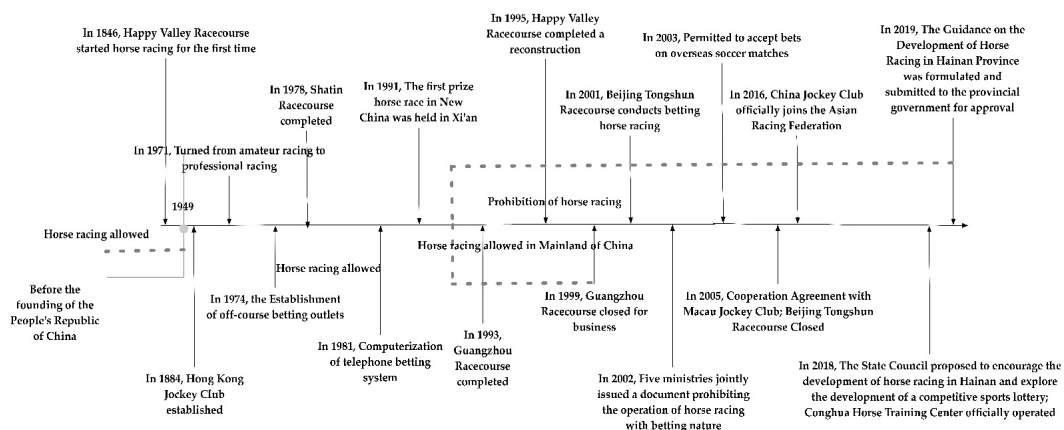


Figure 1. Timeline of the historical evolution of major horse racing events in China.

3.1. 1844–1949: Period When Horse Racing Was Allowed: Before the Founding of the People's Republic of China

After Hong Kong Island was ceded to the British colony by the Treaty of Nanking, horse racing took place at Happy Valley Racecourse in 1846. Since the Hong Kong Jockey Club was founded in 1884, the scale of horse racing in Hong Kong has grown significantly. Since Hong Kong International Races were first held in 1988, the standard of horse racing continued to improve, and owners continued to invest in high-powered horses to compete. The Hong Kong International Race, held annually in December, draws the top countries in flat racing, with the Hong Kong Cup offering the highest prize. Due to operational difficulties, Macau horse racing was abandoned in the 1980s in favor of flat racing and was only reintroduced in the early 1990s after funding had stabilized.

Throughout mainland China, since the Manchu period in 1850, twelve horse racing clubs have existed in Shanghai, Tianjin, Beijing, Hankow, Qingdao, Kaifeng, Tangshan, and also one other [11]. At that time, the two biggest horse racing clubs in Shanghai were Shanghai Happy Valley and Tianjin Jockey Club.

3.2. 1949–1985: The Ban Period after the Establishment of the People's Republic of China

Since the founding of the People's Republic of China, horse racing has been prohibited by the government due to the involvement of gambling. After the reform and opening up, horse racing was revived. However, they have been called off one after another due to alleged gambling. In the article, Qin Zunwen explains that “the betting amount, timeliness, and risk of horse racing betting are all controllable, and the horse racing industry not only drives the chain development of horse breeding, horse breeding, horse selling, harness, and equestrian but also thwarts the underground private lottery and outbound gambling [9]”. By the 1980s, China had more than 100 state-owned breeding farms [12]. After China began to promote agricultural mechanization, horses were quickly replaced, and the wartime demand for horses decreased, so financial subsidies for state-run horse farms were eliminated [13].

Private racecourses and horse racing clubs have emerged in China's major cities since 1985. There have been three waves of climax in the local trials of horse racing so far. The first wave climaxed in Guangdong (focusing on Guangzhou), the second wave followed in Beijing, and the third wave climaxed in Wuhan [14]. Upon their return to the Olympic Games following 32 years of absence, China came up with the strategy to put competitive sports at the forefront, explicitly aiming at winning gold to direct limited resources into "small, precise, and sharp" projects. As a result, resources were shifted from mass sports to "competitive" sports, of which horse-related sports are one of the significant projects [15].

3.3. 1986–1999: A Brief Period of Acquiescence for the Opening of Horse Racing

In February 1987, Xi'an held its first horse race with prizes, and in April 1991, the first horse racing club appeared in Shenzhen. The "Guess the First horse" flat horse race was held the following year. After being inspired by Shenzhen, Guangzhou began to imitate the Hong Kong model and has been very happy with the horse race betting market [3]. The Guangzhou Municipal Government proposed a horse racing event program in 1992 and the Guangzhou Sports Development Co. The then mayor of Guangzhou City was the honorary chairman of the board of directors of the Guangzhou Jockey Club, and almost all the influential leaders of Guangzhou City served on the board of directors.

The development of commercial horse racing in mainland China began in the early 1990s, influenced by Hong Kong. As a result of profit motives, some horse racing sports in mainland China have started to attempt to surpass the supervision boundaries.

In April 1991, the first horse racing club on the mainland since 1949 opened in Shenzhen, and the following year it held the "Guess the First horse" flat race. The first commercial horse racing boom wave emerged in Guangzhou following the initial horse lottery trials. In 1992, Cheng Chunbo, a farmer entrepreneur in Beijing, invested 80 million yuan in establishing the Beijing Country Racecourse and has been operating it since. With the tide of reform after 1992, Guangzhou tried horse racing and betting in the style of Hong Kong. The Guangzhou Race Course, completed in 1993, became a non-profit organization for sports and entertainment run by the Guangzhou Municipal Government.

The track holds two to three races per week, divided into day and night races, and has more than 100 off-track betting outlets. It once set a record of more than 20,000 people watching a race and wagering more than 12 million RMB daily during its peak operation [16]. With this horse racing feast, the central government demonstrates how it uses the space it has given in the context of reform and opening up and in light of enormous economic growth opportunities backed by the local government leadership and openly organized by the Guangzhou Jockey Club. Policy innovation followed this pattern in the early days of the market economy. The central government will not explicitly state its position with regards to some reforms that have benefits and risks and have been uncertain for some time. Instead, it will allow local governments to carry them out first, and if they cause more harm than good, it will ask the local governments to stop.

A gambling problem emerged due to this unclear method of making decisions. In the absence of any regulation of the market economy, horse race betting, operated by the Jockey Club, became popular in the 1990s. Illegal organizations began operating underground, betting on horses, which intensified the controversy over the experiment. The Guangzhou racecourse was ultimately closed in December 1999 following seven years of operation, with a total of 757 horse races held, and the first battle of the Guangdong horse lottery trial was overturned [16].

3.4. 2000–Now: Without Betting on Speed Horse Racing, Horse Racing Has Seen an Unrestricted Period of Prohibition in China

However, the increasingly open situation still provides opportunities for horse betting experimentation. Beijing's Tongzhou's so-called Asia's largest racetrack, Tongshun, was built by a Hong Kong company in August 2001. In the race, there is no horse betting competition; in order to avoid gambling, the racecourse deducted costs after a large

number of profits in the name of taxes, with the local government share, but this time it is the local government to take 70% and the racecourse only 30% [17]. During the first Western China National Equestrian Festival in 2001, the scandal of horse betting in Chengdu emerged [18]. The “Consultation Draft on the Strict Prohibition of Illegal Horse Betting Activities”, released in 2002, evolved into a joint document issued by five ministries prohibiting the operation of horse racing activities involving betting. After the document was released, the racecourse continued to conduct seasonal horse racing in 2003. Beijing Tongshun Racecourse suspended all commercial horse racing activities in 2005 due to the absence of a legal basis for betting. The racecourse had opened nearly four years prior, twice suspended, in conjunction with a severe crackdown on gambling [19].

An investment group from Hong Kong began constructing the Oriental Horse City in Wuhan at the end of 1999. Since then, horse racing has developed at the level of the Wuhan city government. As part of the “two sessions” the National People’s Congress (NPC) and the Chinese People’s Political Consultative Conference (CPPCC) in Beijing in March 2005, some Wuhan delegates proposed the creation of a trial “horse racing sports lottery” in Wuhan, proposing the combination of sports lottery with speed horse racing to form a “horse racing sports lottery” with Chinese characteristics, and the “China Racing Lottery Research Group” was subsequently established in Wuhan. The Ministry of Finance replied in the same year that the current conditions were not ripe for introducing a horse racing lottery in China but agreed to conduct a preliminary investigation [20].

The State General Administration of Sports and the Wuhan Municipal Government approved the establishment of the Wuhan Horse Racing Lottery Research Center in the Oriental Horse City in 2008, while the “Guess the First Horse” game was introduced at the China Open Speed Racing Championship trial at the Sixth Horse Racing Festival at the end of that same year. As soon as the horse racing information is read, the ticket can be exchanged for the horse number they were betting on. If the horse they are betting on wins the championship, it is possible to exchange the ticket for a “top scratch” ticket and redeem the prize if it is scratched [1]. These approaches were designed to reduce gambling risk and switch between betting and guessing. As a result of the successful planning of Wuhan, the development of horse racing with betting tests has once again been secured.

China’s first participation in the equestrian competition has become one of the hottest issues of the year following the success of the 2008 Summer Olympics in Beijing. Local governments are again attracting the public’s attention to the horse racing industry. Table 1 lists the policies related to the horse racing industry that have been released by Chinese governments at all levels since 2008. The State Council issued a “number of opinions on promoting the development of Hainan International Tourism Island construction” at the end of 2009. The State Council proposed “in Hainan, a test of some international tourism projects and sporting events, to explore the development of sports lottery and large international events instant lotteries”. The Chinese government introduced policies to support the horse racing industry. Document No. 12, released on 15 April 2018, the State Council of the Central Committee of the Communist Party of China’s “Guiding Opinions on Supporting Hainan’s Comprehensively Deepening Reform and Opening-up” clearly proposes to “support the construction of a national sports training southern base and provincial sports centers in Hainan, encourage the development of beach sports, water sports, horse racing, and other projects, and explore the development of competitive sports lottery and large international events instant lottery [21]”. On 29 September 2020, the National Horse Industry Development Plan (2020–2025), prepared jointly by the Ministry of Agriculture and Rural Development and the State General Administration of Sport, was adopted by the State Council, which affirms the rationality, legality, positivity, and health of horse racing at the national level. Following the promulgation of the Horse Industry Plan, various provinces, municipalities, and autonomous regions, including Guangdong, Hubei, Inner Mongolia, and Xinjiang, have promulgated plans to develop their local horse industries. The Wuhan Municipal Government released its Action Plan for the Development of Wuhan’s Horse

Industry and the Transformation and Upgrading of Speed Horse Racing in 2018, which outlined its plans for the future. The Central Committee of the Republican Party of China and the State Council issued “The Outline of the Development Plan for the Greater Bay Area of Guangdong, Hong Kong, and Macau”, whose most important goal is to “create an economic circle of the horse industry in Hong Kong and Guangzhou”, signed a framework cooperation agreement with the Hong Kong Jockey Club, and has plans to hold a regular horse race in 2025. The Hainan Province Department of Tourism and Culture formulated the “Guide on the Development of Horse Racing in Hainan Province” in May this year. On 27 November 2020, the China Equestrian Association Speed Racing Committee was officially formed in Guangzhou. On 17 January 2021, the committee held its first meeting in Sanya, Hainan, promulgating the “China Equestrian Association Speed Racing Race Management Measures” (for trial implementation) and “China Equestrian Association Speed Racing Race Points Measures” (for trial implementation). Although the new rules are more in line with the actual tournament, they still have several shortcomings, such as the lack of an organized structure and professional management staff that match the scale and importance of the event, the lack of financial security that matches the size of the event, and the lack of venue facilities that meet the tournament’s standards.

Table 1. Horse racing-related policies of China.

Policies	Time	Posting Department	Main Content
<i>Several Opinions on Promoting the Construction and Development of Hainan International Tourism Island</i>	2009	The General Office of the State Council	Explore the development of quiz sports lottery and significant international events instant lottery in Hainan, to try out some internationally accepted tourism and sports entertainment projects. In a number of policies issued by the Hainan government, the word “horse racing” was not mentioned.
<i>Guiding on Accelerating the Development of Modern Horse Industry</i>	2016	The government of Xinjiang Uygur Autonomous Region of China	By 2020, the region’s horse inventory will reach 1 million. The output value of the whole industry chain of the horse industry will reach more than RMB 20 billion, absorbing more than 50,000 work positions. Paying attention to building a modern horse breeding system, horse racing as traction, cultural tourism, product horse industry on a large scale, forage training as an industry, exchange, and trade.
<i>Several Opinions of the People’s Government of Inner Mongolia Autonomous Region on Promoting the Development of Modern Horse Industry</i>	2017	The Government of Inner Mongolia Autonomous Region of China	Pay attention to the protection and improvement of horse breeds and breeding, strengthen the security of local breed resources such as Mongolian horses; accelerate the breeding of pure horses; carry out a census of breed resources; and establish an international standard for horse breed registration and management system.

Table 1. Cont.

Policies	Time	Posting Department	Main Content
<i>Implementation Program of Key Projects for the Development of Modern Horse Industry</i>	2018	Department of Agriculture and Animal Husbandry of Inner Mongolia Autonomous Region of China	The autonomous region proposed modern horse industry development funds mainly to support the horse breed improvement project, horse main tourism boutique project, Mongolian horse spirit of promoting the project, horse industry personnel training project, and other four major projects: horse product processing to enhance the action, horse brand event creation action, horse industry science and technology innovation action, horse health and safety action, and another four action aspects of work.
<i>Guiding Opinions on Supporting Hainan's Comprehensively Deepening Reform and Opening-up</i>	2018	The General Office of the C.P.C. Central Committee and the General Office of the State Council	Encourage Hainan to develop horse racing sports, and support the exploration of competitive sports lotteries and significant international events instant lotteries.
<i>Implementation Plan for the Construction of an International Tourism Consumption Center in Hainan Province</i>	2018	National Development and Reform Commission	Encourage the development of horse racing.
<i>Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area</i>	2019	The General Office of the C.P.C. Central Committee and the General Office of the State Council	Promote the growth of equestrian sports and allied sectors, and promote collaboration between Hong Kong and the mainland in inspecting and quarantining horses, forage, feed, veterinary medications, biologic goods, and customs clearance.
<i>Hulunbuir City Modern Horse Industry Development Plan (2019–2025)</i>	2020	Hulunbuir Municipal Government	Establish two core bases for breeding horse breeds with Mongolian horses and Daxinganling horses as the core, respectively; build Hulunbeier City Vocational and Technical College into a well-known domestic equestrian talent output; build Hulunbeier City into an international zone for horse vaccination and immunization; build a horse-specific feed processing enterprise with an annual output of 10,000 tons; and build 14 high-level racecourses.
<i>National Horse Industry Development Plan (2020–2025)</i>	2020	The Ministry of Agriculture and Rural Affairs of China, General Administration of Sport(SGAS)	To make a macro plan for the development of China's horse industry, it is planned that by 2025, the framework for the development of China's modern horse industry will make a macro plan for the development of China's horse industry, it is planned that by 2025, the framework for the development of China's modern horse industry will include modernized breeding, efficient breeding, diagnosis, health care, disease prevention and control, training, performance measurement, competition and performance, fitness and leisure, cultural tourism, product processing, and an industrial service system.

Table 1. Cont.

Policies	Time	Posting Department	Main Content
<i>National Fitness Plan (2021–2025)</i>	2021	General Administration of Sport	As a national strategy to further implement the acceleration of the construction of an intense sports country, in-depth and extensive, to strengthen the mass base of sports and cultivate the sports market. Vigorously develop the sports industry to boost the economy and, more importantly, return sports to their original position of fitness, entertainment, and challenging oneself.
<i>Development Plan of Modern Horse Industry in Altai Region</i>	2021	Jimnai County People's Government	Accelerate the improvement of Altai horse selection and breeding; expand and strengthen the horse tourism industry; serialize, professionalize, and commercialize equestrian sports; take the lead in implementing riding quality education and professional talent training projects; and accelerate the development of horse products.
<i>Letter from the State Office [2021] No. 79</i>	2021	General Office of the State Council	Hong Kong, Macau, and Guangdong will host the 15th National Games in 2025.

Source: Authors, based on literature.

4. Discussion

China has made efforts to open up horse racing. However, hidden beneath the “horse racing” fever is the expectation of opening up the “horse racing lottery”. A consequence of the “horse racing” fever is taxation. Approximately 30% of the global economic impact of horse racing is attributed to the horse-related industry [22].

For the development of commercial horse racing, horse racing is an important economic engine. Most horse lottery bets and proceeds are used for lottery returns in international markets. In contrast, the remaining funds are used for tax payments, lottery issuer commissions, race operator rebates, and charitable expenditures. Globally, the return rate for horse racing lotteries is typically over 70%, with Japan and the United States of America in the range of 75% to 80%; Hong Kong and China have the highest return rate at 82.5% [23]. According to economic statistics from 2010, horse racing generates a spin-off of \$5.7 billion annually in Canada [24].

Most of Hong Kong's horse racing prize money is derived from gaming revenue. In 2020/21, the betting turnover for the Hong Kong horse racing season exceeded HK\$136 billion, the first time exceeding HK\$130 billion. This represents a 12.1% increase over the previous season and marks the eighth consecutive year that the total betting turnover has surpassed \$100 billion [25]. Behind the fame, a horse race cannot be separated from the vast investment in human, material, and financial resources, which means that the horse racing industry will create different jobs. In Newmarket, England, for example, there are 8500 jobs directly or indirectly related to the horse racing industry, contributing GBP 205 million of revenue to the British economy each year, and it can attract 340,000 spectators, forming a closed-loop industry chain of breeding, horse training, horse racing, and horse betting. The closed-loop industry chain of horse breeding, training, racing, and betting is formed [26]. There are approximately 52,732 position of employment and participation within horse racing industry in New Zealand. There is a value added contribution of NSD 1635 million to the New Zealand economy generated by the racing industry. In 2008/09, this amount represented 0.90% of New Zealand's real GDP [27].

Several derivative activities, including horse racing betting, are also important sources of revenue for the sport. Furthermore, national horse racing clubs have developed tourism, accommodation, and catering activities based on horse racing. Although horse racing in

China has not been legalized at present, from the perspective of the current scale of China's horse industry, the Chinese market is worth looking forward to [28].

In China at the end of the last century, the Guangzhou racecourse was run on a small scale with the acquiescence of the state, not daring to open up to total input, but still created a record of a race with more than 20,000 people watching. The highest day of investment amounted to more than RMB 12 million. During the seven years of operation, Guangzhou Racecourse has not only been able to maintain its economic balance but has also covered all the expenses for two sessions of the National Speed Horse Race, undertaken all the costs for the China Equestrian Training Base, sponsored many events such as the World Weightlifting Championships, the National Seventh Games and the Ethnic Minority Games, and donated more than RMB 300 million to the China Charity Federation for provincial and municipal disaster relief, education, and poverty alleviation. The donations covered culture, education, disability, welfare, security, disaster relief, construction, etc. [12,29]. The club has created more than 4700 jobs [16]. Additionally, the racecourse has become an important tourist attraction in Guangzhou. Throughout the past seven years, the Guangzhou Jockey Club has contributed significantly to the social and economic development and public welfare of Guangdong Province, creating employment and spurring the development of many industries, including tourism and transportation. The Guangzhou Jockey Club played a significant role in creating an economy at that time. Following the ban on horse racing in 2001, the investigation following the racecourse closure revealed serious problems involving misappropriation of public funds and bribery, with the Guangzhou Jockey Club losing 600 million RMB in six years [12]. It is difficult to regulate such a large market without laws and regulations, which is one of the disadvantages.

Reasons for not opening horse racing:

Excessive involvement:

From the end of the Qing Dynasty until the establishment of the People's Republic of China, Wuhan has been a center of horse racing culture. Due to China's large population and deep-rooted horse racing culture, horse racing is likely to cause a collective addiction to horse betting. Before 1949, there were three large horse-racing stables in Wuhan, "Western Business", "Chinese Business", and "World Wide", and Wuhan was known as the gambling capital in the old days [30]. Wuhan horse racing experienced a boom during the 1930s when the old government supported horse betting. This occurred due to the size of the racecourse, a large number of spectators, the wealthy merchants who operated the racecourse, the racecourse sharing their profits with the government, and public support. This eventually led to horse racing becoming a popular form of gambling. As a result, many people gambled on horses and lost their money. Nearly 10,000 taels of silver were deposited daily in the government's bank accounts. Following the founding of the People's Republic of China, horse racing tracks were abandoned entirely. Until now, there were more than 30 horse-related place names in Wuhan. During the Japanese occupation of Wuhan in 1938, the racecourse was forced to close. After 1949, the Chinese government opposed current-cost gambling, and since then, horse betting has been illegal in mainland China for decades.

According to a study by the Australian Gambling Research Centre (AGRC), The AGRC analyzed data from more than 14,000 people questioned as part of the 2015 Household, Income, and Labour Dynamics in Australia Survey and found that 975,000 people regularly bet on horses or dog races [31]. Andrew Armstrong, a researcher at the AGRC, said, "Overall, among the average gambler, the incidence of the problem is between 16% and 17% [32]". Nowadays, watching horse racing in Hong Kong has become an art form deeply rooted in people's hearts. As the betting cost is not enormous, people can buy it, and the horse lottery, like other sports lotteries, has long been integrated into the lives of the general public. This causes many people to become addicted to it, and the benefits created by this can make a seemingly fair game with a blatant gambling cheat-like existence, appearing to control the scene [33]. Assuming that mainland China is open to betting on horse racing, with China's population of 1.402 billion, there will be more people at home betting on horse

racing activities. Due to the webcast in recent years, netizen bloggers and the celebrity effect can pull down the age of gambling participants and make it more difficult to control.

Location of the racecourse:

Only a limited number of mainland sites have been cleared of epidemic diseases. Only Guangzhou's Conghua Racetrack and the soon-to-be-built Tonglu Racecourse can host this significant international horse racing event. One of these, the Conghua Racecourse in Guangzhou, was leased to the Hong Kong Jockey Club for long-term use. More and more colts are heading to Hong Kong after preparing at the Conghua Racecourse since the 2020/2021 Hong Kong racing season. The Conghua Racecourse is the only thoroughbred training center and horse farm on the mainland that meets international standards. The government and the Jockey Club plan to utilize the location of the Conghua Racecourse to promote the development of a world-class horse industry in the Greater Bay Area. The Conghua Racecourse will hold regular horse racing events from 2025 onwards. However, it is unknown whether a horse racing lottery will be held in the future. In the end, will the two significant racecourses on the mainland only provide training grounds for international horse racing events, or will they only be able to hold non-competitive events rather than "horse racing with betting" events? Second, most of the racecourses built in mainland China are in first or second-tier cities with easy access to transportation and excellent urban infrastructure, which means that these cities that have the resources to develop a variety of industries will have to join the gambling horse racing industry, which will further exacerbate the unequal development of the province.

Horse breeding industry:

Today's horse racing is built upon excellent horse breeds, and different horse breeds are suitable for different types of races. Furthermore, the presence in the breeding industry is mainly related to equine events, all of which have a sporting aspect. The 2008 Beijing Olympics did not provide the anticipated springboard for the growth of equestrian sports in China, and the absence of horse races will undoubtedly affect the development of the sport. A horse racing competition with frequent events provides horses with a wide platform to compete. Only horses with proven track records recognized by the International Thoroughbred Registration Committee are eligible to breed thoroughbred offspring in horse racing. At the international level, competing horses must possess a pedigree book containing accurate and detailed information about their sires and dams. Before the promotion of equestrian sports in China, pedigree certificates were not available for domestic horses, which harmed the quality of breeding as well as the price of horses. Horse breeding is the foundation of the entire horse racing industry. At this stage, the breeding of horses in mainland China is far below international standards. If horse racing events are to be held, the number of horses participating in the competition must be guaranteed. The training, welfare, and medical care of horses and other related industries must be involved. The foundation of the entire sector must be built to ensure that a comprehensive "industrial upgrade" will be carried out from top to bottom, starting from the relevant legal policies. Horse racing will be developed based on being able to guarantee fairness, equity, and transparency. There is currently only the National Horse Industry Development Plan (2020–2025) [34]. In a national policy-oriented horse industry, there are no relevant rules and legal norms to support, and the overall completion of the plan must be achieved by 2025. The specific results can only be evaluated after implementation. In recent years, it has been discussed that the open Wuhan racing needs a period of observation. It is not recommended to open the next development step until the relevant industrial infrastructure has been completed.

Laws and regulations:

Various countries and regions operate modern horse racing differently because of their histories, cultures, sociopolitical conditions, and economic systems. There are similarities and yet specific and substantial differences in how modern horse racing is conducted and operated. This difference arises as a result of the operational management model used. For example, the taxation of horse racing and horse lotteries in the United States of America is

governed by state-specific joint-venture structures, but they can be sold across state lines. In addition, every racecourse has a committee of racing deacons responsible for officiating. In most places, the horse racing deacon board is formed by the government of public officials to fill the post, and the judges are state government employees who are not involved in the racetrack to ensure openness, fairness, and equity. The betting rebate rate for commercial horse racing in the United States of America is high, while the tax rate is low. The ability of the U.S. horse racing industry to be a global leader is linked to government support [29]. Despite this, they all share a common foundation: laws and regulations. Although horse racing is a betting sport, to prevent problems before they occur, the government-led horse racing industry must first develop other specific guidelines, rules, and regulations to govern how horse racing is judged. The results disclose the amounts of bets and payouts for each race, ensure the accuracy and correctness of odds calculations and payouts and regularly announce money flow into the industry.

Laws:

Due to the absence of relevant laws and regulations in mainland China, it is not likely to be able to obtain a gaming operation license like the Hong Kong Jockey Club. China's government only conducts sporting and competitive activities related to equestrian sports. There are currently non-gaming horse racing sports in Wuhan and other places in the form of club activities.

Currently, speed racing events are held at the National Games and the Civil Games, in addition to the permanent China Open Speed Racing Championship [35]. Nevertheless, based on the history of the development of equestrian sports in various countries, it is inevitable that equestrianism must be combined with horse racing to succeed. The "Outline" proposes the promotion of the moderate and diversified development of Macau's economy along with establishing a base for exchange and cooperation with Chinese culture as the mainstream and the coexistence of multiple cultures, which is likely to break down the barriers between the mainland and Macau [36]. The issue of horse lotteries first came to light following the reform and opening up of China's lottery industry and its sports betting lotteries. The "China Welfare Lottery" was established in the late 1980s and early 1990s. To unify the management, numbering, printing, and issuance of sports lottery tickets worldwide, the National Sports Commission established the Sports Lottery Management Center in early 1994. These activities became known as the "China Sports Lottery". After introducing the Chinese soccer lottery in October 2001, the lottery gradually became more competitive. A basketball betting lottery was introduced in 2005 [37]. Across all countries where horse racing is held, betting lotteries are an essential service sector. They represent an important link in the horse racing industry chain and contribute significantly to its success. Although the State Council adopted the Lottery Administration Regulations at its 58th executive meeting in 2009 to provide guidelines and principles for lottery sale organizations, market regulation, lottery risk control, the use and reallocation of lottery winnings, etc., and the Rules for Implementation of the Lottery Administration Regulations were promulgated in February 2012 to provide specific regulations on the use of lottery public welfare funds. Even though the State Council adopted the "Regulations on Lottery Administration" at its 58th executive meeting in 2009, which provide directional and moral guidance and regulation on lottery sales institutions, lottery market regulation, lottery risk control, and lottery fund use and reallocation, and the "Rules for the Implementation of the Regulations on Lottery Administration" were officially approved and promulgated in February 2012, providing specific regulations on the use and management of lottery public welfare funds, there is still a considerable gap between the regulation of lottery distribution and the prevention of related risks.

Regulations:

In terms of China's currently existing rules regarding the horse racing industry, in 2021, two management measures were drawn up by the China Equestrian Association: the "China Horse Racing Association Speed Horse Racing Management Measures" (for trial implementation) and the "China Horse Racing Association Speed Horse Racing Points

Measures" (for trial implementation), they are not currently enforced, due to the public safety accident that occurred on 22 May 2021, in the Baiyin Yellow River Stone Forest 100 km off-road race in Gansu Province, resulting in multiple casualties, speed horse racing and other related races are currently at a standstill [38]. For how horse racing is conducted, including the creation of rules, a team of judges, a team of jockeys, and a team of trainers, until the China Equestrian Association introduced its management methods, speed horse racing in China had different regulations. There was no unified scoring system, no national standard of race management, and no third-party race management monitoring body. When capital poured into the horse racing industry, the first thing that came to mind was simply to construct horse farms.

Ethical values:

Regarding the horse racing lottery distribution, it is difficult to adjust to traditional values and break through the last line of policy. As a matter of tradition, Chinese culture has viewed horse racing as solely a "gambling" activity, and there has been resistance to betting on horse racing in terms of public opinion. Is the horse lottery a combination of horse racing and a lottery? First, there are references to gambling in Chinese texts and laws, as well as a definition of gambling in the book "Dictionary" of Chinese texts: Gambling is a form of improper entertainment. Various forms of card fighting, throwing the general, and other forms of wagering with property exist.

Under section 303 of the Criminal Law of the People's Republic of China, gambling is defined as the following: "Whoever engages in gambling for profit and gathers a crowd or gambles for business shall be sentenced to a term of imprisonment not exceeding three years, detention, or control, together with a fine [39]." Horse racing is included in the definition of gambling, as is the purchase of lottery tickets. This leaves the public with the impression that the horse racing lottery is the same as gambling, making it extremely difficult for the public to accept the opening of horse racing. It is not gambling as long as the state conducts the lottery to raise public funds for the benefit of welfare, sports, and other social and public causes, whether it is a football-based or a horse race-based lottery. But horse racing attempts have never been covered by the legal framework, despite being controlled by market forces and explored through initiatives contributing to economic and social development.

On the other hand, the bottom line of "gambling" needs to be considered. As a result of local experimentation, sensitivity is reduced, but the authorities cannot effectively supervise the process. Therefore, the experiment of this horse lottery can only be stopped once the uncontrollable "gambling" takes place.

5. Conclusions

We have made the following four recommendations to address the problems that exist.

5.1. The Shaping of Horse Culture

The modern horse racing industry combines sport, entertainment, and leisure. Founded in 1905, Britain is the home of modern horse racing, and its development projects are based on its own culture. The horse has played an essential role in the traditional British national culture as a symbol of wisdom, bravery, agility, loyalty, manageability, nobility, chivalry, and gentlemanly manners. As a significant horse breeding country, China has a variety of national cultures, and its horse culture is likely to be very vibrant. In recent years, the development of special tourism based on the culture of ethnic minorities has vastly increased. It is not uncommon for tourists to visit not only tourist villages but also minority villages to learn more about minority cultures; Tibetans and Mongolians make up a large proportion of this. If ethnic minorities can promote their own horse culture, it should lead to the development of China's horse culture. The conditions for opening horse racing are not yet available, so it is better to maintain more localized horse races, which have existed for many years and can provide economic benefits to the local area.

5.2. Lottery Law

Most countries in which the gaming industry operates have already developed and perfected their national legislation.

Hong Kong and Macao have special lottery laws and gaming regulations with very detailed and strict regulations on all aspects of lottery issuance, management, and the use of funds raised, but for the domestic lottery industry. However, the State Council has enacted the Notice of the State Council on Further Regulating Lottery Management, the Financial Management Measures for Lottery Issuance and Sales Organizations, the Interim Provisions for Lottery Issuance and Sales Management, and the “China Welfare Lottery Management Measures” and other regulations. Nevertheless, this does not reach the level of the law, as there are no details or regulations, and there are difficulties in ensuring specific implementation and operation. Considering the large lottery revenues generated by the horse industry, incomplete laws will certainly lead to problems at the Guangzhou racetrack and, therefore, must be accompanied by legislation that recognizes the legality of modern horse racing and has comprehensive regulatory measures in place.

At the same time, legislation must be enacted to determine a suitable model for the development of horse racing in China and to develop horse racing in a standardized, tripartite regulatory or government-regulated and highly participatory manner, which must also take into account the conditions of China’s national conditions and the localization of betting on horse racing to form a horse racing model with Chinese characteristics, to promote the healthy growth and ongoing development of China’s modern horse racing industry.

5.3. Targeted Horse Racing

The betting industry is undergoing rapid expansion, which will quickly stimulate the speculative (gambling) mindsets of the public, especially among the youth, and may have adverse social consequences. The second point is that horse racing requires venue facilities, race management, betting operation systems, and technical conditions. The existing racecourses in China, except for the Guangzhou racecourse, have better hardware and software conditions. In contrast, the other regions do not have these conditions and are not approved by the State Council, and the right to host the event lies with the local government, businesses, or even individuals.

A pilot program should first be implemented to prevent blind and hasty horse racing. The Hong Kong Jockey Club and relevant Jockey Club experts can be invited to conduct an assessment on a case-by-case basis based on international practice and the applicable requirements of the racecourse. Where the primary conditions are not available, betting should be prohibited and explicitly ordered to close down and be rectified; if the basic characteristics are functional, it should be functionally distinguished where only equestrian competition occurs. In addition, when selecting horse racing pilot areas, the racecourse conditions, the size of the city, the market conditions, and organizational capacity should be considered, in addition to the country’s overall needs.

5.4. Tri-Party Supervision

As a first step, the state should be responsible for approving the horse racing pilot. Second, all approved racecourses should be owned and operated by the state, not local governments or enterprises. A monopoly for the condition in the horse racing industry will ensure the credibility of the community and overall public interest in the use of funds raised, will ensure that the purpose of horse racing is to serve the community and to develop general welfare, and will prevent the market from becoming out of control due to local interests. Accordingly, the approval, ownership, and operation of the horse racing pilot should be under the “vertical management” of the state. This is evidenced by the success of the Hong Kong Jockey Club. Among the statements in the Outline of the Guangdong–Hong Kong–Macao Greater Bay Area Plan is the information to “promote the moderate and diversified economic development of Macau,” which implies that Macau may be a place to buffer the cultural conflict of “horse racing distribution” on the mainland and to gain policy

flexibility. Specifically, in the face of restrictions based on traditional culture and policy, the mainland could try to issue horse racing lotteries in the Guangdong–Hong Kong–Macao Greater Bay Area to mainland residents traveling to Macau. Particularly with the opening of the Hong Kong–Zhuhai–Macao Bridge, the scale and frequency of travel to Macau by mainland residents will increase significantly. By utilizing Macau’s particular policy and cultural space, we can gradually accumulate experience and change perceptions and public opinion on the mainland, paving the way for future liberalization of horse lottery issuance and risk prevention.

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4.2. The Development of Equestrian Policies in China between 2015 and 2020.

The horse industry holds significant historical importance in China and is currently undergoing modern transformations. This paper aims to enhance the economic development of the horse industry by analysing relevant policies during the fastest-growing period in China's modern horse industry. The goal is to establish a comprehensive and uniquely Chinese horse industry chain, supporting its economic growth. Additionally, there is a call for supporting equestrian education in China to foster distinctive Chinese characteristics in the field, with the expectation that this approach will contribute to the improvement of horse breeding and welfare in the future.

DOCTORAL THESIS

Jiaxin Li



animals

Study 2

Li, J., López Adán, E., & de la Rubia Ríaza, A. (2022). The Development of Equestrian Policies in China between 2015 and 2020. *Animals*, 12(15), 1913. <https://doi.org/10.3390/ani12151913>



Article

The Development of Equestrian Policies in China between 2015 and 2020

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Simple Summary: One of the most important industries in China's history has been the horse industry, and the modern horse industry is still in the process of being transformed. The purpose of this paper is to introduce relevant policies through an analysis of information related to the horse industry in order to promote the economic development of the horse industry and gradually create a chain for the horse industry by selecting for this analysis the fastest-growing period in China's modern horse industry. This can support the economic development of the horse industry and gradually create an integrated horse industry with Chinese characteristics. Equestrian education in China should be supported so that it gradually develops Chinese characteristics, and, thus, horse breeding and welfare will also improve in the future.

Abstract: China competed in equestrian sports for the first time at the 2008 Beijing Olympics. China's modern equine business has developed significantly over the past decade, and the lessons from the expansion between 2015 and 2020 are important considerations as China implements further legislation to aid in the development of its modern equestrian sports. Equestrian sports can propel the Chinese horse industry forward, and the horse industry is a unique business in that it integrates one, two, and three industries, with much growth potential. This paper assesses the development of equestrianism in China from four perspectives: the general sports economic environment; the development of equestrian activities; the economic industries driven by equestrian activities; and relevant equestrian policies. Equestrian sports within China are currently facing problems, and recommendations are given. This paper is a single case study. The research utilized a qualitative approach, collecting data from official and semi-official documents. Through understanding the data collated and its analysis, equestrian sports can improve the speed and quality of their development under the influence of better-informed policy-making and a relevant economic model. It is expected that the wider related horse industry in China will also undergo more significant development.

Keywords: horse activities; equestrian; China; sport policies



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1. Introduction

Local horse activities in China have a long history. China's domestic horses were involved in establishing the foundations for commerce, communication, and state infrastructure along the old Silk Road, while also driving significant military, social, and political developments in the country [1]. As far back as the Yuan Dynasty (1271), horse activities were practiced in Beijing; after the Mongolian capital was established there, people brought their favorite horse activities to Beijing, which gradually became popular [2].

Traditional Chinese horse activities in the Ming Dynasty (1368) were still practiced, especially in spring. With the demise of the Ming Dynasty, the Manchus controlled Beijing and the Qing Dynasty (1636) arrived. During the Qianlong period (1736–1796), many race courses appeared in Beijing. Traditional Chinese horse racing events were held during various folk festivals; all levels of society, from nobles from the royal family down to the

public, were enthusiastic about this activity [3]. The activity was promoted by the royal family and gradually spread to the people; this lasted until the early Republic of China (1912–1949) [4]. Around the end of the Qing Dynasty's Xuan Tong era (1909–1911), an event called "horse racing" emerged in Beijing, which was not traditional Chinese horse racing, but so-called "Western-style horse racing" [5]. This "horse racing" activity was practiced intermittently until the late Republic of China. After the founding of the People's Republic of China, equestrian sports gained attention again, and in the late 1950s, the state decided to launch equestrian sports nationwide. In 1979, the China Equestrian Association was established, and in 1982 it joined the International Equestrian Federation, which since 1983 has presided over national equestrian competitions and three Olympic disciplines (dressage, show jumping, and three-day event) as well as folk equestrian sports.

Since the 29th Modern Summer Olympic Games were held in Beijing in 2008, equestrian sports have been brought to the attention of the Chinese public. A notable event was the relocation of the equestrian competition venue to Hong Kong. The reason for this was the lack of an FEI-certified disease-free zone, which meant that mainland China was in an epidemic zone for equine infectious diseases [6]. Since there are no qualified disease-free zones, high-level riders from abroad can only buy one-way tickets for their horses to fly to mainland China. In many countries, the health authorities do not consider it safe to let those horses return home. Because of this, many riders choose to not compete in mainland China. This was one of the problems that made it difficult to develop equestrian sports. After many efforts to fight for and continuously improve the work, Conghua City was established as the first certified temporary certificated epidemic-free zone for international equestrian competitions in mainland China for the Asian Games 2010. This was the prelude to equestrian competition in China [7].

Policies promoting national fitness and the growth of the sports sector have been announced in recent years, particularly during the 13th Five-Year Plan era. Table 1 summarizes these policies. To further accelerate the growth of the sports industry, in 2014, the State Council released the Opinions of the State Council on Accelerating the Development of the Sports Industry and Promoting Sports Consumption; since the sports industry has gained the attention of the whole society, equestrianism also received policy support. Along with the rapid growth of equestrian clubs, there has been a successive introduction of policies related to the sports industry and the increase in demand for equestrian sports. In 2016, China announced the National Fitness Plan (2016–2020), which clearly states that there are many sports with consumer-led characteristics, including equestrian sports; the 13th Five-Year Plan for Sports Development and the Health China 2030 plan also state this. The State Council released the Notice on Issuing the Outline for the Construction of a Strong Sports Country in 2019, stating that sports would become a significant business by 2035. In 2035, the sports sector will become the foundation of the national economy. China continued to issue policies in 2021, such as the Implementation Plan for the National Fitness Facilities Project during the 14th Five-Year Plan and the National Fitness Plan (2021–2025) (after this, referred to as the Plan) to promote the development of the sports industry and achieve the goal of comprehensive fitness. Notably, in this year's plan, but also in the 14th Five-Year period of national fitness, the total size of the national sports sector will reach RMB 5 trillion by 2025 [8]. This shows China's determination to develop its sports industry, and with implementation of policies, sports will develop, including this niche sport. Various companies are entering the equestrian market, which means that when the market becomes more competitive, prices will go down, resulting in more people participating.

Table 1. Overview of China’s equestrian policies [8].

Equestrian Industry Policies of China			
Policy	Date	Posting Department	Keywords
Several Opinions of the State Council on Accelerating the Development of Sports Industry and Promoting Sports Consumption	2 October 2014	State Council	Fitness and leisure, particular sports, equestrian
Several Opinions of the General Administration of Sports on Promoting the Reform of the Approval System of Sports Events	24 December 2014	State General Administration of Sports	Decentralization, cancellation of approval, social forces
Notice on Issues Relating to the Cancellation and Suspension of Several Administrative Fees	29 September 2015	Ministry of Finance, National Development and Reform Commission jointly	Decentralization, cancellation of approval, social forces, equestrian competition, horse quarantine
Notice of the Department of Science and Education of the General Administration of Sports on Matters Relating to the Exemption of Outstanding Athletes from Entering Higher Education Institutions in 2016	3 November 2015	Department of Science and Education, State General Administration of Sports	Exemption from examination, equestrian athletes, higher education institutions
Notice of the State Council on the Issuance of the National Fitness Plan (2016–2020)	15 June 2016	General Office of the State Council	Comprehensive fitness, fashion and leisure, equestrian, consumer-led features, network, amateur sports
The Guidance of the General Office of the State Council on Accelerating the Development of the Fitness and Leisure Industry	25 October 2016	General Office of the State Council	Featured sports, equestrian, youth, insurance, land policy, new forms of sports media, national economy

In the 1990s, China wanted to speed up the development of equine sports while exploring the economy after the reform and opening up. Most people set their sights on horse racing, which could bring more benefits, but all such projects were called off in 1999, and since then, horse racing venues that were built have been abandoned. Athletic equestrian sports then began to be developed. Following the 2008 Olympic Games, China saw a surge in equestrian fever. Since the State Council’s Opinions on Accelerating the Development of the Sports Sector and Promoting Sports Consumption (No. 46) were released in late 2014, the sports industry garnered widespread public attention, while equestrianism also gained official backing. When document No. 46 [9] was released in late 2014, the sports business was formally recognized as a distinct category in China’s economy. The report clearly states that, by 2025, a reasonably laid out, functional, and complete sports industry system will be established, the role of other industries to drive it will be significantly increased, and the total size of the sports industry will be more than RMB 5 trillion [8]. This will increase the number of equestrian clubs and participants in China. Numerous equestrian clubs have popped up, and the presence of Chinese participants at major international horse shows and auctions has increased.

In 2018, the State Council’s General Office issued the Guidelines on Accelerating the Development of Sports Competition and Performance Industry, which states that “developing the sports competition and performance industry is critical for tapping and unleashing consumption potential, safeguarding and improving people’s livelihoods, and reviving economic growth.” This strategy paved the way for the growth of equestrian sports. In 2020, China’s Ministry of Agriculture and Rural Affairs and the State General Administration of Sports released the National Equine Industry Development Plan (2020–2025), which for the first time combines horses and sports in order to plan the equine

industry's future development. This plan's primary objective is to encourage equine breeding via athletic events, especially equestrian events, cultural tourism, and other means. By 2025, the framework and system for developing China's modern equine industry should be established. The industry's economic and social benefits will be significantly enhanced, with a relatively complete system of modern breeding and horse welfare that will comprise efficient breeding, treatment, and health care; disease prevention and control; training, performance measurement, competition, and performance; fitness and leisure; cultural tourism; and manufacturing of products.

Immediately after that, several municipalities in China implemented various measures to support and promote equestrian sports. Still, there were no official statistics to track the growth of equestrianism in China until 2016, by which time it had gradually gained public awareness. The purpose of this paper is to compile and analyze the development factors of equestrian sports in China based on the actual data, focusing on the period 2015 to 2020. It also points out the existing problems and offers suggestions for better development of the equestrian industry in China in the future.

2. Methods and Data Analysis

In this research, the single case study was predicated on looking for congruence and corroboration as well as assessing the importance of published sport-related policies and documentation [10]. We utilized a qualitative approach, collecting data from official and semi-official documents. A broad range of keywords was used in our search in order to include a wide variety of sectors (such as the equestrian industry and specialized and equestrian events; in Chinese, these are: “马术运动,” “马匹,” “马术,” “马”) from 2015 to 2020. Because horse racing is prohibited in China, it was not discussed. The data for this study came from three sources. The sources ranged from official annual reports of relevant sports authorities and the local government to academic publications and newspapers, as well as internet sources, including the State Council, the State General Administration of Sports, the Ministry of Finance and National Development and Reform Commission jointly, the Department of Science and Education, the State General Administration of Sports, the General Office of the State Council, and the National Bureau of Statistics' *China Statistical Yearbook*, which includes information on the size of the sports industry from 2015 to 2019 and the number of horses imported to China between 2016 and 2020. Data were also collected from semi-official mass media resources, newspapers, two popular Chinese equestrian magazines in China (*Horsemanship* and *World Equestrian*), the China Physical Education Practitioner Training Network, Equestrian online, Guangming Daily news, daluma.com, JMedia, Xinhua, and government publications (National Sports Strategy). Finally, data were also collected from other yearbooks published by various provincial and municipal governments.

This analysis excludes Taiwan, Hong Kong, and Macau. Additionally, this paper refers to all provinces, municipalities, and autonomous areas in China as provinces. The years shown in the charts differ depending on the data collected. This study makes no interpretation of the facts presented. Through a graphical analysis, data from the sources above were utilized to accomplish the study goals.

Data Analysis

Thematic analysis was used to process the collected qualitative data [11]. The work of Ryan and Bernard assisted in defining the themes of the study through research questions and theoretical frameworks (defined periods), including the equestrian political context, financial support, sports industry development, and equestrian market achievements [12]. Our team verified all parts of the themes describing equestrian development in China.

3. Results

3.1. Chinese Economy during 2015–2019

Equestrian sports are not low-cost. With the increase in income for Chinese people, there has been a rise in the number of equestrian participants. According to the data from 2015 to 2019 (Table 2), there was a considerable increase. In the first half of 2021, GDP was RMB 5,321,167 billion, up 12.7% from the first half of the previous year, or an average of 5.3% for the last two years. Disposable income for ordinary Chinese citizens increased by 12.0% in real terms, with a two-year average real annual rate of 5.2% [13]. With the fast growth of China’s economy, the amount of material goods, constant socioeconomic development, and expanded spare time all contribute to a rise in people’s need for leisure and amusement. By 2020, there will be 3.713 million sporting venues nationally, covering 3.10 billion m², or 2.20 m² per inhabitant. The percentage of people aged 7 and older who regularly engage in sports and exercise is about 37.2% throughout the year [13].

Data from China’s National Bureau of Statistics show that since 2015, the total output (total scale) of the national sports industry was RMB 1.7 trillion, with an added value of RMB 549.4 billion, accounting for 0.8% of the GDP in the same period; RMB 1.9 trillion in 2016, with an added value of RMB 647.5 billion, accounting for 0.9% of the GDP in the same period; and RMB 2.2 trillion in 2017, with an added value of RMB 781.1 billion. In terms of growth, the total output in 2017 was 15.7% higher than in 2016. The added value increased by 20.6%. In 2018, the total scale (total output) of the national sports industry was RMB 265.79 billion, the added value was RMB 100.78 billion, and the proportion of added value to the GDP reached 1.1%. In 2019, the total scale (total output) was RMB 2948.3 billion, and the added value was RMB 1124.8 billion. In terms of nominal growth, total output increased by 10.9%, and added value increased by 11.6% compared to 2018. Since 2018, the National Bureau of Statistics has included sports management activities; sports competition and performance activities; sports fitness and leisure activities; sports stadium services; sports intermediary services; sports training and education; sports media and information services; other sports-related services; when sports goods and related products manufacturing are combined with the sports service industry for overall statistics, we found that the size of China’s sports industry has grown year by year, from RMB 1.7 trillion in 2015 to RMB 2948.3 billion in 2019, an increase of nearly 70%. Figure 1 describes the enormous changes in the national sports industry from 2015 to 2019 in detail.

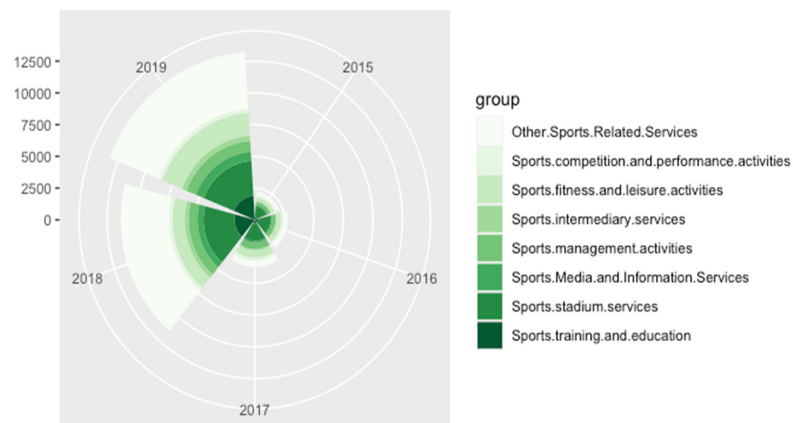


Figure 1. National sports industry of China from 2015 to 2019, data from [14].

Table 2. Sports economics of China; data from [14].

Classification	2015				2016				2017				2018				2019				
	Economic Output (100 Million RMB)		Structure (%)		Economic Output (100 Million RMB)		Structure (%)		Economic Output (100 Million RMB)		Structure (%)		Economic Output (100 Million RMB)		Structure (%)		Economic Output (100 Million RMB)		Structure (%)		
	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	Gross Output	Output Growth	
National sports industry	17,107	5,494.4	100	100	19,011.3	6,474.8	100	100	21,987.7	7,811.4	100	100	26,579	10,078	100	100	29,483.4	11,248.1	100	100	
Sports service	-	-	-	-	-	-	-	-	-	-	-	-	12,732	6,530	47.9	64.8	14,929.5	7,615.1	50.6	67.7	
Sporting goods and related products	3,508.3	1,562.4	20.5	28.4	4,019.6	2,138.7	21.1	33	4,295.2	2,615.8	19.5	33.5	13,201	3,399	49.7	33.7	13,614.1	3,421	46.2	30.4	
sales, trade agencies, and rentals	155.2	35.3	0.9	0.6	222.1	50.3	1.2	0.8	459.6	97.8	2.1	1.3	646	150	2.4	1.5	939.8	211.9	3.2	1.9	
Construction of sports venues and facilities																					

3.2. Sports Industry Development in China

China has 11 cities with a population of more than 10 million, more than 100 cities with a population of more than 5 million, and more than 200 cities with a population of more than 2 million. In the US, large cities such as New York and Los Angeles promote the growth of professional sports in a way no other nation can. Competitive and professional sports have origins in the cities where they are played.

In China, a new economic growth plan is based on a “dual circulation” [15] economy, in which the domestic sector would dominate and the internal and external sectors would complement each other [16]. A significant portion of the service sector is non-tradable in the dual circulation strategy. The development level of the service sector is favorably associated with a country’s economic development and national income, of which the sports industry is an important part [17].

As shown in Figure 2, the China Equestrian Association reports that the country’s equestrian industry grew from RMB 90.9 billion in 2016 to RMB 138.3 billion in 2019, representing a 51% increase. Moreover, the market capitalization of this industry has been steady every year. The 2019 equestrian training market size of RMB 13.83 billion in 2019 equates to a national penetration rate of 0.72% (3.52% in major first-tier cities). It is estimated that if a national penetration rate of 3% is achieved, the industry size will reach RMB 58 billion; if a penetration rate of 6% is achieved, the industry size will reach RMB 115 billion [18].

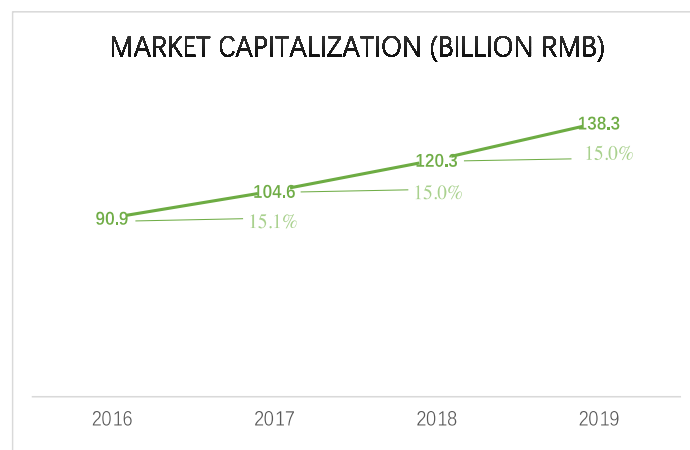


Figure 2. Equestrian market (billion RMB), data from [19].

With the growth of the sports industry from 2015 to 2019, the rise in benefits every year makes it easier for the industry to grow. With an average growth rate of about 18%, China’s sports industry grew from 1.35 trillion to 2.2 trillion between 2014 and 2017. It was RMB 404 billion in 2014 and RMB 780 billion in 2017, with an average annual growth rate of 19%. The added value of the sports industry was 404 billion yuan in 2014. In 2014, sports output was 0.64% of GDP. By 2017, that figure had risen to 0.94%. Based on the data, it appears that growth in the overall sports industry, as well as in various industries and sports within the industry, fueled an increase in the value of the equestrian market, from RMB 9.09 billion in 2016 to RMB 13.83 billion in 2019, an increase of 52.1% in four years, with an average annual growth rate of over 10%.

3.3. Department of Chinese Equestrian Activities

3.3.1. Social Environment

The Shijingshan Country Equestrian Club was founded in 1989, and became the first club in China to introduce competitive technology in sport. Such clubs now have many coaches and riders who are still perceived as being prestigious, as they were in prior times. With China’s rise in equestrian activities comes the development of equestrianism in the country. As shown in Figure 3, according to *Horsemanship* magazine in 2015, the number of equestrian clubs in China grew steadily after the 2008 Olympics in Beijing, from approximately 200 in early 2010 to more than 2000 in early 2019. In the last decade, there has been a 26% compound annual growth rate. According to the latest statistics from China’s *Equestrian* magazine, as of August 31, 2019, out of 2272 equestrian clubs in China, 112 were closed and 2160 were open [20]. From the data on class cost, we found that the business items of externally operated equestrian clubs are mainly annual membership cards, horse boarding, lesson fees, and sales of tack supplies. The average annual membership fee in East China is the highest, with an average of RMB 24,032/year. Shanghai has the highest average annual membership fee of RMB 38,403/year. The statistics show that the average horse boarding fee per horse is RMB 41,281/year, the average club lesson fee is RMB 488/session, and the Shanghai Club membership fee is up to RMB 38,403 per year [20]. On the social media side, professional media outlets such as internet portals have grown in popularity, along with the equestrian and horse sector. With the advancement of information technology, many marketing companies’ and institutions’ own video channels have become vital portals for equestrian media. According to TikTok data, equestrian events are the 4th most popular Olympic event [21].

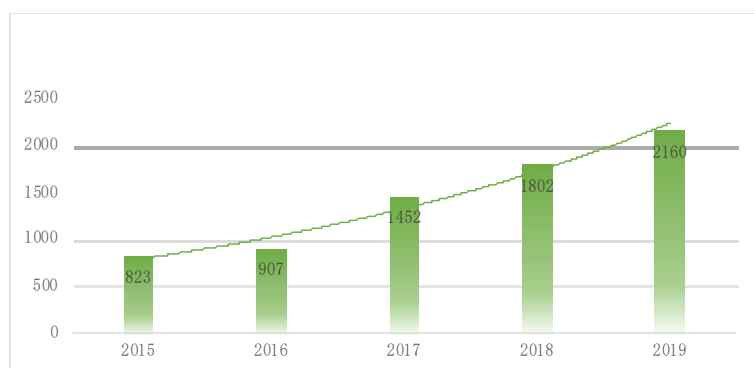


Figure 3. The number of equestrian clubs in China, data from [19].

It appears that there are approximately 420,000 equestrian club members throughout China, according to *Horsemanship* magazine’s survey in 2015 [19]. Club membership is dominated by teenagers, with children and teens accounting for 77% of the total, a significant increase from 2018, as shown in Table 3. On the other hand, adult members have dropped dramatically, now making up just 23% of the total. The market for teenagers has grown significantly during the last three years.

Table 3. Population distribution, data from [19].

Year	Children	Teenagers	Adults
2017	14.97%	46.86%	38.17%
2018	17%	49%	34%
2019	20%	57%	23%

In equestrian sports, people and animals compete side by side, and the fact that men and women can compete on an equal footing over a broad age range indicates a level of equality seldom seen in other sports [22]. We evaluated the ratio of male to female members and discovered that the number of male members has been declining while the number of female members has been growing for three years. Based on the data in Table 4, club membership is still female-dominated.

Table 4. Gender proportion, data from [19].

Year	Gender	Sampling Proportion
2017	Male	37.30%
	Female	62.70%
2018	Male	34.46%
	Female	65.54%
2019	Male	34%
	Female	66%

3.3.2. Equestrian Education

Currently, China does not have a local teaching system, and most clubs use mature foreign equestrian teaching systems. Table 5 shows a summary of equestrian teaching systems for these years in China, and Figure 3 shows the increases in clubs. It can be seen that 90% of students were taught by BHS, whereas just 9% were introduced to other methods in 2017. After 2018, many big clubs in China began to use new educational methods, such as the French GALOP system, the German FN system, the Australian Pony Club system, the Belgian VLP system, and the Dutch KNHS system. Among them, the British BHS system is still used the most, accounting for 75.97% by 2019 (2160 clubs), but there was a significant decline from 85.81% in 2018. The French Galop system accounted for 6.76% in 2018, up 15.58% that year.

Table 5. Changes in the teaching system, data from [19].

Year	BHS	Galop	FN	KNHS	Pony
2017	91%	9%			
2018	85.81%	6.76%	6.76%	0.67%	-
2019	75.97%	15.58%	4.55%	3.25%	4.55%

During the project launch ceremony for the 2019 China Sports Education Practitioner Training Center mass equestrian sports in Beijing, equestrian sports officially became a sport and project for the masses, and the industry itself experienced a breakthrough and improvement [23].

3.3.3. Horse-Breeding-Related Policies

The essential part of any equestrian sport is the horse. Equestrian activities require the breeding of high-quality horses, which necessitates a long selection, maturation, and testing process [24]. According to the 2019 equestrian industry research report shown in Figure 4, the number of imported warmbloods has decreased year-on-year since 2017, falling roughly 40% from 500 in 2015 to 300 in 2018 (the numbers are for the previous year). Meanwhile, the number of thoroughbreds increased by 28% in 2018, the number of imported Akhal horses decreased from 180 in 2015 to 30, and the numbers of miniature, Mongolian, and Orlov horses increased. By estimating the proportions of imported horses, we discovered that warmbloods, thoroughbreds, and miniature horses accounted for a significant portion of the total.

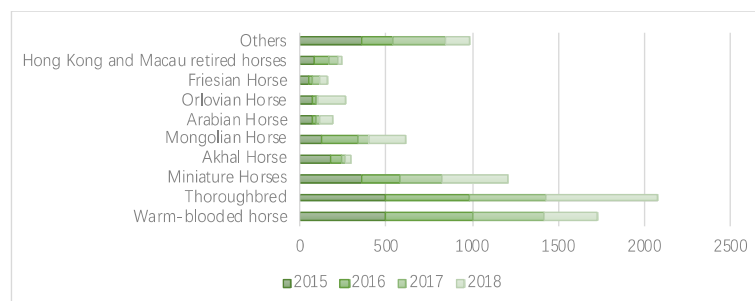


Figure 4. The proportion of imported horse breeds, data from [19].

According to the published policies, five initiatives are underway to build a modern horse-breeding system. First, fundamental principles involve insisting on market orientation, responding to the need to upgrade the consumer structure, taking a leading role in emerging markets such as equestrian sports, equine cultural activities, and horseback riding tours, and enhancing the synergy of multiple sectors of horse services. Second, there are three focused tasks: a combination of equestrian sports promotion, popularization, and improvement; active promotion of youth equestrian sports; and the promotion of traditional and national equestrian activities. Third, there will be more tournament events, horse-related tourism, and integrated industrial integration support, including the following:

1. Enhanced information sharing and mutual recognition in the industry, gradually forming a complete information management system of sport horse breeding, registration, conditioning, performance measurement, training, auction, competition, retirement, etc., and promotion of organic integration of all links in the industry chain.
2. Exploration of horse culture resources for the purpose of creating unique local characteristics, promoting the national horse culture, and enhancing the involvement of the masses.
3. Development of thematic and characteristic horseback riding tours, and promotion of the combination of the horse industry and tourism.
4. Indicators of the amount of breeding and development of horses and planning for the tournament level and the synergistic effect of all segments of the industry.
5. Equine breeding and sports event planning based on regional needs.

3.4. Future Development Route of Equestrian Sports

Additionally, the strategy outlines three components for the future development of equestrian sports. First, one must integrate promotion, popularization, and improvement. China should make the best possible use of the platform for Olympics preparations to promote and popularize equestrian sports. Arranging a series of tournaments and training events may help raise the competition level. Vibrant equestrian events should be organized to increase public knowledge of equestrian sports. Second, one must aggressively promote juvenile equestrian sports. Teenagers are the future of equestrian sports in China, and the country should make more effort to integrate equestrianism into schools so that more young people acquire an interest. Third, one must encourage traditional and indigenous equestrian sports. One must investigate the unique events associated with certain locations and horse breeds in China, and promote, publicize, and enhance the country's traditional equestrian events. One must combine the features of Chinese horses, ensure good performance in special horse events, and contribute to the growth of equestrian sports on a global scale.

4. Discussion

Why is horse breeding important for equestrian sports? In most countries, horse racing drives the development of horse breeding, but in China, horse racing is forbidden, so horse breeding relies on the equestrian sports. There are currently only 15 common native breeds in China [25]. The country's indigenous horse breed resources comprise ten breeds that are threatened with extinction [26]. Following from the old horse industry, a new industry, including primary, secondary, and tertiary sectors, is gradually forming, with a significant concentration on recreational riding. Difficulty arises because equestrian activities focused on high-end riding require a significant number of sport horses, a need that China's indigenous horses cannot meet. Chinese horse breeding and development are still in the early stages, so horses with low character, speed, and power are produced.

On the other hand, many counties have a standardized horse registration system, rigorous stallion screening, and breed improvement strategies. This has resulted in the present state of equestrian contests, with higher levels of training relying heavily on imported horses. This is confirmed by a study by the Chinese Equestrian Association. According to a survey report on the development status of China's equestrian industry and expert estimates, China has imported around 2000 horses every year from 2015 to the present, mainly from the Netherlands, New Zealand, Australia, France, and the United States. An expert study indicates that imported horses are costly, ranging from several hundred thousand to several million yuan, and the cost of shipping, inspection, and quarantine for each horse can exceed RMB 100,000. Every year, more than one billion yuan is spent on importing 2000 horses from other countries [19]. That is why strengthening China's horse breeding is the only option.

Regarding the social aspect, from the growth of the industry in recent years, there are more equestrian clubs, and more teenagers are joining equestrian training, but there has not been a major jump in how they are taught. An annual production value of more than RMB 10 billion, an equestrian population of more than one million, more than 100 national equestrian events and activities, 1000 regional events, and 2000 equestrian clubs reflect the economic performance. At present, the China Equestrian Association only has a rider certification test, and there is no systematic teaching part. Education systems from other countries are still used, and China's education system has not yet been formed. We also examined equestrian policies from 2016 to 2021, and we found that in the current national economy, equestrian sports, which are costly, are becoming more popular with the public. This means more people will join the sport. It is even better when the sport combines one, two, or three different industries, because that means it can grow even faster.

From the equestrian-related data of Germany, in the past 40 years, the number of horses doubled, and more than 300,000 individuals make a living directly or indirectly from horseback riding and equestrian activities [27]. In Germany, 2.32 million people call themselves riders, there are about 1.25 million privately owned horses, and the horse industry is estimated at EUR 6.7 billion [28].

In China, 2019 was the first year when statistics were available to report. There are 2160 registered clubs, with an average of 316 members per club, among which 72.96% have full-time horse workers, with an average of 8 per club, and 18.59% have foreign instructors [20]. From this, it can be deduced that the total number of Chinese riders in 2019 was 682,560. In comparison with the enormous market demand, the growth of the equestrian industry has clear flaws. The national horse population dropped from 11 million in the 1980s, when it was the greatest in the world, to around 3.6 million now. This means that there is wasting of horse resources in China. The horse industry is one of the few in the world that can combine the primary, secondary, and tertiary sectors, with a lengthy industrial chain and high volume, therefore increasing domestic demand and creating jobs for a substantial number of employees [29].

However, breeding horses involves hazards and lengthy time periods, and results will not be seen immediately. Breeding horses for sport and military reasons was viewed as an English gentleman's patriotic obligation in the 19th century, and the creation of the

English thoroughbred was probably dependent on the importation of foundation stock by English nobility. In nineteenth-century sport, horse breeding also served as a means of entry into the upper echelons of British society; however, it was a high-risk endeavor [30]. The risks associated with breeding sport horses entail a significant financial investment. As a result of the low return, horse breeding is seen as a hobby rather than a business. The horse-racing industry, which could promote horse breeding, is banned in mainland China, so horse breeding is limited to only the cultivation of FEI-certified equestrian sport. A lack of support from the horse-racing industry will result in slow horse breeding, higher sport horse prices, and more expensive equestrian sports, thereby making it difficult within the economic cycle to develop the entire horse industry.

In contrast, the cost of horses used for competition is exceptionally high, implying that the cost of equestrianism as a sport is also extremely high. With the Chinese government's plan to increase horse breeding, it can be predicted that a more vigorous breeding program will increase the number of horses and propel the growth of the entire industry. Equestrian sports in China will also benefit from a better breeding program, as it will reduce the costs for the sport, which will attract more people to participate.

The current horse market in China is already firmly established due to several policies promoted by the government, and because equestrian clubs, equipment, and competitions have progressively improved over the past five years. From its presence in three Olympic Games in 2008 to the more recent breakthrough, Chinese equestrianism has been supported at the national and industrial level, as well as by numerous equestrian organizations.

5. Conclusions

We conclude that government support, the economic situation of the sports sector, and the current situation of equestrian development are the most critical aspects in developing the equestrian industry and gradually gaining popularity. More and more young people are participating in equestrian sports. With the Chinese government introducing various policies to support the development of the horse industry, the horse breeding industry will also improve and gradually form a virtuous cycle.

The equestrian industry's rise is due to the repeated implementation of sports-related legislation and the increase in consumer demand for equestrian activities. Policy encouragement, combined with the rapid growth of China's middle-income population in recent years, has fueled the continuous upgrading of sports consumption, and the demand for middle- and high-end sports such as equestrian sports, which was previously considered a niche, is now also increasing. In the future, we think equestrian sports in China will be popular and localized.

Limitations

For our study, we gathered the majority of data from the government and big news organizations, and there is a lack of data from prominent equestrian clubs. Because few people have conducted in-depth research on the industry driven by the sport of equestrianism, we hope that this paper provides an overview of the horse industry, and the value of this industry will hopefully draw people's attention, so that more people in the future will pay attention to this modern industry that combines horses and sport.

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4.3. Equine-assisted interventions for veterans with posttraumatic stress disorder

Equine-assisted intervention therapy, with a nearly 60-year history, has demonstrated significant positive effects on various psychotherapy patients. The growing research in this field has resulted in an increased variety of equine-assisted intervention therapy methods. This study specifically explores the characteristics of equine interventions applied to veterans with post-traumatic stress disorder (PTSD) by conducting a systematic review of peer-reviewed literature from 2018 to the present. The analysis of ten selected articles reveals that various equine-assisted interventions have a beneficial psychological impact on veterans. However, limitations, such as small sample sizes in the majority of experiments, highlight the need for further research to delve into specific details, theories, and the welfare of the horses involved in therapy.

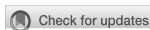
DOCTORAL THESIS

Jiaxin Li

Study 3



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Equine-assisted interventions for veterans with posttraumatic stress disorder: a systematic review

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Equine-assisted intervention therapy has a nearly 60-year history and has been shown to have a significant positive impact on various types of psychotherapy patients. Due to an increase in research on EAT, the number of existing methods of equine-assisted intervention therapy has gradually increased. Based on existing literature on the application of equine-assisted intervention therapy on veterans with post-traumatic stress disorder (PTSD), this study examines the characteristics of several types of equine interventions and includes a systematic review of peer-reviewed literature on equine-assisted interventions for veterans with PTSD published over the past 5 years, from 2018 to the present. Ten articles met the review criteria and served as the primary data for analysis. Several types of equine-assisted interventions were shown to have a beneficial psychological impact on veterans. However, some limitations were also found in the studies, such as that the majority of experiments were constrained by small sample sizes. Equine-assisted intervention therapy has been shown to be effective, but further research is merited, in order to focus on the specific details and theories involved in equine-assisted interventions, and on the welfare of the horses involved in the therapy.

KEYWORDS

equine-assisted interventions, post-traumatic stress disorder, veterans, systematic review, equestrian

1. Introduction

Danish dressage rider Lis Hartel is credited with being the inspiration behind the field of therapeutic horse riding. She won a silver medal in Grand Prix dressage at the 1952 Olympics in Helsinki, Finland, despite being severely disabled by polio. As a result of this amazing achievement, medical and equine specialists in Europe began offering therapeutic riding programs at their facilities (1). The research into equine-assisted healing began in 1960 and spans more than six decades. The use of horses in therapy is growing and is considered a viable option for treating a wide range of mental health disorders (2).

According to reports in the available literature, there are 600 equine-assisted intervention programs used by the Equine-Assisted Growth and Learning Association (EAGALA) (3). Equine interventions have grown in popularity over the years (4). Up until the present, equine-assisted intervention therapy research addressing a variety of mental health problems, including post-traumatic stress disorder (PTSD), has been limited and often poorly constructed, characterized by small sample sizes, unreliable assessments, unstandardized treatment techniques, and conflicts of interest among researchers.

The high risk of trauma that can result from combat, injury, captivity, and sexual assault faced by military personnel increases the prevalence of PTSD from 10% (civilian) to 30% (military personnel) (5–7). As research subjects, military personnel with PTSD play a critical role in the field of PTSD research. According to current research, the participation of horses in treatments has evolved into a novel auxiliary treatment method for a variety of diseases.

Therefore, in this study, we examine previous treatment cases with PTSD-afflicted veterans, in order to provide a theoretical and empirical foundation for the advancement of therapeutic horse engagement. More specifically, the main objectives of the paper are to describe the demographics of the veterans who participated in equine-assisted interventions and the screening processes that were used in their selection, as well as to describe the specific characteristics of equine-assisted interventions that have been applied to veterans, including intervention methods, study design, and results.

As previously mentioned, equine-assisted interventions have been an integral part of animal-human interaction therapy for 60 years. Despite the fact that recent systematic (8) and narrative review (9) have been conducted in this field, the present review introduces a more comprehensive analysis of the five distinct kinds of therapies. Also, this systematic review presents the treatment procedures for veterans in the form of a table, providing a more intuitive representation of the unique characteristics of each therapy.

The structure of the paper is the following: The first section presents an introduction to several different equine therapy methods. The second section gives the details of these methods and discusses the current state of equine therapy research for PTSD over a 5-year period.

1.1. Description of PTSD

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM) (10), the diagnostic criteria for PTSD can include one or more of four domains: the re-experiencing (recurring thoughts or dreams) of traumatic events, avoidance (avoiding thoughts or feelings related to traumatic events), negative thoughts and moods (blaming oneself and/or others and having a pessimistic outlook), and anger arousal (outbursts of rage). In addition, significant functional impairment, varying psychiatric comorbidities, suicidal tendencies, substance abuse, chronic pain, poor physical health, and delayed seeking of treatment are all linked to the long-term effects of PTSD (11–13).

PTSD is a stress and trauma-related disorder, in which symptoms develop after exposure to one or more traumatic events (14). Reduced quality of life, substance abuse, suicide, risky and unhealthy behaviors, decreased productivity, domestic violence, and impaired relationships are all risks faced by people with PTSD (15). Traumatic neurosis (related to an individual's vulnerability) is not the root cause of PTSD; rather, an external (traumatic) event triggers the disorder. The research of Gillies et al., Bradley et al., and Schneier et al. show that while some participants experienced an improvement of symptoms during treatment, others did not (16–18).

1.2. Animal assisted interventions

Animal-assisted therapy (AAT) is a therapeutic method that involves a patient, a therapist, and a trained animal, with the goal of

achieving a predetermined therapeutic objective (19). Animal-assisted therapies (AATs) have proven effective in treating people of all ages, including those with both mental and physical impairments.

AAT has been utilized effectively as a treatment method for adults and children with psychological and physical disabilities. It is an adjunctive treatment designed to benefit the patient's affective, cognitive, motor, and social functions (20). It has been demonstrated that AATs can improve communication, patient responsiveness, social interactive skills, socialization, activities of daily living, and general well-being (21).

Several different species of animals can be employed in AAT, with cats, dogs, and horses currently being the most common (22, 23). It is also important to note that AAT has been used successfully to help treat a variety of physical diseases. There is a significant amount of literature on the topic of using equine-based alternative activity interventions (AAIs) on people who have experienced trauma (24). Despite the widespread use of AATs, there have only been a small number of high-quality empirical studies that have examined their efficacy in the treatment of PTSD.

1.2.1. Equine-assisted interventions

Proponents of equine-assisted intervention argue that the therapeutic interactions between horses and humans can help patients gain new perspectives and alter their behavior by serving as catalysts for the emergence of new ideas and emotions. While the field of equine-assisted psychotherapy (EAP) is still in its infancy, there is substantial evidence in the literature supporting the use of AAT for people with trauma-related disorders. Some possible benefits are the development of nonverbal communication abilities through interaction with horses and a reduction of blood pressure, heart rate, and anxiety levels, and AAT can also effectively treat depression, anxiety, attention deficit/hyperactivity disorder, conduct disorder, dissociative disorder, Alzheimer's disease, dementia, autism, and various other chronic mental illnesses (23–31).

1.2.2. Equine-assisted psychotherapy

EAP was established in 1990 and rapidly expanded in both Europe and the United States (32). EAP studies may always have limitations due to the variable nature of the intervention and the settings in which it is delivered, but rigorous randomized controlled trials are possible for evaluating EAP treatments (33).

EAP is similar to other AATs in that it is characterized by a lack of empirical evidence but includes many of the same components and benefits. EAP and AAT operate in different ways. First, dogs and cats are commonly employed for AAT because they are affectionate family pets. Horses are different from dogs and cats in that they are extremely sensitive to their environment and must be taught to trust humans. They are particularly sensitive to the moods and behaviors of the people around them (34). EAP has been shown to be a powerful and effective tool for participants who struggle with fear, depression, anger, anxiety, and other emotional disorders (35).

1.2.3. Equine-assisted activities and therapies

Over the past decade, the use of horses in the context of equine assisted activities and therapies (EAAT) has exploded in popularity, with over 66,000 children and adults (including over 6,200 veterans and active-duty military personnel) receiving assistance from one of the 800 certified member centers and 4,800 certified instructors (36).

Previous research in the field of EAAT has primarily been focused on physical rehabilitation, and the majority of peer-reviewed publications have reported on the effects of human-horse interaction (29, 37–41). The treatment programs focus primarily on riding horses, and several related areas of research have led to significant advances in the treatment of physical mobility disorders (42).

1.2.4. Equine-assisted therapy

EAT is gaining popularity as a complementary and alternative treatment for PTSD. EAT is also known as equine-facilitated cognitive behavioral therapy. There has not been sufficient research on the efficacy, feasibility, or safety of EAT in the treatment of PTSD, and there are no well-detailed treatment manuals for providing EAT. Therapeutic horseback riding (THR) and EAT-PTSD therapy, designed specifically for PTSD patients, are among the branches of EAT researched in the 10 articles used in this study. THR is a branch of EAT whose research focuses primarily on children with autism spectrum disorder (28). In addition, THR is an essential EAT technique.

However, THR should not be confused with hippotherapy, in which physical, occupational, and speech therapists specifically work with horses to improve the functional abilities of the patient (43). Through groundwork interaction and THR, bonding between the patient and the horse is facilitated (44).

1.2.5. Equine-assisted services

The term “equine-assisted services” (EAS) is used to describe a wide variety of AAs designed to benefit human users (45). Due to the fact that EAS interventions are in the initial phases of scientific development, thorough investigations are generally insufficient, and there is no standardized intervention strategy, which causes difficulty in making comparisons and replicating studies (33). One of the 10 articles used in this study employed a new model of EAS intervention called Whispers with Horses (46).

2. Methods

This study presents a systematic review. Comprehensive searches were conducted in the US National Library of Medicine (PubMed, Bethesda, MD 20894, USA), Medical Literature Analysis and Retrieval System Online (MEDLINE), and Web of Science databases. These databases are renowned for containing articles of exceptional quality and reliability, offering robust bibliographic support. We identified original articles focused on horse therapy from the past 5 years, detailed by the search strategy in Table 1.

A PRISMA flow diagram illustrating the search process is available (refer to Figure 1). The references from the selected studies were scrutinized to identify any additional pertinent articles. The most recent search for this systematic review was executed on 1 May 2023. There were no language restrictions.

Considering the emerging nature of the topic and the limited data available, no filters were applied concerning the study design; hence, both longitudinal and cross-sectional studies were considered. Similarly, there was no age limitation for the study populations. Two researchers (JL and RS) independently and concurrently performed the search, screened the titles and abstracts of 85 retrieved articles, assessed the full texts, and finalized the selection. From this process, 10 articles met the inclusion criteria.

TABLE 1 Searching strategy in databases.

Search strategy	Description
#1	(Horse PTSD) OR (therapeutic riding PTSD)
#2	Hippotherapy PTSD
#3	(Equine assisted PTSD) OR (horse treatment PTSD)
#4	# 1 AND # 2 AND # 3

Inclusion criteria specified original studies evaluating the role of live horses in Psychologically-Assisted Therapy for Humans, excluding interventions using horse simulators. Reports, letters to the editor, and other systematic and narrative review articles were not considered. Ultimately, 10 articles were included based on these criteria.

3. Results

In this descriptive review, we consolidated our primary findings into five tables. Table 2 details the 10 included studies, accompanied by information regarding their respective participants. Of these, eight were conducted in the United States, one in Israel, and another in Australia.

Every veteran encompassed in the studies suffered from PTSD. A singular article delved into both PTSD and traumatic brain injury, whereas the remaining nine exclusively addressed PTSD. Each study specified age brackets, with participating veterans ranging from 25 to 69 years of age.

Table 3 shows the four equine intervention methodologies employed for the veterans. This table also elucidates the study design, assessment tools, veterans' evaluation as research participants, post-intervention assessments, and the ensuing research outcomes.

All 10 articles are underpinned by experimentally derived data. Broadly speaking, each article's primary objective is to evaluate the efficacy of equine intervention as a therapeutic approach for veterans diagnosed with PTSD. Seven articles reported treatments administered weekly; one detailed interventions conducted on consecutive days; and two articles did not specify the duration of treatment but underscored its completion within the experimental timeframe. Out of the 10 articles, two explicitly indicated that PTSD diagnostic tests were conducted during participant recruitment, while the remaining articles relied on medical records for participant screening.

Table 4 delineates the specific interventions employed in each study, describes the data measurement methodologies, and summarizes both the findings and the identified limitations of these studies.

All 10 articles presented four unique equine interventions: five studies focused on EAT, two on EAS, two on EAAT, and one on EAP. Four of these studies employed questionnaires assessing quality of life, whereas seven used questionnaires specific to the diagnosis of mental disorders. Six articles conclusively established the efficacy of the equine intervention in symptom mitigation, but two did not yield definitive results. Within these inconclusive studies, two suggested potential treatment benefits, while the other two observed a resurgence of symptoms in the subjects 3 months post-intervention.

In terms of limitations, four studies highlighted their limited sample sizes. Sylvia et al. articulated that, rather than a clinical trial, their study sought to ascertain the feasibility of employing EAAT for veterans

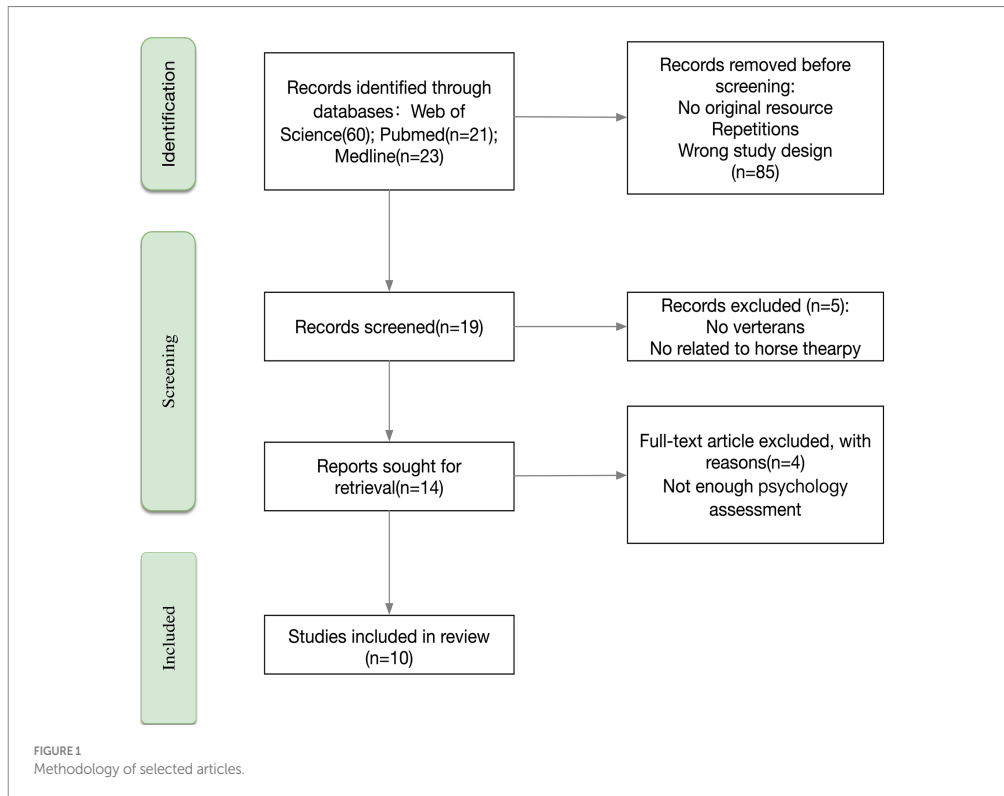


TABLE 2 Participates information.

Study	Country	Subjects	Sample size	Age
Shelef et al. (47)	Israel	Veterans with PTSD	23	28–48
Marchand et al. (33)	USA	Veterans with PTSD	18	28–69
Sylvia et al. (48)	USA	Veterans with PTSD and their family	106	25–57
Marchand et al. (49)	USA	Veterans with PTSD	33	46
Romaniuk et al. (50)	Australia	n = 25; Veterans only; Couples program (n = 22)	47	31–57
Arnon et al. (51)	USA	Veterans experiencing PTSD symptoms	8	30–61
Malinowski et al. (36)	USA	Veterans with PTSD; Horses	7	31–68; horse age 10–23
Burton et al. (34)	USA	Veterans with PTSD	20	33–61
Fisher et al. (52)	USA	Veterans with PTSD	63	50
Johnson et al. (53)	USA	Veterans with posttraumatic brain injury, or both	20	29–68

undergoing PTSD and/or TBI treatment (48). Marchand et al., across two distinct studies, emphasized that their research was not controlled and thus could not definitively establish causation (33, 46). Romaniuk et al. acknowledged the absence of a control group in their experiments (50). Fisher et al.'s study lacked an actively treated control arm (52), while Johnson et al. pointed out that environmental factors and data collection methods potentially influenced their experimental results (53).

Table 5 presents a descriptive overview of explanation and summary of how the equine-assisted interventions were executed across various studies.

Before initiating any experiment, participants were briefed about the treatment procedures and underwent preliminary exercises. Table 6 reveals that the average duration for the 10 EAT studies spanned 11 weeks, whereas EAAT treatments averaged a considerably shorter duration of 3.5 days. Every equine intervention approach necessitated more than 1 h per session.

Three studies included a three-month follow-up evaluation, and another had a follow-up after just 6 days. As per Table 4, both Arnon et al. and Romaniuk et al. observed symptom recurrences and elevated test questionnaire scores after a three-month interval (23, 50, 52).

TABLE 3 Investigation of equine-assisted interventions for veterans.

Study	Study design	Aim	Estimating Method	Subjects Assessment
Shelef et al. (47)	Open case study	To examine the impact of EAT on the symptoms and functioning of individuals with PTSD.	Weekly frequency	A DSM-IV-TR diagnosis of PTSD for at least 1 year. Exclusion criteria included any orthopedic/neurological or other physical diseases that contraindicate equestrian riding, a concurrent psychosis diagnosis, and/or a reluctance to ride horses.
Marchand et al. (33)	Prospective cohort	To evaluate a pilot program to treat PTSD using equine therapy in military personnel.	Weekly frequency	A comprehensive healthcare system administered by the Veterans Administration.
Sylvia et al. (48)	Thematic analysis	To research whether or not incorporating EAAT within a two-week intense therapeutic program for veterans with PTSD and/or TBI is feasible.	Weekly frequency	Satisfaction survey interview and questionnaire.
Marchand et al. (49)	Prospective open trial	To conduct the preliminary research necessary for future rigorous clinical trials of the Whispers with Horses intervention.	-	The subjects were recruited through referrals from the facility's clinical staff. Participation in the study necessitated a history of military and/or civilian trauma. Active psychotic spectrum illness and/or cognitive impairment prohibiting meaningful participation were exclusionary criteria.
Romaniuk et al. (50)	A non-controlled, within-subjects longitudinal design	To examine the effects of an equine-assisted therapy program for Defence Force veterans and their partners on depression, anxiety, stress, posttraumatic stress, happiness, and quality of life. The difference between Individual and Couples program.	-	Included ex-serving Defence Force personnel or their partners, Mates4Mates members, and psychologist-approved program completers. Mates4Mates members must have served in the Australian Defence Force (ADF) and self-report a physical or psychological condition.
Arnon et al. (51)	Pilot open trial	To gauge the initial effects of EAT treatment protocol for PTSD (EAT-PTSD)	Weekly frequency	Telephone screening and questionnaire clinical referrals and print and online advertisements.
Malinowski et al. (36)	A pilot field study	To measure plasma cortisol and oxytocin concentrations and HRV in horses participating in EAAT. To assess PTSD symptoms in previously diagnosed veterans before and after 5 days of EAAT, as well as heart rate and blood pressure readings during EAAT.	Daily frequency	All veterans with a history of Post-Traumatic Stress Disorder (PTSD) were recruited from Lakewood Veterans Affairs in New Jersey.
Burton et al. (34)	A two-arm, parallel group study design with delayed intervention in the control group.	To investigate how EAP affects PTSD symptoms.	Weekly frequency	Veterans with PTSD and a PCL-M score of at least 29 were eligible to participate. Adults who could not provide informed consent, children under 18, pregnant women, prisoners, antipsychotic patients, and glucocorticoid patients were excluded.
Fisher et al. (52)	An open trial of EAT-PTSD had 4 assessment points: pretreatment, midpoint, posttreatment, and 3-month follow-up.	To investigate if EAT-PTSD lead to potential therapeutic benefits for veterans.	Weekly frequency	Clinical referrals from Veterans Administration (VA) centers, other program affiliated with our center (the New York Presbyterian Military Family Wellness Centre at Columbia Veterans Research Centre), flyers, print and online advertisements, and word of mouth were utilized to close the gap in the table with the following study.
Johnson et al. (53)	A randomized clinical trial	To elucidate the experiences of veterans who participated in a 6-week THR program.	Weekly frequency	Electronic medical records; questionnaire

Riding activities, with an emphasis on safety precautions, were featured in only four studies, three of which centered on EAT and one on EAS. Merely three out of the 10 studies ensured a compatibility match between the horses and the participants and also tended to the well-being of the involved horses. Two studies immersed participants in

diverse activities, encompassing mounted exercises, horse tack routines, daily interactions, and family engagement. Six studies integrated specific therapeutic practices. Noteworthy, Malinowski et al. conducted simultaneous equine welfare assessments during their PTSD research, confirming that the treated horses remained unharmed (36).

TABLE 4 Main findings.

Study	Intervention	Outcome measures	Overall findings	Limitation
Shelef et al. (47)	Group; EAT(equine-assisted therapy)	The Short Post Traumatic Stress Disorder Rating Interview (SPRINT) ; The Sheehan Disability Scale (SDS) questionnaire	Improvements in daily functioning have been observed. This enhancement not only instills coping mechanisms but also fosters the development of a healthier, stronger self-image. Significant progress has been noted in functional domains, particularly regarding the ability to work and complete daily tasks as measured by the SPRINT scale. Additionally, there was a noticeable decrease in inefficiencies related to work, study, and household chores as per the SDS scale.	The sample size was small, resulting in limited statistically significant changes across all PTSD symptoms.
Marchand et al. (33)	Equine-assisted services (EAS)	Physical Activity Enjoyment Scale (PACES); Acceptance and Action Questionnaire II (AAQII); Positive and Negative Affect Scale (PANAS); Beck Depression Inventory (BDI-II); DSM 5 (PCL-V); Quality-of-Life Enjoyment and Satisfaction Questionnaire (QLES-Q-SF)	The AAQII may serve as a tool to investigate PF as a potential mechanism underlying the efficacy of this intervention. Despite not being a traditional mental health treatment, the intervention could offer psychological benefits to Veterans diagnosed with PTSD.	Initially, the study was uncontrolled, thus not delineating clear cause-and-effect relationships. The potential for selection bias was evident as randomization was not employed. The research faced challenges with subject attrition and a limited sample size, potentially limiting its generalizability to other Veterans. While PMM was utilized to impute missing data—a technique apt for nonparametric datasets—its application may not be suitable for studies with small sample sizes. Additionally, the fidelity of intervention delivery was not evaluated.
Sylvia et al. (48)	Equine-assisted activities and therapies (EAATs)	PCL-5: Posttraumatic Stress Disorder Check List for Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition); PHQ-9: Patient Health Questionnaire; NSI: Neurobehavioral Symptom Inventory; AUDIT-C: Alcohol Use Disorders Identification Test.	Of the 62 seniors who participated in the program, 15 (24.2%) expressed interest in returning, while 13 (21.0%) opined that the weekend group size was optimal. Similarly, from the 44 families engaged in the program, 11 (22.4%) indicated their willingness to return, and 12 (24.5%) considered the weekend group size as ideal. Such findings provide initial evidence suggesting the acceptability of an adjunct EAAT program for veterans with PTSD and/or TBI participating in an IOP.	Rather than implementing a clinical trial, the study aimed to ascertain the feasibility of utilizing EAAT in veterans undergoing treatment for PTSD and/or TBI. The data were derived from anonymized satisfaction surveys.
Marchand et al. (49)	Group or individual; Whispers with horses – a model EAS intervention	PTSD Checklist for DSM 5 (PCL-V), the Patient Health Questionnaire 9 (PHQ-9), the Positive and Negative Affect Scale (PANAS), the Acceptance and Action Questionnaire II (AAQ-II), and the Physical Activity Enjoyment Scale (PACES).	Several sessions resulted in a significant enhancement in psychological flexibility, as evidenced by decreased AAQ-II scores, and demonstrated an improvement in affect, as reflected by PANAS scores. This trend might suggest that the efficacy of these sessions declines over time. Noteworthy reductions were observed in both PHQ and AAQ-II indices, indicating shifts in depression levels and psychological flexibility.	The study was limited by its small sample size. Furthermore, due to its uncontrolled design, causal relationships could not be definitively established. The lack of randomization also introduces potential selection bias concerns.
Romaniuk et al. (50)	Group; EAT	Depression Anxiety Stress Scale-21, Posttraumatic Stress Disorder Checklist for DSM-5, Oxford Happiness Questionnaire, and Quality-of-Life Enjoyment and Satisfaction Questionnaire-Short Form.	Throughout the duration of the program, participants indicated enhanced levels of happiness and life quality. However, these improvements were not sustained 3 months post-program. Notably, only participants in the Couples program sustained reductions in psychological symptoms at the three-month mark. This suggests that long-term psychological benefits may be more pronounced for couples compared to individuals.	The absence of a control group impedes definitive conclusions concerning the efficacy of the intervention. Outcomes might be influenced by uncontrolled variables, including involvement in other therapeutic interventions. Furthermore, a significant proportion of participants were not available for follow-up at the three-month interval.

(Continued)

TABLE 4 (Continued)

Study	Intervention	Outcome measures	Overall findings	Limitation
Arnon et al. (51)	Group; Equine-assisted therapy (EAT)-PTSD	Diagnostic and Statistical Manual of Mental Disorders-5 (PCL-5 47), DSM-5; CAPS-IV; HAM-D; Beck Depression Inventory-II (BDI-II); Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (QLESQ-SF); Client Satisfaction Questionnaire (CSQ)	Post-treatment, five patients exhibited a response, with one achieving remission. At the three-month mark, three out of the initial five responders persisted in their response, whereas two regressed. Among the three individuals who did not respond post-treatment, one persisted in non-response, and two opted out of the follow-up assessment. A relapse was observed 3 months post-treatment. Of the seven individuals who did not achieve remission post-treatment, only one attained remission during the follow-up.	The sample size was limited and may not be representative. Patients concurrently undergoing psychotherapy or medication therapy were incorporated into the open trial, introducing potential confounding variables.
Malinowsk et al. (36)	Individual; equine-assisted activities and therapies (EAAT)	Brief Symptom Inventory and the PCL-5 (The PTSD Checklist for the DSM-5); Blood samples; Post-Traumatic Stress Disorder (PTSD);	An analysis of symptom clusters highlighted significant reductions in Cluster E Hyperarousal Symptoms. Concurrently, the PCL-5 Composite Score demonstrated marked reductions in PTSD symptoms, with heart rates showing a decline on day 2. Pertaining to horses: During EAAT, there was a noted decrease in the horses' heart rates. No significant variation was observed in HRV variables such as SDNN and the LF/HF ratio. Additionally, plasma cortisol levels remained stable, suggesting the treatment regimen was not stressful for the horses. Furthermore, plasma oxytocin concentrations remained consistent in horses engaged in EAAT with veterans.	Measurement of the same hormones or physiological parameters for heart rate variability, as assessed in horses, was not feasible.
Burton et al. (34)	Group; Equine-assisted psychotherapy (EAP)	Salivary cortisol; PTSD Check List-Military Version (PCL-M); Connor-Davidson Resilience Scale (CD-RISC)	Participants reported enhanced levels of trust, relaxation, and patience. They also observed individual amelioration in symptoms and overall quality of life. EAP did not exhibit a significant alteration or increase in morning salivary cortisol concentrations.	Both the intervention and control groups suffered from a small sample size. Additionally, the study was limited by the lack of a randomization schedule. The research did not employ a dedicated instrument to gauge improvements in social or emotional functioning, or shifts in the overall quality of life. It is noteworthy that neither the intervention nor the control group excluded participants actively engaged in preexisting therapies. The study also did not consider the nature or quality of the participants' previous professional therapies. Another limitation may stem from the short duration of the therapy sessions; EAP therapy was administered for a total of 6 h spread over 6 weeks, equating to 1 h per week.

(Continued)

TABLE 4 (Continued)

Study	Intervention	Outcome measures	Overall findings	Limitation
Fisher et al. (52)	Group; Equine-Assisted Therapy for PTSD (EAT-PTSD)	PTSD Checklist for DSM-5 (PCL-5); (SCID-5-RV); Clinician-Administered PTSD Scale (CAPS-5); HDRS; self-report Beck Depression Inventory-II (BDI-II).	Reductions were observed in CAPS-5, PCL-5, HDRS, and BDI-II scores.	The absence of a control group without active therapy limits the study's ability to evaluate the clinical efficacy of EAT, especially considering many participants were already on stable psychological and/or pharmacological treatments. Open trials may yield inflated results, and observed symptom changes could merely be attributed to the passage of time. Nevertheless, clinically significant symptom reductions were sustained at the 3-month follow-up. Furthermore, independent evaluators were not blinded to the open treatment, introducing potential bias. The study also did not account for any additional treatments received between the post-EAT assessment and the follow-up, as the intent was not to deter patients from seeking further treatment.
Johnson et al. (53)	Group; EAT-Therapeutic horseback riding (THR)	Coping Self Efficacy (CSES); traumatic brain injury (TBI); eight-item investigator-developed Riding Questionnaire.	Participants reported that THR fostered positive personal transformations, enhanced interpersonal connections among veterans, facilitated a bond between veterans and horses, and promoted constructive interactions between veterans and staff/volunteers. Additionally, the intervention was perceived to have minimal adverse effects.	The setting and timing of data collection possibly deterred veterans from giving comprehensive responses. The nature of survey environments can induce varied impacts. Although ensuring intervention fidelity complicated the study logistics, the co-authors achieved thematic consensus. However, this consensus does not guarantee participant concordance.

4. Discussion

Preliminary data from the U.S. Army Medical Department suggest the potential benefits of animal-assisted therapy for wounded warriors participating in an occupational therapy life skills program. This underscores the significance of extended research in utilizing AAT as supplementary therapy for veterans diagnosed with PTSD and associated traumatic injuries (54).

The current review indicates that subjects showed discernible improvements in PTSD symptoms and a slight reduction in heart rate. Such findings align with established literature that details a multitude of potential physical and psychological advantages associated with animal-assisted interventions. In relation to EAAT studies that incorporated animals other than horses, the treatment duration was typically short-lived. A notable study elucidated that interacting or conversing with a dog led to reduced heart rates in participants. Within our reviewed research, the impact of EAAT involving horses on heart rate was especially prominent on days when veterans exhibited less activity and devoted more time to horse grooming and petting, as opposed to leading and roaming (55).

In studies utilizing EAAT with other animals apart from horses, treatment duration was typically brief. One study revealed that participants' heart rates decreased when touching or conversing with a dog (56). The EAAT treatment with horses in the research we reviewed had an effect on heart rate, particularly on days when the veterans were more sedentary and spent more time grooming and petting the horses than leading and walking around (36).

Through a systems mapping analysis, we discerned that equine interventions could potentially benefit veterans with PTSD. A recurrent limitation in such studies, however, is the ambiguous details concerning the horses' treatment within the research methodologies. While there are distinct breeds used for therapeutic purposes, the four horse-assisted therapies delineated in the summaries across these 10 articles exhibit no significant variation. Definitions across various categories also seem to converge.

Patients with PTSD face challenges in controlling emotions, maintaining reliance in relationships, and often harbor negative attitudes (57). Given these issues, the therapeutically value of equine-assisted interventions becomes evident, deriving from their attributes like fostering social relationships, sensory intentions, and their inherent inclusiveness and strength (58). Interacting with these huge

TABLE 5 Explanation of horse intervention research.

Component	Description
Explanation of the planned activity	
Grooming	Grooming the horse.
Riding	Walking, trotting, cantering, steering, riding cross etc.
Break	During the session the horses have time to relax.
Groundwork	Groundwork includes actions like halting, turning, backing up, etc., as well as guiding the horse with or without a halter in a round enclosure or around an obstacle course.
Horse contact	Body language, facial expressions, and other forms of communication directed towards horses or people
Get to know the horse	Spending time with the horse, either in the pasture or the stable, observing it and getting to know it.
Matching horse and participant	In a deliberate pairing, either the student or the therapist/instructor choose the horse.
Horse care	Feeding, mucking stalls, and turning horses out and in from pasture.
Social activities	Increase activities that facilitate their social integration, such as group activities and life sharing.
Mounted exercises	Perform simple horseback exercises, such as stretching and balance training.
Prepare the horse	Prepare the horse for riding by installing the saddle, bridle, and girth, among other items.
Safety	During therapeutic rides, instructors adhere to these rules, including the use of protective gear. Additionally, safety is emphasized in the training.
Connections to daily life	Connecting ideas learnt through equine activities to the participant's everyday life, maybe through dialogue or metaphor.
Family participation	Partners in the family or spouses took part in the session.
Integration of therapeutic practices	Equine intervention practice runs concurrently with other therapeutic modalities like cognitive behavioral therapy, mindfulness-based stress reduction, motivational interviewing, or reality testing.
Horse welfare	Mention about horse welfare.

animals provides patients both a sensory experience and a sense of control; this is further augmented by an experience-oriented approach that bolsters communication and mindful awareness during equine therapy (59). Through interaction with horses, patient benefit from emotional regulation and reflection (60). Apart from cognitive aspects, the experiential method of non-verbal embodiment combines physical and emotional dimensions, aiding emotional regulation, stress management, bolstering self-direction and resilience (61–63). Consequently, patients are better poised to re-establish trust. A review highlighted a statistically significant clinical improvement in symptoms after merely five 1-h sessions with horses (53). While traditional PTSD therapies can be prolonged, equine-assisted intervention therapy be a swift and effective method. Given that PTSD is a substantial predictor of suicidal ideation, the urgency for rapid-result treatments is essential.

Regarding equine welfare, horses engaged in therapeutic interventions encounter stressors, defined as environmental stimuli triggering homeostatic imbalances. Such stimuli elicit behavioral alterations, diminished immunity, and activations of the hypothalamic–pituitary–adrenal (HPA) axis alongside the autonomic nervous system (64). Chronic activation of any neuroendocrine axis can compromise equine welfare. The detrimental impact of a stressor hinges not on its intrinsic properties (intensity, duration, frequency) but on the predictability and controllability for the horse.

A specific horse study indicated that seasoned and rodeo-familiar horses manifest lower cortisol levels compared to their less experienced counterparts (65). The horses in our reviewed studies did not exhibit heightened fitness. Glucocorticoids have been prevalently employed as welfare indicators in animal welfare research (64). During EAAT sessions, horses exhibited reduced heart rates; metrics such as

the standard deviation of normal-to-normal R-R intervals (SDNN) and the sympatho-vagal balance (LF/HF) ratio remained stable, implying a non-stressful session. Notably, in contrast to infrequent human-horse experimental setups, horses in Malinowski and colleagues' EAAT investigations appeared unaltered (36).

EAT was adapted to address PTSD, with a variant being THR, categorized as an EAT sub-type. Fisher et al. posited that EAT-PTSD is safe and generally well-received (52). It could potentially engage avoidant patients averse to structured treatments, thereby fostering receptivity to further interventions. Johnson et al.'s findings highlight that the THR method involves direct riding, leveraging the necessity for riders to engage core muscles to remain upright on the horse (53). This enhances physical activity, diminishes stress, bolsters coping self-efficacy, and augments potential social support opportunities, potentially ameliorating PTSD symptoms and enriching veterans' mental well-being.

Of the reviewed articles, only Burton et al. applied the EAP intervention approach. However, based on the intervention descriptions, participants were not involved in combined riding and psychotherapy sessions, rendering this EAP variant less impactful compared to others.

Extensive studies have underscored the efficacy of EAS in mitigating depression, anxiety, and PTSD symptoms among veterans (33, 66–69). Marchand et al., based in a prominent medical center, conceived the EAS-Whispers with Horses intervention in a bid for standardization. This method amalgamates mindfulness and self-compassion into a six-session psychotherapy and horse (PIH) program tailored for traumatized veterans. The integration with other psychotherapies, however, warrants further empirical validation.

TABLE 6 Equine-assisted interventions details.

Item	Shelef et al. (47)	Marchand et al. (46)	Sylvia et al. (48)	Marchand et al. (4)	Romaniuk et al. (50)	Arnon et al. (51)	Malinowski et al. (56)	Burton et al. (54)	Fisher et al. (52)	Johnson et al. (53)
Type	EAT	EAS	EAAAT	EAS	EAT	EAT	EAAAT	EAP	EAT	EAT
Session	24	4	3	6	-	8	5	6	8	6
Duration	6 months	4 weeks	Two-day weekend	8 months	-	8 weeks	5 days	6 weeks	8 weeks	6 weeks
Time/session	3 h	1-2/4h;3-4/2 h	2 h	90 min in group; individual 60 min.	-	1.5 h	1 h	1 h	1.5 h	1 h
Follow up	-	-	-	-	3 months	3 months	6 days	-	3 months	-
Explanation of the planned activity	✓ 20 min	✓	✓	✓	✓	✓	✓	✓	✓	✓
Grooming	✓	-	-	✓	✓	✓	✓	-	✓	✓
Riding	✓ 45 min	✓ 45 min cross	-	-	✓	-	-	-	-	✓
Break	✓ 1.5 min	-	-	-	-	-	-	-	-	-
Groundwork	✓ 4.5 min	✓	✓	✓	✓	✓	✓	✓	✓	✓
Horse contact	✓	-	-	✓	✓	✓	✓	-	✓	✓
Get to know the horse	-	✓	✓	✓	✓	✓	-	-	✓	✓
Matching horse and participant	-	✓	-	✓	-	-	-	-	-	✓
Horse care	-	-	✓	-	✓	-	-	-	-	✓
Social activities	✓ 4.5 min	-	✓ non-horse-based activities, such as quilting.	✓	✓	✓	-	✓	✓	-
Mounted exercises	-	✓	-	-	-	-	-	-	-	✓
Prepare the horse	✓ 2.5 min	-	-	-	-	-	-	-	-	✓
Safety	✓	✓	-	✓	-	-	-	-	✓	-
Connections to daily life	-	-	-	✓	-	✓	-	-	-	-
Family participation	-	-	✓	-	✓	-	-	-	-	-
Integration of therapeutic practices	✓	-	✓	✓	✓	✓	-	✓	-	-
Horse welfare	-	-	-	-	-	-	✓	-	-	-

5. Conclusion

In this systematic review, we critically evaluated publications from the last 5 years relevant to equine interventions for veterans with PTSD. Across the board, regardless of the specific equine intervention applied, all veterans with PTSD exhibited benefits.

While the majority of the examined studies utilized the EAT method, EAAT, although less frequently adopted, demonstrated pronounced effects even over short durations. Both EAS and EAP methods were comparatively rare, but their effectiveness was evident. A conspicuous gap in the literature is the detailed description of these interventions, underscoring the need for comprehensive investigation. Detailed delineation of intervention methodologies is imperative, as it can further optimize equine welfare within the interventions.

Of note, only a minority of the studies reviewed incorporated follow-up assessments, pivotal for discerning the longevity of the treatment effects on veterans with PTSD. Given that symptom recurrence is not uncommon post-treatment, there is a dearth of research on this front. Future inquiries should prioritize discerning whether the therapeutic effects persist over time.

Treating patients with PTSD often spans several years. However, all studies in the review indicate efficacy within a 6-month period. Equine-assisted intervention emphasize emotional regulation, mental control, and the mitigation of negative attitudes. Given these facets, other mental disorders share similar traits. Hence, there's optimism that equine-assisted intervention therapy may benefit a wider range of patients in the future.

Furthermore, the methodologies lacked extensive descriptions regarding the horses' roles in the interventions. This oversight is significant; a thorough understanding of the equine intervention methodology is essential to evaluate its impact on treatment outcomes more comprehensively.

Our review was confined to English-language studies, potentially omitting relevant research in other languages.

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Conventional systematic reviews typically do not include a rigorous assessment of the included studies, and in alignment, we did not undertake such an evaluation. Additionally, a granular evaluation of each individual equine intervention study was not conducted.

Author contributions

JL: Methodology, Resources, Validation, Writing – original draft. RS-G: Supervision, Validation, Writing – review & editing.

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4.4. Chinese equestrian policy development: a narrative review

This study reviews 1978–2022 Chinese equestrian policy papers and regulations. China's horse industry is shifting from traditional to leisure and sport. This movement is being investigated through country policies and regulations. This report summarises the government's programmes that have promoted equestrian sports in China from 1978. Policy content, context, and governance mechanisms are examined using Whitemore and Knafl's 5-step policy analysis. By 2022, 29 official and semi-official papers had been retrieved, classified, and examined for archiving. Since the policy's goals are vague, its efficacy is the main problem. It also affects places with little interaction. The policies are inconsistent and unstable. Expert assessment and relevance are lacking. Without an industry chain cycle, pre-development preparation is difficult. These issues come from the sports management structure, government policy goals, and policy stakeholder conflicts.

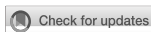
DOCTORAL THESIS

Jiaxin Li

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Chinese equestrian policy development: a narrative review

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Introduction: This paper provides an overview of the Chinese equestrian policy documents and regulations from 1978 to 2022. While the horse business is shifting from traditional to leisure and sport pattern in China, through the analysis of the policies and regulations.

Objectives: This paper aims to provide a concise overview of the government's policies which growth of equestrian sports in China over the past four decades (since 1978).

Method: Under the guidance of Whitemore and Knaf's 5-step approach to policy analysis, a systematic analysis of policy content, context, and governance processes is conducted. As of 2022, 29 documents from official and semi-official sources had been extracted, classified, and examined for records.

Results and conclusion: As of 2022, 29 documents from official and semi-official sources had been extracted, classified, and examined for records. The first is whether the policy is useful or not, its goals are vague and unclear. And there isn't much interaction between the areas it affects. Second, the policies are inconsistent and unstable. Third, there is a deficiency in terms of professional evaluation and relevancy. Fourth, pre-development preparation is not done due to the lack of an industry chain cycle. The complex causes of these issues include the sports management system, the government's policy ideals, and the competition of interests among policy stakeholders.

KEYWORDS

policy, equine, development issues, history, sport management

Introduction

In the eighteenth century, a modern form of equestrianism was created in the world (1). Later in 1900, equestrianism became an official event at the modern Olympic Games (2). For the 1912 Stockholm Olympics, equestrian events returned to the Olympics after being absent for a short time (3). In 1952, female riders began to be allowed to participate in the Olympic Games, and equestrians became the only competition in the Olympic Games where men and women, no matter how old riders were, could all compete on the same field (4). Until now, equestrian has been the only event in the Olympics where humans and animals in a team compete simultaneously.

In Chinese history, horses played an important part. Equestrianism in China can be traced back to the Zhou Dynasty (1046 BC - 256 BC). In the Tang dynasty (AD 618 - 918), horse Mingqi¹ showed the position and rank of their forms and scale (6). At the beginning

¹ Mingqi is usually found in Chinese tombs, and it generally refers to burial furniture or objects placed with the intention of providing the deceased with the same physical environment as in life (5).

of the twentieth century, horse racing and polo were brought to Shanghai and Hong Kong. This brought back interest in horses' value potential in China.

The Chinese Equestrian Association (CEA) was established in 1979 and joined the FEI in 1983 (7). Since then, the CEA has worked to help equestrian sports grow in China. In 1984, China joined the Olympic Games, but no Chinese equestrians participated until the 2008 Beijing Olympics. It marked the beginning of equestrian development for China, even though it had 300 equestrian clubs when six equestrian athletes entered the Olympic stadium during the 2008 Beijing Olympics (8).

Sports have been recognized as an essential sector in China (9). The Chinese sports business began 40 years ago and is still considered a developing sector. The Chinese government has taken several steps to improve sports. These include putting a lot of money into sports development, encouraging more people to play sports, and putting in place policies and programs to find and train young talent. In 1998, when the Chinese sports business started, the Chinese government established a hierarchical sports system, the General Administration of Sport (GAS), which is responsible for all sports activity. In China, the undertaken of the equestrian sports are related to the Olympic games and traditional cultural competitions, such as ethnical equestrian sports like speed horse racing in Inner Mongolia (10).

Due to the continued growth of the global horse industry, which was led by developed Western countries, and the decline of traditional horse industries (agriculture, transportation, and the military), a new modern horse industry has been created (11). This industry is based on sports, leisure, and product consumption, and it connects the primary, secondary, and tertiary sectors (12). An industrial chain was also made to deal with the change in how horses were used in society. Even though it is less developed than in the Western countries, China's horse industry chain includes: breeding horses, training horses, giving horses shots, horse trading, and making horse equipment. While China's horse industry chain is far from flawless, it is on the road to improvement. The growth of the Western horse industry can teach China a lot about how to build equestrian and horse businesses (13).

Compared to the 1977 horse stock, when China's horse stock was the world's largest at 11.45 million, the national horse stock reached 3.671 million in 2019, accounting for 6% of the world's total stock and ranking fifth (14). But now, compared with other countries like Germany, China does not have the same advantages as before. German has led to the growth of a sizeable equestrian industry, which has created 300,000 jobs (15). This starkly contrasts with China's current equestrian industry.

China's horse industry has moved into a new phase. The government has seen that horseback riding could benefit the economy, especially regarding tourism and the export of horses to Europe. China's governments realized the new development concept of building and systematically promoting "human-centered, human-horse integration" in equestrianism (16). Because of this, the government has helped the sport grow by funding training centers and giving tax breaks to businesses in the equestrian industry chain (17).

There are also some challenges. Many individuals, especially those in rural regions, lack access to horses and training facilities. The high expense of engaging in equestrian activities is another

obstacle restricting the sport's accessibility. There are also animal welfare issues, notably around the usage of horses in sports.

This paper aims to comprehensively explore the evolution of China's equestrianism "policy," highlight current challenges, and provide insightful commentary in the discussion section. The structure of the paper is as follows: the first section provides a concise overview of the existing literature on Chinese sports policy; the second section outline the methods used for the analysis; the third presents the development of equestrianism policy and regulation, which categorized into three phases: the budding phase (1978–2004), the preparation phase (2005–2012), and the development phase (2013–2022). Finally, the discussion section critically assesses the findings, pinpointing key problems and challenges of Chinese equestrianism.

Chinese sports system review

China's sports policy in various areas hasn't evolved in line with recent changes and trends. Li et al. focused primarily on the recent evolution of equestrianism in China (18). We used Figure 1 to make a simple explanation.

Despite the invaluable insights from past studies, there hasn't been a systematic examination of the evolution of China's equestrian policies over time. This paper aims to address this gap by analyzing primary documentary sources.

Methods

This study employs a qualitative analysis of Whitmore and Knaff's 5-step method of China's equestrian policies and regulations documents spanning from 1978 to 2022 (19). When policies are viewed as "a collection of processes that occur in sequence" which "reflect past, present, and future discussions," policy papers can be perceived as "a specific point in the materialization of the policy process intended to represent or enact power and change (20)." China has a consistent history of "documentary politics," meaning the use of policy documents to structure national matters (21). Policy documents, which include decisions, directives, opinions, rules, notices, and explanations issued by the National People's Congress, the Central Committee of the Communist Party of China (CPC), the State Council, and other state organizations, carry legal weight (22). These policies might signify the central government's overarching policy goals or specify governance mechanisms (23).

The equestrian industry policy encompasses a set of policies introduced by federal, provincial, and municipal governments to actively engage in the equestrian industry and associated economic activities. These regulations aim to manage the equestrian market's expansion, allocate resources efficiently, foster the growth of the equestrian industry, and expediently transition China's conventional horse industry into a contemporary equestrian sector. Given the unique nature of equestrian sports, they cannot be isolated from the broader equestrian industry. Equestrian athletes need training, and horses necessitate a market. Without a market, horse breeding promotion becomes challenging, and the assurance of producing high-quality, competitive horses dwindles. These aspects encompass a myriad of elements and touch on countless

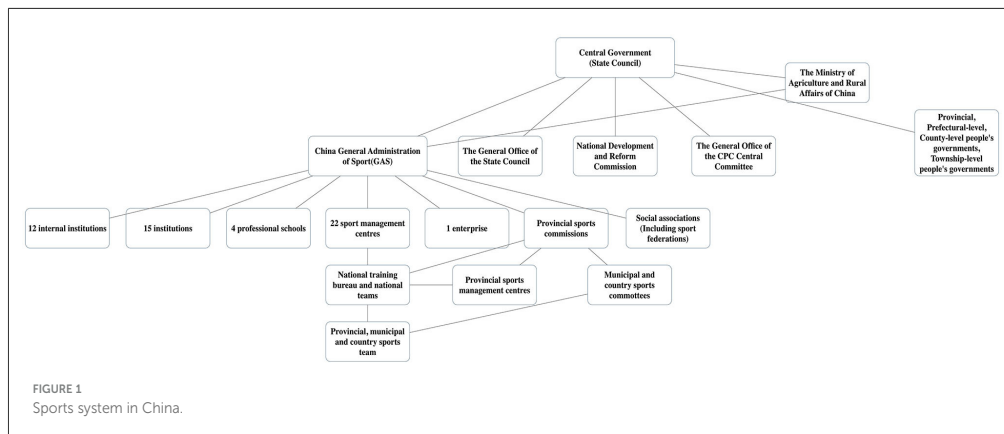


FIGURE 1 Sports system in China.

TABLE 1 The research sources detail.

Category	Resources
Government	The Government of Xinjiang Uygur Autonomous Region of China The Government of Inner Mongolia Autonomous Region of China Department of Agriculture and Animal Husbandry of Inner Mongolia Autonomous Region of China The General Office of the CPC Central Committee and the General Office of the State Council Hulunbuir Municipal Government The Ministry of Agriculture and Rural Affairs of China, General Administration of Sport General Administration of Sport Jimnai County People's Government General Office of the State Council
Sports association	China equestrian association
Academic	China Hownet Web of Science EBSCO databases Related publications, including policies, sports, and history
Semi-official media	News media Organization Souhu news; Sina news Equestrian Online (25)

facets of decision-making, debate, and evolution in daily sporting activities, making their presence ubiquitous (24).

More specifically, our methodology involves qualitative documentary analysis. Four primary sources contributed to our material compilation: (1) Official websites and internal documents from the GAS of China, The Ministry of Agriculture and Rural Affairs of China, provincial sports policies, and Chinese sports federations. We also sourced relevant content from the China Hownet, Web of Science, and EBSCO databases; (2) Pertinent papers from Chinese administrative and commercial entities; (3) Insights into the ramifications of sports industry policies, gleaned from Chinese business unit websites; and (4) semi-official resources

(from media and organizations) such as Sina News and Equestrian Online. Table 1 delineates these data sources.

All policy documents underwent a two-step selection procedure. Initially, we utilized search engines and databases to probe for terms like “马术/equestrian sports,” “马产业/horse industry,” and “马/horse” within the aforementioned resources. This search was complemented by a literature review on equestrianism and China’s horse industry to unearth additional relevant policies. We then filtered out content unrelated to equestrian sports and horse industry policy, such as articles on horse science and equine medicine. All chosen documents span from 1978 to 2022.

For analysis, we employed the Nvivo 20 software on all full-text documents in Chinese. Our approach began with open coding, succeeded by clustering and categorization. Using Nvivo’s word frequency tool, we categorized the primary verbs in each document, as illustrated in Figure 2, presented in Chinese. Initial coding helped segregate the documents into three distinct epochs. We then chronologically arranged the data and grouped it into three pivotal horse-related policy development phases based on timeline milestones. Following this, we embarked on a categorization phase, structuring thematic concepts rooted in relevance to comprehensively grasp the nuances of China’s policy during various stages. This information was synthesized to produce an interpretive overview that encapsulated the findings of our study.

All original documents were in Chinese, and the team handled translations into English. English references from government websites, press releases, and scholarly articles were utilized to authenticate these translations. For certain terms, Chinese pinyin was favored over English translations to better convey indigenous concepts.

Chinese equestrian policies development process

Policy trajectory analysis shows how equestrian sports and horse-related businesses have grown in China over the last 50 years. Changes take place in three phases: during the budding phase



(1978–2004), Chinese policy mainly focused on horse industry research, transitioning from “establishments” to “implementation of plans;” the preparation phase (2005–2012) implied a shift from actively “joining” international equestrian competitions to “hosting” international equestrian competitions, attracting more riders to compete in China, strengthening exchanges among riders, promoting technical improvement, and club development; the development phase (2013–2022) involved developing policies that would “promote” and “plan” for better growth in the future. Table 2 provides an overview of the Chinese equestrianism development process, including the critical policies introduced at each stage and the timeline.

The budding phase from “establish” to “implement:” 1978–2004

During this time, all directions for development were uncertain, and some projects would be stopped if they did not work out as planned. Horse racing was one of these projects to be discussed and “implemented” (44). According to Nvivo’s policy classification, the most important keywords in this budding stage were “established,” “implemented,” “unplanned,” “stop,” and “try” (45). As no appropriate growth plan was ‘established,’ we defined this period as the first budding phase.

At the Third Plenary Session of the 11th Central Committee of the Communist Party of China, held in 1978, it was clear that the socialization of sports became the primary purpose of sports development policy (46). The CEA was “established” in 1979, which we regarded as the beginning of the equestrian industry. This also indicated that Team China was preparing to join equestrian competitions.

Horse racing had been a part of the horse business since ancient China (47). With political supervision and pressing economic benefits, commercial horse racing was carried out in Shenzhen, Guangzhou, and other coastal cities. However, there were many problems, and the relevant government departments tried to stop it several times (48). Until 2002, five ministries and commissions, including the Ministry of Public Security, the Ministry of Supervision, the State Administration for Industry and Commerce, the GAS, and the National Tourism Administration, jointly issued a document stating that the operation of horse racing activities with gambling was strictly prohibited (49). In the middle of the nineteenth century, Chinese sociologists, historians, and folklorists studied traditional Chinese horse racing (50). Yet, no researcher paid attention to the sports aspect or considered how to continue using the facilities to support the horse business. The equestrian business was neither investigated nor taken seriously at that time.

Authorizing the sports lottery was “implemented” in China’s sports history in 1986 (51). However, horse racing was not mentioned since it was not legally permitted in China. Administrative methods no longer governed horse racing. According to unofficial statistics (from website news), China’s sports sector generated 1.6 billion RMB in income from 1978 to 1992. The money generated by the sports system accounted for less than one-tenth of the total sports input in 1992 (52).

At that time, there was no precise definition of the sports industry. Also, China’s equestrian industry was mainly “unplanned.” The origin of the modern equestrian industry in mainland China can be traced back to the early 1990’s when the state allowed some economically developed regions to “try” and set the modern equestrian industry (53). In those days, contemporary equestrianism was mainly a spectator sport, and equestrian show jumping was primarily an entertainment and performance show.

Overall, there was no coordinated application of horse industry policies during this period. As a result, the equestrian industry stagnated.

Preparation phase-“join,” “hold,” and “first:” 2005–2012

After establishing a development direction in the first phase, the objectives became clearer as equestrian and other horse-related industries developed. The keywords for this stage are “join,” “hold,” and “first.” The direct testimony lays a solid foundation for future development; therefore, we consider this stage a preparation phase. Governments planned to introduce associated policies to improve it gradually. The key achievement was that the “first” Chinese judges qualified to “join” the FEI in 2005. This helped establish regulation and teaching methods in equestrianism, laying the foundation for the future development of China’s equestrian industry.

The 2008 Beijing Olympic Games marked a significant milestone in elevating equestrianism to a new level. During these Games, China had the opportunity to showcase itself and, for the “first” time, Team China “joined” equestrian competitions. At that time, the location of the equestrian competition was moved to

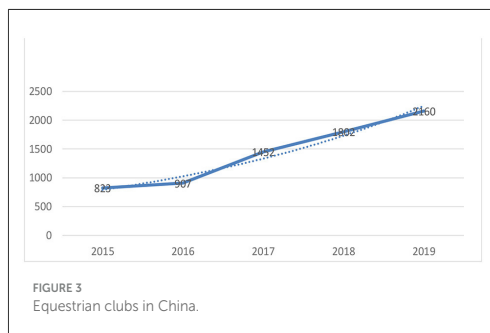
TABLE 2 Evolution of equestrianism development in China.

Stage	Date	Event	Main contents
Initial phase (1978–2004)	1978	Third Plenary Session of the 11th Central Committee of the Communist Party of China held in 1978	Sports socialization became the primary purpose of sports development policy.
	1979	Chinese Equestrian Association was established	The start of the transition to modern horse competition.
	1982	Join FEI	Officially became a member of the FEI.
	1986	Sports lottery (26)	Authorization
	1992	Notice on Resolutely Stopping Horse Racing Betting and Other Activities of Gambling Nature	Stop Horse Racing
	1999	Several Opinions on Promoting the Construction and Development of Hainan International Tourism Island	Stop Horse Racing
Preparation phase (2005–2012)	2005	Chinese judge in FEI	Qualification to register with the FEI.
	2008	Beijing Olympic Games	The Chinese equestrian team competed in the Olympics for the first time.
	2010	The first executive meeting to consider the adoption, effective 1 May 2010	Animal epidemic prevention conditions.
	2011	The Bird's Nest hosted the International Equestrian Masters event	The first time a commercial equestrian event entered China
	2012	Held the first junior equestrian championship	
Development phase (2013–2022)	2014	N0.46 expanded the sports industry market (27)	2025 sports industry program objectives.
	2015	No. 85 (28)	Expand market-oriented service supply service industry and sports industry.
	2016	National Fitness Plan (2016–2020) (29)	2020 national fitness objectives.
	2016	No. 77 (30)	Solves the problem of sports occupation in No. 46.
	2016	Guiding Opinions of the General Office of the People's Government of Xinjiang Uygur Autonomous Region on Accelerating the Development of the Modern Horse Industry (31)	Providing horse related employment opportunities.
	2017	Several Opinions of the People's Government of Inner Mongolia Autonomous Region on Promoting the Development of Modern Horse Industry (32)	Preserving and improving horse breeding.
	2018	Implementation Program of Key Projects for the Development of Modern Horse Industry (33)	Investment in equine development.
	2018	Guiding Opinions on Supporting Hainan's Comprehensively Deepening Reform and Opening-up (34)	Urge Hainan to promote horse racing sports and encourage the study of competitive sports lotteries and significant international event lotteries.
	2018	Implementation Plan for the Construction of an International Tourism Consumption Center in Hainan Province (35)	Promote the evolution of horse racing.
	2019	Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area (36)	Support the development of equestrian industry.
	2020	Hulunbair City Modern Horse Industry Development Plan (2019–2025) (37)	Support the development of equestrian industry.
	2020	National Horse Industry Development Plan (2020–2025) (38)	2025 Plan for the Equine Industry to Achieve Relevant Targets
	2021	National Fitness Plan (2021–2025) (39)	Development of sports
2021	Development Plan of Modern Horse Industry in Altai Region (40)	Support the development of equestrian industry.	

(Continued)

TABLE 2 (Continued)

Stage	Date	Event	Main contents
	2021	Letter from the State Office [2021] No. 79 (41)	In 2025, Hong Kong, Macau, and Guangdong will jointly organize the 15th National Games.
	2021	Measures for the Administration of Registration and Training Assessment of Equestrian Coaches in China (42)	Classification of Coaches' Levels.
	2021	"Letter on the Reply to the Proposal No. 3627 (No. 326 for Medical and Physical Education) of the Fourth Session of the Thirteenth National Committee of the Chinese People's Political Consultative Conference_State Sports General Administration" (17)	Suggestions on establishing a Chinese equestrian system; promoting the balanced development of equestrian events and further promoting horse training events; equestrians into campus; strengthening international exchanges and introducing professional talents; clarifying the land used for equestrian sports and standardizing the approval process
	2022	China Equestrian Association Rider Grading Rulebook (43)	Specific requirements for graded testing of riders' ratings.



Hong Kong, prompting many discussions (54). Hong Kong had better conditions and more experience organizing international horse events. In contrast, Beijing lacked the necessary facilities and experience. After much deliberation, it was decided on 8 July 2005 that Hong Kong would co-host the 29th Beijing Olympic Equestrian Events.

One notable event in 2008 was the change of nationality of Huatian Alex to Chinese. Huatian is the first rider to represent China in the Olympic equestrian eventing event (55). This marked the "first" time the Chinese equestrian team competed in the Olympic Games. In total, six riders competed in dressage, showjumping, and eventing. Of the six Chinese riders who "joined" the Olympics, only Hua Tian ranked 25th in the FEI, highlighting a considerable gap between Chinese equestrians and the international level (56).

The 2008 Beijing Olympics boosted the sports industry, with many individuals taking interest and "joining" equestrian sports. After the Games, show jumping, dressage, and eventing saw better development in China, as they were listed in the Olympic program. The Olympic Games played a pivotal role in promoting the development of equestrian sports in China. In 2008, there were fewer than 100 horse clubs in China. However, from 2015, the number increased dramatically from 823 to 2,160 [see Figure 3 (18)].

With the development of the equestrian sport, some essential documents about horses were also issued. According to the Ministry of Agriculture, "the first executive meeting to consider the adoption, effective 1 May 2010," was held on 4 January 2010 (57). This provides the "first" adequate logistical and political support for developing equestrian sports and clarifies the inspection criteria for companies that operate horse activity areas.

After the 2008 Beijing Olympic Games, the Bird's Nest "held" the International Equestrian Masters event for the "first" time in 2011 (58). This indicated that high-level international equestrian events for Chinese riders would be introduced, allowing more riders to "join," compete, and interact with international riders. In 2012, China "held" its first junior equestrian championship, spurring an equestrian trend among youth and children. With an increasing number of equestrian show jumping competitions for various levels and age groups since 2008, including the introduction of world-level 2-star to 5-star events in China and youth events, the equestrian industry market began to boom.

Development phase "plan," "improve," and "promote:" 2013–2022

In this development phase, the attributes of China's equestrian industry became clear and well-defined, and the country officially entered the development phase. The policy's keyword phrases were "plan," "improve," and "promote." The primary focus of the policy was on rapid development. Several equestrian industry-related policies were released. Objectively speaking, these policies, to a certain extent, fostered the healthy development of the equestrian industry and laid the foundation for its subsequent growth. The equestrian industry policies at this stage could be divided into the following categories: approaches that establish the positioning of equestrianism; guidelines for developing equestrianism in relation to the reform of Chinese sports; and policies concerning equestrianism or other related horse fields.

The release of Document "No. 46" in October 2014 was a significant step forward for the growth of the equestrian industry (59). The primary goal of Document "No. 46" was to

support the growth of China's sports industry. The 2015 State Council Document No. 85, "Guiding Opinions on Accelerating the Development of the Consumer Service Industry and Promoting the Upgrading of Consumption Structure," provided further instructions for developing the sports service industry and promoting the upgrade of the consumption structure (28). The release of "No. 46" set off a surge in investment in China's sports industry, which was already on the rise. The most notable aspect of this document was its alignment with national strategy. However, some of the challenges outlined in "No. 46" are difficult to address; the primary reason being that the lack of sports venues is an issue that spans a scope beyond the jurisdiction of the sports sector.

In 2015, the "Central Committee of the Communist Party of China on the formulation of the thirteenth 5-year plan for national economic and social development" put forward the following statement: "to strengthen the construction of ecological civilization, adhere to green development, form a new pattern of modernization, foster the harmonious development of man and nature, and promote the harmonious coexistence of man and nature (60)." According to this policy, equestrianism would be suitable and in line with these objectives. The utilization of horses in different activities, including equestrian sports and recreational riding, may be regarded as a form of environmentally conscious interaction. For example, horse riding can facilitate the exploration of natural landscapes in a low-impact manner, encourage the participation in outdoor recreation, and cultivate a communion between humans and the environment. Furthermore, equestrianism has the potential to boost rural development and safeguard traditional practices, which is consistent with the overall objectives of the 5-year plan's modernization pattern. More importantly, this approach has the potential to incorporate sustainable practices and traditional cultural elements into the development agenda, thereby contributing to a symbiotic connection between humanity and the environment.

Benefiting from the popularity of sporting events such as the Tokyo Olympics and the Shanxi National Games, equestrianism gradually transitioned from being an aristocratic sport to a more widespread discipline. Consequently, equestrian clubs have proliferated in the country. *Horsemanship Magazine China*, the leading publication for the equestrian industry in China, indicates that the country has grown from 907 horse farms in 2016 to 2,107 in 2020, with a 5-year growth rate of 57%.

Also on the rise were equestrian enthusiasts, whose numbers surged from about 100,000 to a million in just a few years. Active equestrian members accounted for 52% of the total (61). In 2011, there were only about 10 stores throughout the country, with the industry's annual sales around 5 million RMB. By contrast, in 2017, the number of tack stores had grown to 50, and the annual sales had expanded to 300 million RMB (62). According to the 2017 China Equestrian Market Development Status Report, the average sales of equestrian clubs nationwide reached 6.37 million yuan in 2017 (61). With 1,452 clubs in the country, the total sales of equestrian clubs nationwide amounted to 9.24924 billion RMB in that year (63). The popularity of equestrian sports in China has surged from 2013 to 2022.

Since 2015, policies on developing equestrian sports have been actively formulated from the central to local levels. In 2016, the

TABLE 3 FEI official data about Chinese members.

FEI official group		Number	
Judge		8	
FEI permitted treating veterinarian		18	
Trainer		185	
Owner		262	
Athlete	Female	396	1,175
	Male	908	

*Data from *Equestrian Magazine* (69).

state council released the "National Fitness Plan (2016–2020)," which designated equestrianism as a sport to be "actively cultivated" (29). That same year, marking the second anniversary of the "No. 46" release, the General Office of the State Council introduced the "Guiding Opinions on Accelerating the Development of the Fitness and Leisure Industry" ("No. 77"), projecting a full scale of 3 trillion RMB in the sports market (30). The goal was to shift sports activities away from urban centers, to prevent congestion on urban land, while "strongly advocating" for the development of high-value industries such as ice and snow sports, outdoor mountain sports, equestrianism, golf, and others (64). Xinjiang, Inner Mongolia, and other provinces and autonomous regions with strong ties to the horse industry also issued specific policies, solidifying the establishment of equestrian clubs, horse breeding farms, and other related industry chains (28, 65).

The Outline of the Guangdong-Hong Kong-Macao Greater Bay Area Development Plan, unveiled in February 2019, emphasized "promoting" the growth of equestrian sports and associated industries. It also sought to enhance cooperation between Hong Kong and the Mainland in the inspection, quarantine, and customs clearance processes for horses, forage, and feed, as well as veterinary drugs, biological products, and other inbound and outbound items (36). Later that year, on August 2nd, the CEA announced the "Measures for the Classification of Equestrian Coaches (Draft for Comments)" and the "Implementation Rules for the Management Measures for Equestrian Coaches (Draft for Comments) (66)."

Due to a lack of relevant regulations in the budding stages, even though equestrianism "developed rapidly," some equestrian clubs (especially the newly established ones) had to lower their standards because of the difficulty in finding professional coaches. Riders without coaching certificates or young pastoral teenagers were trained briefly before teaching club members how to ride (67).

Human safety concerns also hindered the healthy growth of equestrian sports. It wasn't until August 2019 that the CEA implemented regulations stipulating an age requirement of 18 for equestrian coaches. While the qualifications for equestrian coaches were categorized as A-level, Class B, Class C, Class D, and Class E, there were no specifics about how to obtain these certificates or the assessment criteria for each level (68).

From FEI² (Fédération Équestre Internationale) public database in Table 3, it's evident that Chinese riders have become

2 An international organization that showcases prominent global riders and offers members opportunities in global competitions.

more prevalent in recent years. A total of 1,175 Chinese riders have already competed. Male riders remain the majority. Furthermore, the number of veterinarians has grown due to FEI initiatives; from 2019 to 2022, the Chinese FEI approved an increase of 18 treating veterinarians.

On 29 August 2020, the Ministry of Agriculture and Rural Affairs and the State General Administration of Sports jointly published the “National Horse Industry Development Plan (2020–2025)” on the Ministry of Agriculture and Rural Affairs website (38). The document outlined the present state of China’s horse industry, which highlighted that regions are relatively concentrated and the total breeding volume is substantial. It also notes continuous improvements in the breeding system for fine breeds and the growth in the equestrian sports industry. In addition, horse tourism is becoming more prevalent, and international exchanges are intensifying. Additionally, the document identified several challenges that development encounters, including inadequate resources for equine breeds, antiquated production methods, fragile connections in the industrial chain, as well as defective markets.

This was the first “development plan” issued for the horse industry, covering various horse-related sports, including equestrian, polo, and others. It was projected that by 2025, the framework and system for developing China’s modern horse industry would be initially established, and the integrated development pattern of the first, second, and third industrial sectors would also begin to take shape. What’s more, this document establishes specific objectives: establishing an effective breeding system; enhancing the equestrian activities system; fostering collaborative industry development; and collaborating with educational institutions to cultivate the necessary talent pool for the horse industry.

The plan introduced the “horse industry +” development model, aiming to “promote” the conversion of resource advantages such as horse breeds, equestrian sports, and cultural tourism into economic benefits. It emphasized “increasing” the proportion of the output value of the horse industry and fostering a synergistic development mechanism. Specifically, the importance of equestrian development was highlighted, suggesting that equestrianism is crucial for the evolution of the modern horse industry.

To establish China’s equestrian club rating system and “promote” the standardization, uniqueness, and branding of equestrian clubs, there was an emphasis on developing several flagship equestrian clubs. The plan combined equestrian “promotion,” popularization, and “improvement,” leveraging the platform created in preparation for the Olympics to robustly publicize and advance equestrianism. Concurrently, they sought to “promote” the enhancement of the competitive standard of equestrian sports by organizing a series of competitions and training events and hosting various equestrian activities to “boost” the general public’s awareness of equestrian sports.

The “Letter of the General Office of the State Council on the Consent of Guangdong, Hong Kong, and Macao to Host the 15th National Games in 2025,” released in September 2021, granted Guangdong, Hong Kong, and Macao the rights to host the 15th National Games in 2025. Intriguingly, this coincided with the year when the Hong Kong Jockey Club’s Guangzhou Conghua Racecourse was slated to host a regular event. Institutions of higher

education, equestrian clubs, and equestrian events all contributed to the thriving equestrian industry. The CEA established the “Equestrian Big Data Platform” to cater to the equestrian industry chain. Equestrian enthusiasts, riders, and industry professionals could readily access information on the platform concerning equestrian exams, training, and registered events. Details about the horses, event results, any riders injuries, and point rankings were also transparently displayed, making it conducive for horse trading.

The combined effect of several policies and incentives for the equestrian industry played a pivotal role in solidifying the foundation of the equestrian industry, enhancing the standard system, augmenting support, promoting equestrianism, and educating a broader audience about this venerable sport.

The existing issues and recommendations

As the results have shown, horse-related policies and regulations in China’s equestrian sports and horse industry have progressively developed and improved over the past five decades. Nonetheless, some problems still linger in China’s Equestrian Industry Policies and Regulations:

First, there’s the inadequate interrelatedness of policies. The objectives of the policy were vague and ambiguous, and the sectors they applied to were not interconnected. This led to policies that, while beneficial, were challenging to implement. For instance, the General Office of the Ministry of Agriculture and Rural Affairs and the General Office of the State Sports General Administration introduced the “National Horse Industry Development Plan (2020–2025).” It sets out the framework for the short-term development of China’s modern horse industry. The development environment of China’s modern horse industry tends to be stable. Although the policies in related fields are scattered, promoting the development of China’s modern horse industry more scientifically and systematically is necessary. For this document to be effectively utilized and realized, more collaboration between various fields is necessary.

Second, the policies lack continuity and stability. The policies are broad, with ambiguous requirements and an absence of a system of sub-goals that align with the overarching plan; there’s no differentiation between short-term and long-term objectives. Some documents span 5 years, while others don’t specify a timeframe. A significant concern is whether solutions crafted to address current challenges will remain relevant in the future. Enhancing the sustainability of sports industry policies is crucial and challenging, but it can’t be achieved immediately and should evolve gradually. Equestrian classes in China remain costly, and reducing their price is an effective method for promoting equestrian sports. Regrettably, no policy or regulation currently addresses this cost concern.

Third, there’s a lack of professional assessment and relevance. The horse industry spans several sectors, and each one is distinct. Broad generalizations could hinder the future development of the entire horse industry. Multiple equestrian education systems exist in China, such as the British education system (BHS), the French system (Galop), and the German system (HCCG). Given these varied teaching methodologies, regulating education

proves challenging. The CEA riders classification encounters similar issues. Publicly available documents indicate that rider examination and certification is the sole unified component. However, there's no documentation outlining a standardized approach for coach training. Since China lacks a unified equestrian teaching methodology, clubs employ diverse training techniques, complicating oversight. The dearth of technical equestrian experts hampers the growth of the domestic horse industry. From veterinarians to horse handlers, coaches, club managers, judges, and professional equestrian competitors, every facet of equestrian sports faces a shortage of seasoned professionals. This deficiency also restricts the development of equestrian sports. Improve equestrian rules and combine them with China's traits to make a teaching system for equestrian sports that fit in with globalization. Strengthen the assessment so that professional equestrian instructors are licensed to work. Cultivate professional athletes and promote the relationship between universities and enterprises.

Fourth, there's insufficient emphasis on horse welfare. The "National Horse Industry Development Plan (2020–2025)" mentions that an international-standard horse welfare system will eventually be established. This implies that, during budding phase, horse welfare wasn't a priority.

With the growth of equestrianism is tied to the number of clubs, and the proliferation of equestrian clubs relates to land policies (61). Equestrian activities require extensive land areas. When it comes to land-use policies, many city guidelines concerning horse farms are ambiguous. Consequently, several equestrian clubs have encountered issues with unauthorized member elections. Local governments should be in charge of ensuring there is enough land for urban planning and big, functional stadiums. This would help solve the problem of sports for everyone. They should be allocated more to commercial and residential sports land. And should give play to regional advantages, promote regional development, and be suitable for developing regional planning and the formation of regionalized management.

The next focus is on creating disease-free zones. Establishing these zones for equestrian events poses challenges. As per the FEI, a disease-free zone is an area exempt from specified equine diseases within a defined period and under controlled conditions (70). Currently, China has only one such zone in Conghua. However, due to substantial investment requirements, most of its usage has been allocated to the Hong Kong International Jockey Club for training purposes. The quarantine processes for participating horses are intricate, with European horses facing particularly stringent regulations. This has resulted in a limited number of high-profile events in China. The equestrian competition venue for the 2022 Hangzhou Asian Games, set to commence construction in April 2020 in Tonglu, Hangzhou, is anticipated to cost 2.5 billion RMB to create a disease-free zone (71). It's uncertain whether this facility will be sustainably operated and managed post-construction. If the pace of equestrian development accelerates and competition intensifies, maintaining horse health and condition may become feasible. Test the necessity of building epidemic-free

zones and plan the follow-up. Considerable investment will be wasted if there is no operation plan for the follow-up site. Rather than constructing it in different zones, we create a single epidemic-free zone and use the same venue for all international equestrian competitions in China.

Conclusions

China's equestrian industry policies have progressed through essentially three phases: the first phase, from 1978 to 2004; the second, preparation phase, from 2005 to 2012; and the third, development phase, from 2013 to 2022.

If China's equestrianism industry wants to develop sustainably, it should try to solve the following issues. First, there's an issue with the policy's relevancy. The objectives of the policy are vague and difficult to understand, and there's a lack of interaction between the sectors they impact; second, the policy is inconsistent and unstable; third, there's a deficiency in professional assessment and relevance; and fourth, the pace of development is unsustainable.

Overall, the sports management system, the government's policy objectives, and the conflicting interests among policy stakeholders complicate the introduction of changes during policy formulation, implementation, and execution.

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5. General Discussion

The primary objective of this doctoral thesis is to advocate for the implementation of policies by the Chinese government that address the evolving role of horses. To systematically organize this section, the approach begins with a comprehensive depiction of the developmental trajectory of horse racing in China, encompassing its characteristics and nature. This analysis is rooted in the relevant historical review of horse racing as presented in first study (Li, López Adán, & de la Rubia, 2022). Subsequently, the findings derived from the second (Li, López Adán, & de la Rubia Rianza, 2022) and third (Li & Sánchez-García, 2024) fourth studies (Li & Sánchez-García, 2023) are intricately synthesized, interconnecting the progress of both human and horse sports. Then based on the existing data analysis, the current development status of horse sports in China is described. The tentative explanation of the future trajectory of the horse industry is then provided, accompanied by recommendations for development. Figure 5 illustrates the cohesive structure of the entire research endeavor.

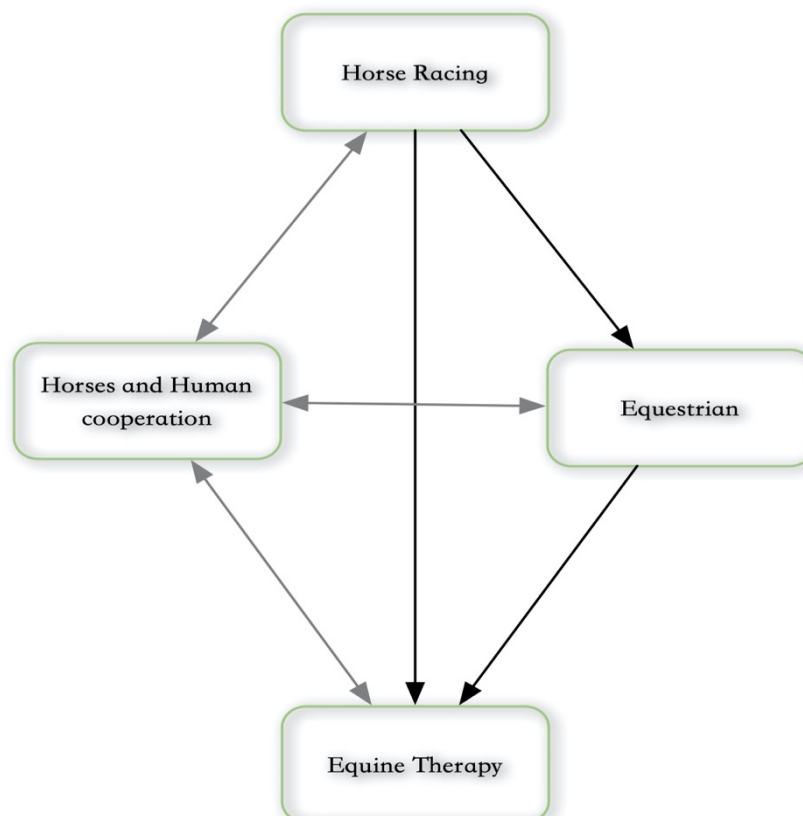


Figure 5 Based on different types of interaction models in human and horse movements. Regarding the sport of horse racing, it is heartening to observe that the sector is making strides towards improvement with the modification of the laws governing

speed horse racing in China. Both the establishment of the China Equestrian Association Speedway Committee and the National Horse sector Development Plan (2020-2025) are important moves towards the development of the sector in the longer term (*Ministry of Agriculture and Rural Affairs and the State General Administration of Sports Explain the “National Horse Industry Development Plan (2020-2025)”_Chinese Government Website*, n.d.). It sets out a framework for the short-term development of China's modern horse industry. The development environment of China's modern horse industry is becoming stable. Although policies in related fields are relatively scattered, it is necessary to promote the development of China's modern horse industry more scientifically and systematically. An easily overlooked point is also mentioned in this document, horse welfare. The document states: Horse welfare will eventually establish a horse welfare system that is in line with international standards. This means that, at this stage, the welfare of the horse is not a priority.

It is also interesting to note that the business is investigating the prospect of integrating numerous sporting events and sports with lotteries in order to improve its appeal. The horse industry is one of the few in the world that can combine the primary, secondary, and tertiary sectors, with a lengthy industrial chain and high volume, therefore increasing domestic demand and creating jobs for a substantial number of employees (“Three-Sector Model,” 2021). It may still take some time for the industry to fully develop and overcome problems such as sketching out alternative business models and connecting horse racing with the tourism industry.

It is remarkable to observe the rapid expansion of China's equestrian sector over the past four decades. This growth has made equestrian activities in China increasingly popular. Its rising popularity can be attributed, in part, to the formation of organizations and competitions like as the China Equestrian Tour, the Beijing Bird's Nest Equestrian Masters, and the China National Equestrian Team.

However, persistent challenges such as quarantine restrictions, high sports participation costs, and regional resource disparities continue to hinder progress. There are challenges in establishing these equestrian event areas. According to the FEI, a disease-free area is an area that is free from specific equine diseases for a defined period of time and under controlled conditions. Currently, there is only one such park in Conghua in China. However, due to the large investment demand, most of the uses have been allocated to the Hong Kong International Jockey Club for training purposes. The quarantine procedures for participating horses are

complex, with European horses facing particularly strict regulations. This has resulted in a limited number of high-profile events taking place in China. The industry's ability to address these issues and advance in the future will be closely monitored. Horse racing and equestrian sports hold significant potential for contributing to the expansion of sports in China. The industry heavily relies on imports, importing approximately 2,000 horses annually, underscoring the imperative to bolster domestic horse breeding (*Chinese Equestrian Association*, n.d.). It also has high risk of breeding industry, in nineteenth-century sport, horse breeding also served as a means of entry into the upper echelons of British society; however, it was a high-risk endeavor (Moore-Colyer & Simpson, 2004). Despite hurdles in education and policy development, equestrian sports are capturing public attention, offering opportunities for diverse growth through integration with various industries.

A comparison between China and Germany's equestrian landscapes reveals substantial differences in horse numbers and industry scale, indicating considerable growth potential in the Chinese market (Zahlen und Fakten aus Pferdesport und Pferdezucht | FN, n.d.). Endeavors to enhance horse breeding and reduce import dependency align with government initiatives to promote the equestrian industry (A Guide through the Amazing German Horse World, n.d.). However, strategic development is crucial in addressing breeding challenges and high costs.

The equestrian sector in China is both socially and economically significant, with an annual output value of about 10 billion yuan (2019 China Equestrian Industry Development Status Survey Report - Baidu.Com, n.d.). Despite the absence of a systematic teaching component in the Chinese Equestrian Association, industry popularity continues to ascend. As more people show interest in the activity, the government's emphasis on equestrian sports in the national economy indicates an upward trend (*Guiding Opinions of the General Office of the State Council on Accelerating the Development of the Fitness and Leisure Industry_Government Information Disclosure Column*, n.d.). Because of a number of government-sponsored initiatives and the steady improvement of equestrian clubs, equipment, and competitions over the last five years, the Chinese horse business is now proven (*Ministry of Agriculture and Rural Affairs and the State General Administration of Sports Explain the "National Horse Industry Development Plan (2020-2025)"_Chinese Government Website*, n.d.). From its presence in three Olympic Games in 2008 to the more recent breakthrough, Chinese equestrianism has been

supported at the national and industrial level, as well as by numerous equestrian organizations (2019 China Equestrian Industry Development Status Survey Report - Baidu.Com, n.d.).

In addition to the developments in horse racing and equestrian sports, it's worth noting the growing recognition of equine therapy in China. Equine therapy, also known as horse-assisted therapy or hippotherapy, involves interactions between individuals and horses to promote emotional, physical, and mental well-being (Shelef et al., 2019). This therapeutic approach has gained popularity globally for its positive impact on individuals with various conditions, including developmental disorders, physical disabilities, and mental health issues.

The connection between humans and horses spans the entirety of human history (Lanning & Krenek, 2013). From the early years of domesticating horses, the emotional bond between humans and these magnificent creatures has evolved continuously. Starting from primitive hunting to the organization of structured events, and now extending to equine therapy studied across various academic disciplines, horses have consistently played a vital role in human life. Despite the ongoing transformation of the entire horse industry to adapt to contemporary society, the collaboration between humans and horses has endured.

The future of equine therapy holds great promise (Goodson et al., 2011). With society's increasing focus on overall health, equine therapy, as a holistic treatment approach, is poised to expand into fields such as medicine and psychology. As the demand for integrative healing methods continues to grow, horses may emerge as a more widely accessible therapeutic resource. Their acute perceptiveness and unique understanding of human emotions give horses a distinct advantage in addressing mental health issues.

Anticipated developments include more personalized treatment plans, tailoring horse interactions to individual needs and objectives. This personalized therapeutic approach is expected to play a more substantial role in addressing a diverse range of mental health issues, facilitating recovery, and improving interpersonal relationships.

The evolution of equine therapy will lead to its emergence as a comprehensive, personalized, and scientifically grounded field of healing. The ongoing collaboration between humans and horses is set to contribute positively to human health and well-being, offering society a distinctive and effective treatment alternative. Equine therapy in China has seen increased attention as part of the

broader expansion of the equestrian industry. The unique bond between humans and horses has been leveraged to enhance the quality of life for individuals facing challenges. In recent years, there has been a rise in the establishment of equine-assisted therapy centers and programs across the country.

Research has shown that interactions with horses can have profound effects on individuals, helping them develop communication skills, build trust, and improve emotional regulation (Bachi et al., 2012; Ferruolo, 2016; Sareen et al., 2007; Steele et al., 2018). In the context of China's equestrian industry, the integration of equine therapy not only contributes to the diversification of services but also aligns with the broader societal trend of emphasizing well-being and holistic health.

As with other aspects of the equestrian industry, the adoption of equine therapy faces challenges, including the need for standardized practices, qualified professionals, and public awareness. However, the potential benefits for individuals and communities are substantial, making equine therapy an exciting and promising area within China's expanding equestrian landscape.

Furthermore, the intersection of equestrian sports, horse racing, and equine therapy underscores the multifaceted nature of the industry. The integration of various aspects, from competitive events to therapeutic interventions, not only enhances the overall appeal of equestrian activities but also contributes to the sector's economic and social impact.

In conclusion, the equestrian industry in China is undergoing significant growth and diversification, with developments in horse racing, equestrian sports, and the emerging field of equine therapy. While challenges persist, the commitment to improvement through organizations like the China Equestrian Association and the National Horse Sector Development Plan reflects a positive trajectory for the industry. As China continues to invest in the development of its equestrian sector, the potential for economic growth, cultural enrichment, and social well-being remains promising.

5.1. Horse racing in China

China has been actively endeavouring to liberalise the horse racing industry. Nevertheless, underlying the current phenomenon of "horse racing" is the anticipation of establishing a "horse racing lottery". An outcome of the surge in horse racing is a rise in tax revenue, as almost 30% of the worldwide economy is linked to industries associated with horses (Roult et al., 2017).

Commercial equine racing has a significant role in fostering economic expansion, as the predominant portion of horse racing lottery wagers and generated revenue is directed towards global markets. The remaining earnings are used towards tax payments, commissions to lottery agencies, rebates to event operators, and charitable expenses. Internationally, the returns on horse racing lottery tickets typically surpass 70%, with Japan and the United States exhibiting returns ranging from 75% to 80%. Notably, Hong Kong and mainland China boast the highest returns, reaching an impressive 82.5% (An Economic Analysis of the Funding of Horseracing, n.d.). Based on the data from 2010, it can be observed that horse racing in Canada generates an estimated yearly ancillary revenue of around \$5.7 billion (Vel Evans, n.d.).

Horse racing betting serves as a significant revenue stream for the horse racing industry. Furthermore, the National Jockey Club has also established ancillary endeavours such as tourism, lodging, and catering that are centred around horse racing. Despite the absence of official legalisation of horse racing in China, the vast size of China's horse industry suggests that this market holds immense potential.

In the late 20th century, horse racing at the Guangzhou Racecourse in China managed to draw over 20,000 spectators and achieved a record-breaking investment amount of over 12 million yuan in a single day, thanks to a small-scale pilot programme. Over the course of its seven-year existence, the Guangzhou Racecourse successfully achieved economic equilibrium while also covering the costs of two national speed horse racing events, operating the Chinese Equestrian Training Base, and sponsoring events such as the World Weightlifting Championships, the Seventh National Games, and the Ethnic Minority Games. Additionally, the racecourse generously donated over 300 million yuan to the China Charity Federation for disaster relief, education, poverty alleviation, and other initiatives in different provinces and cities (Yang Lin & Ling Quanling, n.d.). The club has created more than 4700 jobs (Guangzhou Racecourse - Continental Racing Network, n.d.). The club has generated over 4,700 employment opportunities and has emerged as a significant tourism destination in Guangzhou. The Guangzhou Jockey Club has significantly contributed to the economic development and public welfare of Guangdong Province over the course of seven years. It has played a pivotal role in promoting the growth of several industries, including tourism and transportation. Following the prohibition of horse racing in 2001, the Guangzhou Racecourse underwent closure, thereby revealing significant issues including the misallocation of public funds and instances of bribery.

Consequently, the club incurred a substantial financial loss of 600 million yuan over a span of six years (Crazy “Horse Racing” - Hot News - China Association of Social, Economic and Cultural Exchanges, n.d.).

The analysis of data from a sample of more than 14,000 participants in the 2015 Household, Income, and Labour Dynamics in Australia Survey was done by the Australian Gambling Research Centre (AGRC). The study revealed that around 975,000 individuals engage in regular wagering on horse or dog events (Carroll, 2017). According to Andrew Armstrong, a researcher at the AGRC, the prevalence of problem gambling among individuals who gamble on a regular basis is from 16% to 17% (“Fancy a Punt?,” 2017) ”.

Horse racing has become a deeply rooted art form in Hong Kong. The act of putting bets on horse races has gained popularity due to its comparatively low cost, which has facilitated its accessibility to a wider range of individuals. The horse lottery, like to other sports lotteries, has become a fundamental component of the general populace's leisure pursuits. Nevertheless, this ease of access also gives rise to addiction, since certain individuals become deeply engaged in gambling. The generation of revenue from these activities has the potential to foster an impression of fairness, notwithstanding the inherent risk of manipulation or corruption associated with gambling (Cohen, 2014).

The potential consequences of legalising horse racing betting in mainland China might be significant, considering the country's massive population of 1.402 billion. The proliferation of remote betting platforms has the potential to amplify the prevalence of gambling-related problems. The proliferation of webcasting, coupled with the impact of internet bloggers and celebrity culture, has facilitated the accessibility of gambling to younger demographics, perhaps exacerbating challenges in addressing gambling-related issues.

The establishment of a world-class horse industry has been a longstanding objective of the Greater Bay Area, a shared vision between the government and the Hong Kong Jockey Club. The primary elements of this plan encompass the Conghua Racecourse situated in Guangzhou and the forthcoming Tonglu Racecourse, both strategically intended to accommodate significant global horse racing competitions. The reason for this emphasis on Conghua is the scarcity of pandemic-free areas in mainland China. The Hong Kong Jockey Club has successfully obtained a durable lease for the Conghua Racecourse, resulting in a

notable pattern wherein a greater number of young horses undergo training at this venue prior to their departure for racing in Hong Kong.

Conghua plays a crucial role in establishing a top-tier horse industry in the Greater Bay Area, since it is the sole mainland training facility and horse farm that adheres to international standards. The government and the Jockey Club intend to utilise Conghua's property in order to further this objective, with the aim of establishing recurring horse racing events at the location by the year 2025.

Nevertheless, there are lingering inquiries over the feasibility of horse racing lotteries, which may have implications for racecourses' capacity to organise competitive events including betting. Moreover, a significant proportion of racetracks in mainland China are situated in cities of first or second tier, characterised by well-developed urban infrastructure and convenient transportation accessibility. The concentration of these cities in the geographic area has the potential to worsen the disparities in development throughout the province, as these cities, due to their well-established capacities, become central hubs for the gambling and horse racing sectors.

Notwithstanding these obstacles, the equine racing sector in mainland China is still in its nascent phase, exhibiting substantial prospects for expansion owing to the nation's substantial populace. Nevertheless, it is imperative to tackle concerns such as limitations on betting and the possibility of uneven progress in order to fully harness this potential. Notwithstanding these obstacles, the government and the Jockey Club are enacting strategies to foster the expansion of the sector. The Greater Bay Area has the potential to develop a horse industry that is comparable to the most exceptional in the world.

Contemporary equestrian competitions depend on outstanding horse breeds, wherein distinct breeds are well-suited for different types of races. The breeding industry maintains significant connections with equestrian sports, placing a great emphasis on the athletic dimension of all its activities. Despite initial expectations that the 2008 Beijing Olympics would serve as a catalyst for the growth of equestrian sports in China, the event ultimately fell short of generating the anticipated momentum. Furthermore, the lack of consistent horse racing has impeded the progress of equestrian activities within the nation. Horse racing offers a wide platform for competitive events, enabling horses who have demonstrated a commendable history, as acknowledged by the International Thoroughbred Registration Committee, to produce offspring of high quality

through breeding. Internationally, horses are required to possess a pedigree record with precise and comprehensive data regarding their progenitors and females. Traditionally, China did not possess pedigree certificates for domestic horses, which had a negative effect on the standard of breeding and led to a decrease in horse prices.

Horse breeding plays a key role in the horse racing sector, but, the breeding standards in mainland China fall short of global benchmarks. In order to organise horse racing events, it is important to have a steady provision of horses for competition, as well as adequate training, welfare, and medical attention. Furthermore, it is imperative to build a robust legal and legislative framework in order to facilitate a thorough "industrial upgrade" that fosters principles of fairness, equity, and openness across the sector.

The lack of supportive legislative norms and laws poses a significant barrier to the development of horse racing in China. In order to accomplish its 2025 goals, this industry, which is governed by policies, necessitates a strong and solid base. Until that point, the precise results cannot be quantified. Current debates have revolved on the inauguration of the Wuhan racing circuit, indicating the necessity of a time of observation in order to evaluate its influence on the wider industry. Essentially, a meticulously organised and legally sanctioned equine sector is vital for the triumph of horse racing competitions in China. The expansion of the sector is contingent upon the resolution of deficiencies in breeding, training, and regulatory frameworks, while concurrently ensuring that forthcoming policies prioritise principles of equity and openness.

The organisation and management of horse racing exhibit notable variances among countries and regions, owing to disparities in historical, cultural, socio-political, and economic factors. Although the modern horse racing framework shares many similarities, these differences contribute to differing behaviours and operational approaches in various areas.

Horse racing and horse lotteries in the United States are regulated by state-specific joint-venture organisations, which enable transactions between different states. A committee of racing deacons, typically selected by the government or other public authorities, supervises the officiating responsibilities at each race. Their role is to guarantee openness, justice, and equality in horse racing operations. Typically, deacon boards consist of state government personnel who lack affiliations with the racecourse, so mitigating the potential for conflicts of interest.

The United States' commercial horse racing sector is characterised by a substantial betting rebate rate and a comparatively low tax rate, which have played a significant role in fostering the industry's expansion and solidifying the country's position as a frontrunner in this domain. However, it is imperative to establish specific criteria, guidelines, and protocols in order to uphold equitable competition and mitigate potential complications. This methodical approach aids in resolving issues before they worsen.

Rules and regulations serve as a unifying element among all nations and territories that host equestrian competitions. These principles guarantee the correct and equitable conduct of races, ensuring transparency in betting amounts and race awards. Regularly documenting the movement of funds throughout the industry is an additional measure towards ensuring responsibility and transparency.

In conclusion, it is imperative to uphold the integrity of horse racing by adhering to norms and laws, notwithstanding the diverse approaches employed in its organisation and management. Although horse racing may vary in its approach across different countries or regions, the fundamental principles of fair play and openness are essential for maintaining the integrity and long-term viability of the sport.

The absence of pertinent legislation and regulations in mainland China renders the acquisition of a gambling operating licence, like to the one now held by the Hong Kong Jockey Club, improbable. At now, the Chinese government exclusively permits competitive events in the realm of equestrian sports that do not have gaming aspects. As a result, non-gaming horse racing events are organised in locations such as Wuhan as a component of club-related affairs.

According to the source ("Speed Races," 2021) speed racing events are now held at the National Games and the Civil Games, in addition to the China Open Speed Racing Championship, which is a recurring fixture for horse racing competitions. Nevertheless, by examining the historical progression of equestrian sports in different nations, it becomes evident that the amalgamation of equestrianism and horse racing is vital for achieving success. The "Outline" proposes fostering a balanced and varied growth of Macau's economy, while establishing a foundation for cultural interchange that emphasises Chinese culture and the harmonious coexistence of diverse cultures. The primary objective of this programme is to mitigate obstacles that exist between the mainland and Macau (Liang Shu, n.d.).

The subject of horse lotteries has gained prominence subsequent to China's implementation of lottery reforms and the subsequent liberalisation of its sports betting lotteries. Betting lotteries play a crucial role in horse racing industries in nations where horse racing takes place, serving as a vital component that contributes to their overall success. The effective management of lottery distribution and prevention of associated risks remains a significant gap, despite the passage of the Lottery Administration Regulations by the State Council during its 58th executive meeting in 2009. These regulations provide guidelines for lottery sales, market regulation, risk control, and the utilisation of lottery winnings. Additionally, the Rules for Implementation of the Lottery Administration Regulations were released in 2012, which include specific regulations for lottery public welfare funds.

Notwithstanding these endeavours, there is a need for enhancement in the regulation of lottery distribution and risk mitigation in mainland China. It is crucial to address these gaps in order to uphold a transparent and equitable lottery system that promotes the growth of horse racing and equestrian sports in the area.

In terms of China's currently existing rules regarding the horse racing industry, in 2021, two management measures were drawn up by the China Equestrian Association: the "China Horse Racing Association Speed Horse Racing Management Measures" (for trial implementation) and the "China Horse Racing Association Speed Horse Racing Points Measures" (for trial implementation), they are not currently enforced, due to the public safety accident that occurred on 22 May 2021, in the Baiyin Yellow River Stone Forest 100 km off-road race in Gansu Province, resulting in multiple casualties, speed horse racing and other related races are currently at a standstill ("Yellow River Stone Forest 100 km cross-country race accident," 2022). From how horse racing is conducted, including the creation of rules, a team of judges, a team of jockeys, and a team of trainers, until the China Equestrian Association introduced its management methods, speed horse racing in China had different regulations. There was no unified scoring system, no national standard of race management, and no third-party race management monitoring body. When capital poured into the horse racing industry, the first thing that came to mind was simply to construct horse farms.

Regarding the horse racing lottery distribution, it is difficult to adjust to traditional values and break through the last line of policy. As a matter of tradition, Chinese culture has viewed horse racing as solely a "gambling" activity, and there has been resistance to betting on horse racing in terms of public opinion. In this

part, we discuss the horse lottery a combination of horse racing and a lottery. First, there are references to gambling in Chinese texts and laws, as well as a definition of gambling in the book “Dictionary” of Chinese texts: Gambling is a form of improper entertainment. Various forms of card fighting, throwing the general, and other forms of wagering with property exist.

Under section 303 of the Criminal Law of the People’s Republic of China, gambling is defined as the following: “Whoever engages in gambling for profit and gathers a crowd or gambles for business shall be sentenced to a term of imprisonment not exceeding three years, detention, or control, together with a fine (Zhou Aiguang, 1999).” Horse racing is included in the definition of gambling, as is the purchase of lottery tickets. This leaves the public with the impression that the horse racing lottery is the same as gambling, making it extremely difficult for the public to accept the opening of horse racing. It is not gambling as long as the state conducts the lottery to raise public funds for the benefit of welfare, sports, and other social and public causes, whether it is a football-based or a horse race-based lottery. But horse racing attempts have never been covered by the legal framework, despite being controlled by market forces and explored through initiatives contributing to economic and social development. The betting industry is undergoing rapid expansion, which will quickly stimulate the speculative (gambling) mindsets of the public, especially among the youth, and may have adverse social consequences. The second point is that horse racing requires venue facilities, race management, betting operation systems, and technical conditions. The existing racecourses in China, except for the Guangzhou racecourse, have better hardware and software conditions. In contrast, the other regions do not have these conditions and are not approved by the State Council, and the right to host the event lies with the local government, businesses, or even individuals.

On the other hand, the bottom line of “gambling” needs to be considered. As a result of local experimentation, sensitivity is reduced, but the authorities cannot effectively supervise the process. Therefore, the experiment of this horse lottery can only be stopped once the uncontrollable “gambling” takes place.

5.2. The development status of equestrian sports in China

What is the significance of horse breeding in the context of equestrian sports? In the majority of nations, horse racing serves as the primary catalyst for horse breeding. However, in China, where the practice of horse racing is prohibited, the

breeding industry predominantly relies on equestrian activities. At present, China possesses a mere 15 prevalent indigenous breeds, of which ten are confronted with the imminent threat of extinction (Stanek, 2021). In order to engage in equestrian activities, it becomes imperative to import horses, as native breeds frequently exhibit deficiencies in the essential attributes required for competitive equestrian sports.

An emergent industry is developing that includes elementary, secondary, and tertiary sectors, with a focus on leisure riding. Nevertheless, this necessitates a substantial quantity of superior sport horses, a requirement that cannot be met by China's indigenous breeds. The field of Chinese horse breeding is currently in its nascent phase, frequently yielding horses that exhibit insufficient levels of speed, character, and power.

Several nations have implemented uniform horse registration systems, rigorous stallion screening, and breed enhancement initiatives, which have played a significant role in their achievements in equestrian sports. According to a survey conducted by the Chinese Equestrian Association, China has imported approximately 2000 horses per year from 2015 to the present. The primary sources of these horses are the Netherlands, New Zealand, Australia, France, and the United States. The process of importing horses incurs significant expenses, ranging from hundreds of thousands to millions of yuan each horse, inclusive of supplementary charges for transportation, inspection, and quarantine. The annual expenditure on horse imports amounts to more over one billion yuan (Equestrian Magazine - Equestrian Online, n.d.), highlighting the need to strengthen China's horse breeding industry.

In terms of social engagement, there has been a rise in the number of equestrian clubs and the prevalence of equestrian instruction among teenagers, with over one million individuals actively participating in the sport. Nevertheless, the pedagogical approaches tend to lack systematicity, frequently depending on outside sourced educational frameworks. China boasts a substantial number of national equestrian competitions, along with 1000 provincial events and 2000 equestrian clubs. However, it is worth noting that there exists a dearth of comprehensive educational initiatives and rider certification programmes (2019 China Equestrian Industry Development Status Survey Report - Baidu.Com, n.d.).

Germany's equestrian industry has experienced significant growth, with the number of horses doubling in the last four decades. The region supports a

workforce of more than 300,000 individuals engaged in equestrian pursuits, with a market capitalization of EUR 6.7 billion (Zahlen und Fakten aus Pferdesport und Pferdezucht | FN, n.d.).

The equestrian industry in China is seeing growth; yet, it has obstacles including a substantial decrease in the overall horse population, which has declined from 11 million in the 1980s to approximately 3.6 million at present. Additionally, the industry lacks adequate backing from the horse racing sector. The aforementioned factors have resulted in elevated expenses for equestrian sports and a subdued rate of horse breeding, impeding the overall progress of the equine sector (“Three-Sector Model,” 2021).

The practice of horse breeding is accompanied with inherent hazards, such as significant financial commitments and potential delays in achieving profits. During the 19th century, the act of breeding sport horses was regarded as a venture with significant risks, frequently regarded as a pastime rather than a commercial enterprise. Breeding for sport was regarded as a patriotic obligation for English gentlemen (Moore-Colyer & Simpson, 2004). Insufficient backing from the horse racing industry in China exacerbates these hazards, resulting in elevated expenses for sport horses and equestrian pursuits.

In response to these obstacles, the Chinese government intends to enhance horse breeding, with the aim of reducing the expenses associated with equestrian sports and enticing a larger number of participants. Three phases have marked the evolution of equestrian policies and regulations in China: the budding phase (1978–2004), the preparation phase (2005–2012), and the development phase (2013–2022).

During this period, there was a lack of clarity in all development directions, and projects were at risk of being terminated if they did not fulfil expectations. The topic of horse racing was one of the topics that were deliberated over and potentially put into action during this particular phase (1978 - The Complete Record of China’s Reform and Opening-up (1978-2018)_China’s Reform and Opening-up Database, n.d.). According to Nvivo's policy classification, the key themes in this early phase were 'established', 'implemented', 'unplanned', 'stop', and 'try' (Classification Sheets, n.d.). Since there was no concrete development plan, this period is defined as the first budding phase.

The primary objective of sports development policy was the socialisation of sports during the Third Plenary Session of the 11th Central Committee of the Communist

Party of China in 1978 (One of the 30 Years of Reform and Opening up Report: Great Reform, Great Opening, Great Development, n.d.). The establishment of the China Equestrian Association (CEA) in 1979 signified the inception of the equestrian sector in China. Additionally, this observation suggests that Team China was making preparations to engage in equestrian sports. Horse racing has been part of the horse business since ancient China (Ethnic Equestrian, n.d.). Commercial horse racing, driven by political oversight and economic interests, was conducted in Shenzhen, Guangzhou, and other coastal cities. However, it faced numerous issues, leading government departments to attempt to halt it multiple times (Li, López Adán, & de la Rubia, 2022). In 2002, five ministries and commissions, including the Ministry of Public Security, the Ministry of Supervision, the State Administration for Industry and Commerce, the GAS, and the National Tourism Administration, issued a joint statement strictly prohibiting gambling-based horse racing activities (Illegal Horse Betting in the Mainland Is Rampant. Five Ministries and Commissions Have Jointly Banned Gambling Horse Racing, n.d.).

In the mid-19th century, Chinese sociologists, historians, and folklorists studied traditional Chinese horse racing (Xia Hongwu, Li Pinlin, 2012). However, horse racing was excluded due to its illegal status. Administrative methods no longer governed horse racing. Unofficial statistics suggest that China's sports sector generated 1.6 billion RMB in revenue from 1978 to 1992, with the sports system's share accounting for less than one-tenth of the total sports expenditure in 1992 (Zhan, 2016).

During this time, there was no clear definition of the sports industry, and China's equestrian industry was mostly unplanned. The origin of the modern equestrian industry in mainland China can be traced back to the early 1990s, when the state allowed certain economically developed regions to 'try' and set the foundations for a modern equestrian industry (Feng Wang & Lianghui Liu, 2016). During that period, the predominant nature of contemporary equestrianism revolved around its role as a spectator sport, wherein equestrian show jumping served as a kind of entertainment and performance.

During this period, there was a lack of synchronised execution of horse industry policies, resulting in a state of inactivity in the equestrian sector.

Following the initial phase of creating a development strategy, the objectives grew more obvious as the equestrian and other horse-related sectors underwent further

development. The designated terms for this particular phase encompass 'join,' 'hold,' and 'first.' The direct testimony establishes a strong basis for future progress; so, we regard this step as a preparatory phase. Governments have formulated plans to implement corresponding policies aimed at steadily enhancing it. The primary accomplishment was the successful qualification of the first Chinese judges to become members of the FEI in 2005. This initiative facilitated the establishment of regulatory frameworks and instructional approaches within the field of equestrianism, so setting the groundwork for the subsequent advancement of China's equestrian sector.

The Beijing Olympic Games of 2008 represented a significant milestone in enhancing the prominence of equestrianism within the Chinese context. China had the opportunity to showcase its strengths at these Games, and Team China made its debut in equestrian disciplines. Nevertheless, as a result of the inadequate infrastructure and limited expertise in Beijing, the equestrian competitions were relocated to Hong Kong, a city renowned for its extensive experience in hosting international horse activities. Following thorough deliberations, a consensus was reached on July 8, 2005, determining that Hong Kong will serve as a co-host for the 29th Beijing Olympic Equestrian Events (IOC, n.d.).

A significant event that took place in 2008 involved Huatian Alex's decision to alter his nationality in order to represent China in the realm of equestrian eventing. In the Olympic equestrian eventing competition, Huatian achieved the distinction of becoming the inaugural Chinese rider to participate (Alex Hua Tian (10019301), n.d.). This event signified the inaugural participation of the Chinese equestrian team at the Olympic Games. In the 2008 Olympics, a total of six Chinese riders were involved in the events of dressage, show jumping, and eventing. Among the aforementioned competitors, Hua Tian attained the 25th position in the FEI, thereby highlighting the notable disparity between Chinese equestrians and their global counterparts (Sohu 2008 Olympic Games, n.d.).

The Beijing Olympics of 2008 exerted a significant influence on the sports sector, resulting in heightened public engagement with equestrian sports. China had enhanced growth in show jumping, dressage, and eventing after the Games, as these activities were included in the Olympic programme. Equestrian sports in China were significantly influenced by the Olympic Games. In 2008, the number of horse clubs in China was less than 100, but it significantly increased from 823 in 2015 to 2160 (Li, López Adán, & de la Rubia Rianza, 2022).

The emergence of equestrian activities led to the introduction of significant horse-related documents. The Ministry of Agriculture convened the initial executive meeting on 4 January 2010 to deliberate on the implementation of the "Measures for the Examination of Animal Epidemic Prevention Conditions." The measures came into force on 1 May 2010. This initiative offered initial logistical and political backing for the equestrian sector, while also establishing a set of inspection standards for enterprises engaged in horse activity activities (Measures for the Examination of Animal Epidemic Prevention Conditions (Order No. 7 [2010] of the Ministry of Agriculture), n.d.).

Following the conclusion of the 2008 Beijing Olympic Games, the inaugural International Equestrian Masters event took place at the Bird's Nest stadium in 2011 (Beijing National Stadium, n.d.). This development marked the initiation of elite international equestrian competitions for Chinese riders, hence facilitating increased participation, competition, and engagement between Chinese riders and their foreign counterparts. China hosted its inaugural junior equestrian championship in 2012, sparking a surge of interest in equestrian sports among young people and children. Since 2008, there has been a rise in the number of equestrian show jumping contests across different levels and age categories. This includes the introduction of international events in China, ranging from 2-star to 5-star. The recent increase in equestrian contests has resulted in a significant growth in the market for the equestrian sector.

During this developmental stage, the characteristics of China's equestrian industry were elucidated and precisely delineated, leading to the official initiation of the development phase in the country. The policy incorporated the search terms "plan," "improve," and "promote" as key phrases. The fundamental emphasis of the policy revolved around expeditious progress. Multiple policies pertaining to the equestrian sector were issued. From an objective standpoint, it can be argued that these rules have played a role in facilitating the robust advancement of the equestrian sector and establishing the groundwork for its continued expansion. The current state of equestrian industry policies can be categorised into three main areas: strategies that determine the positioning of equestrianism, directives for the advancement of equestrianism in conjunction with the reform of Chinese sports, and policies pertaining to equestrianism and other horse-related domains.

The issuance of Document "No. 46" in October 2014 marked a notable advancement in the development of the equestrian sector (Several Opinions of the State Council on Accelerating the Development of the Sports Industry and Promoting Sports

Consumption, n.d.). Document "No. 46" aimed to facilitate the expansion of China's sports business. The 2015 State Council Document No. 85, titled "Guiding Opinions on Accelerating the Development of the Consumer Service Industry and Promoting the Upgrading of Consumption Structure," offered additional guidance on the advancement of the sports service industry and the enhancement of the consumption structure (Guiding Opinions of the General Office of the State Council on Accelerating the Development of the Consumer Service Industry and Promoting the Upgrade of Consumption Structure (Guo Ban Fa [2015] No. 85)_Government Information Disclosure Column, n.d.). The debut of "No. 46" triggered a significant increase in investment in China's burgeoning sports industry. The document's most prominent feature was its congruence with the national policy. Nevertheless, several obstacles mentioned in "No. 46" pose significant difficulties to resolve, mostly due to the fact that the scarcity of sports facilities extends beyond the purview of the sports industry.

In 2015, the Central Committee of the Communist Party of China, responsible for formulating the thirteenth five-year plan for national economic and social development, issued the following declaration: "To enhance the establishment of ecological civilization, adhere to green development, establish a novel framework of modernization, facilitate the harmonious development of humanity and the environment, and advocate for the harmonious coexistence of humanity and the environment" (Proposal of the Central Committee of the Communist Party of China on Formulating the Fourteenth Five-Year Plan for National Economic and Social Development and the Visionary Goals for 2035_Central Government Documents_ Chinese Government Website, n.d.)." Based on this policy, equestrianism would be appropriate and consistent with these goals. The incorporation of equines in many pursuits, such as equestrian sports and leisurely riding, might be considered a manifestation of ecologically responsible engagement. One illustrative instance involves the utilisation of horse riding as a means to promote the study of natural landscapes in a manner that minimises effect, fosters engagement in outdoor recreational activities, and nurtures a sense of connection between individuals and the natural environment. Moreover, equestrianism possesses the capacity to enhance rural development and preserve traditional customs, aligning with the overarching goals of the modernization pattern outlined in the five-year plan. Significantly, this strategy has the capacity to integrate sustainable practices and traditional cultural aspects into the development agenda,

thus fostering a mutually beneficial relationship between humans and the environment.

Equestrianism had a steady shift from being a sport primarily associated with the aristocracy to being a more widely practiced activity, thanks to the success of sports events like the Tokyo Olympics and the Shanxi National Games. Hence, there has been a significant increase in the number of equestrian clubs in the country. According to *Horsemanship Magazine China*, the prominent journal for the equestrian sector in China, the number of horse farms in the country has increased from 907 in 2016 to 2,107 in 2020, representing a growth rate of 57% over a period of five years.

The number of equestrian aficionados experienced a significant increase, rising from approximately 100,000 to one million over a short span of time. 52% of the total consisted of active equestrian members (Equestrian Online, n.d.). In 2011, the number of stores nationwide was approximately ten, and the industry's yearly revenues amounted to over 5 million RMB. In 2017, there was a notable increase in the number of tack stores, reaching a total of 50, accompanied by a substantial growth in annual sales, amounting to 300 million RMB (Sina News, 2018). In 2017, the China Equestrian Market Development Status Report reported that the mean sales of equestrian clubs across the country amounted to 6.37 million yuan (Equestrian Online, n.d.), throughout that year, the total sales of equestrian clubs countrywide reached 9.24924 billion RMB, with a total of 1,452 clubs throughout the country (Horsemanship magazine, 2017). Equestrian sports in China have had a significant increase in popularity between 2013 and 2022.

Since 2015, there has been a proactive formulation of policies aimed at the development of equestrian sports at both the central and municipal levels. The "National Fitness Plan (2016-2020)" was published by the state council in 2016, wherein equestrianism was officially recognised as a sport that should be actively nurtured (The State Council on the Issuance of the National Fitness Program (2016-2020) Notice_ Government Information Disclosure Column, n.d., pp. 2016–2020). In the same year, the General Office of the State Council released the "Guiding Opinions on Accelerating the Development of the Fitness and Leisure Industry" ("No. 77"), which marked the second anniversary of the "No. 46" release. This document projected a total market value of 3 trillion RMB for the sports industry (Guiding Opinions of the General Office of the State Council on Accelerating the Development of the Fitness and Leisure Industry_ Government Information Disclosure Column, n.d.). The objective was to relocate sports

activities from urban areas in order to alleviate congestion on urban land, while actively promoting the growth of lucrative sectors such as ice and snow sports, outdoor mountain sports, equestrianism, golf, and other similar pursuits (General Office of the State Council on Speeding up the Development of Fitness and Leisure Industry guidance_ Government Information Open Column, n.d.). In addition to establishing equestrian clubs, horse breeding farms, and other industry chains, Xinjiang, Inner Mongolia, and other provinces and autonomous areas with significant connections to the horse industry have implemented targeted measures (Guiding Opinions of the General Office of the State Council on Accelerating the Development of the Consumer Service Industry and Promoting the Upgrade of Consumption Structure (Guo Ban Fa [2015] No. 85)_Government Information Disclosure Column, n.d.; Xinjiang Uygur Autonomous Region Issued Opinions on Accelerating the High-Quality Development of the Horse Industry to Create a Strong Modern Horse Industry Area in the Country, n.d.).

The Guangdong-Hong Kong-Macao Greater Bay Area Development Plan, which was introduced in February 2019, placed significant emphasis on the promotion of equestrian sports and related sectors. Additionally, the objective was to strengthen collaboration between Hong Kong and the Mainland in the areas of inspection, quarantine, and customs clearance procedures pertaining to horses, forage, feed, veterinary medications, biological products, and other things that are imported and exported (Outline of the Development Plan of Guangdong, Hong Kong and Macao Bay Area, n.d.). In the subsequent year, namely on August 2nd, the Chinese Equestrian Association (CEA) made public the "Measures for the Classification of Equestrian Coaches (Draft for Comments)" and the "Implementation Rules for the Management Measures for Equestrian Coaches (Draft for Comments) (Chinese Equestrian Association, n.d.). "

The rapid development of equestrianism was hindered by a dearth of pertinent laws during its early stages. Consequently, several equestrian clubs, particularly those that were recently created, were compelled to reduce their standards due to the challenges associated with recruiting qualified coaches. Prior to instructing club members on riding, riders lacking coaching qualifications or young pastoral youths underwent a brief training (Chinese Equestrian Association: Without Relevant Qualification Certificates, It Is Forbidden to Teach Riding lessons_ Training, n.d.).

The healthy development of equestrian activities was impeded by worries over human safety. The implementation of laws by the CEA mandating an age

minimum of 18 for equestrian coaches did not occur until August 2019. The qualifications for equestrian coaches were classified into A-level, Class B, Class C, Class D, and Class E. However, there was a lack of information regarding the process of obtaining these certificates or the precise assessment requirements for each level (China Equestrian Association: No Relevant Qualification Certificates, Riding Lessons Are prohibited_ Training, n.d.).

Based on statistics obtained from the public database of FEI (Fédération Équestre Internationale), it is apparent that there has been an increase in the representation of Chinese riders in recent years. A cumulative count of 1,175 Chinese riders has participated in the competition. The majority of riders are male. In addition, the quantity of veterinarians has expanded as a result of FEI activities. Between 2019 and 2022, the Chinese FEI sanctioned a rise of 18 clinicians.

The "National Horse Industry Development Plan (2020-2025)" was jointly announced on the Ministry of Agriculture and Rural Affairs website on 29 August 2020, in collaboration with the State General Administration of Sports (National Horse Industry Development Plan (2020-2025)", n.d.). This article provides an overview of the present condition of China's equine business, with a particular focus on the concentration of regions, significant breeding volume, and the ongoing enhancement of the quality horse breeding system. Additionally, the report acknowledged the expansion of the equestrian sports sector, the rising prevalence of horse tourism, and the heightened frequency of international interactions. Nevertheless, the document also underscored a number of obstacles, including insufficient resources for horse breeds, antiquated production techniques, vulnerable connections within the industrial network, and defective market structures.

This document served as the inaugural blueprint for the horse business, encompassing a range of horse-related activities such as equestrianism and polo. The objective of the plan was to create the foundational structure for China's contemporary equine industry by 2025, promoting a cohesive growth model that integrates the primary, secondary, and tertiary industrial sectors. The organisation established precise objectives, such as implementing an effective breeding system, improving equestrian activities, fostering cooperative industry growth, and partnering with educational institutions to cultivate the necessary expertise for the horse business.

The proposed strategy implemented the "horse industry +" development framework in order to capitalise on resource advantages such as horse breeds, equestrian sports, and cultural tourism, with the aim of generating economic advantages. The proposal aimed to enhance the productivity of the horse industry and promote a cooperative approach to its development. The significance of equestrian activities in the advancement of the contemporary horse business has been recognised.

The concept prioritised the development of flagship equestrian clubs in order to build a ranking system and encourage standardisation, distinctiveness, and branding. The objective was to integrate the promotion, popularisation, and enhancement of equestrian activities by utilising the platform developed in anticipation of the Olympic Games. Additionally, it advocated for the implementation of contests, training events, and various other activities aimed at enhancing public consciousness regarding equestrian sports.

In September 2021, the "Letter of the General Office of the State Council on the Consent of Guangdong, Hong Kong, and Macao to Host the 15th National Games in 2025" officially conferred the privilege of hosting the 15th National Games in 2025 upon Guangdong, Hong Kong, and Macao. This occurred concurrently with the Hong Kong Jockey Club's intention to organise periodic events at its Guangzhou Conghua Racecourse commencing in 2025. During this period, the rise of the equestrian sector was facilitated by various entities, including higher education institutions, equestrian clubs, and equestrian events. The "Equestrian Big Data Platform" was built by the CEA with the purpose of catering to the equestrian industry by providing enthusiasts, riders, and professionals with convenient access to information pertaining to equestrian exams, training programmes, and registered events. The portal facilitated transparency in horse trading by providing comprehensive information on horses, event outcomes, rider injuries, and point standings.

The integration of these laws and incentives was important in establishing the equestrian business, enhancing standard processes, bolstering support, fostering equestrianism, and elevating public consciousness of this conventional activity.

5.3. The possible existing issues and recommendations in horse industry

In the last fifty years, there has been a consistent enhancement in horse-related legislation and regulations within China's equestrian sports and horse sector. Nevertheless, China's equestrian industry policies and regulations continue to face persistent issues that necessitate additional attention and resolution.

An important concern pertains to the absence of interdependence among policies. Frequently, both the objectives and the sectors to which they pertain are ambiguous. This complicates the effective implementation of policies. As an illustration, the "National Horse Industry Development Plan (2020-2025)" establishes the structure for the immediate progress of contemporary equine development in China. However, it does not exhibit a thorough integration of diverse interconnected domains. For this plan to be implemented successfully, greater coordination and cooperation between industries is required.

Within the equestrian industry have a tendency to be inconsistent and unstable, with requirements that are frequently unclear or ambiguous. Certain policies have a five-year validity period, whereas others fail to specify a time limit, thereby creating ambiguity regarding their durability. Concerns are raised regarding the future applicability of solutions to current problems in light of this ambiguity. In China, equestrian classes continue to be prohibitively expensive, and there are no policies in place to resolve this issue in a way that encourages greater participation. It is essential to adopt a more sustainable strategy towards policy continuity in order to guarantee its long-term viability.

The equine sector comprises numerous sub-industries, each characterised by distinct requirements. The application of generalisations may hinder the industry's progress in the long run. China's equestrian education system is distinct from those of France, Germany, and the United Kingdom (BHS), Galop, and HCCG, respectively, which complicates standardisation efforts. A unified examination procedure characterises the Chinese Equestrian Association (CEA) classification system for riders; however, a standardised training approach is not established for coaches. Complicating this lack of consistency is the scarcity of qualified professionals, including veterinarians, equine handlers, coaches, and judges, which hinders the growth of the industry. Potential solutions include the establishment of a teaching system that more closely mirrors Chinese

characteristics, the improvement of equestrian regulations, and the encouragement of collaboration between universities and businesses.

The "National Horse Industry Development Plan (2020-2025)" alludes to the eventual implementation of a horse welfare system that conforms to international standards. This implies that horse welfare may have been undervalued in the past. It is imperative to bridge this divide in order to safeguard the ethical advancement of the industry and maintain public confidence.

Although equestrian organisations necessitate substantial land areas, the lack of clarity in municipal regulations pertaining to horse farms frequently results in unauthorised operations (Equestrian Online, n.d.). The stability of equestrian clubs may be adversely affected, potentially impeding regional planning efforts. In order to foster regional development, it is imperative that local governments designate additional land for commercial and residential sports purposes while ensuring adequate land is available for sports facilities and stadiums.

Disease-free zones for equestrian competitions are difficult and expensive to establish (Biosecurity How To ..., 2021). At present, China possesses a solitary zone of this nature situated in Conghua, which serves as the principal facility for the Hong Kong International Jockey Club. China restricts the number of high-profile events due to stringent quarantine regulations, which are particularly stringent regarding European horses. The estimated cost of the venue for the 2022 Asian Games in Hangzhou is 2.5 billion RMB (City Livestock and Agricultural Development Center Completes Epidemic-Free Zone, n.d.), and its post-construction sustainability is dubious. The establishment of zones free from epidemics requires significant financial investment, which underscores the need for well-defined follow-up strategies to prevent the squandering of resources. One well-maintained, epidemic-free zone could accommodate all international equestrian competitions in China, as opposed to the creation of multiple zones.

Continuity, more comprehensive and integrated policies, a focus on horse welfare and land use, and defined objectives are essential for addressing these challenges. In addition, the equestrian industry requires a more consistent approach to professional development and education in order to assure its continued growth and success.

5.4. The feasibility of developing equine therapy in China

Potential benefits of animal-assisted treatment for wounded warriors participating in an occupational therapy living skills programme have been suggested by preliminary data from the U.S. Army Medical Department. This highlights the importance of conducting further research on the use of Animal-Assisted Therapy (AAT) as an adjunctive treatment for veterans who have been diagnosed with Post-Traumatic Stress Disorder (PTSD) and related traumatic injuries (Gonzales, Florie, Jr et al., 2012).

The current review indicates that subjects showed discernible improvements in PTSD symptoms and a slight reduction in heart rate. Such findings align with established literature that details a multitude of potential physical and psychological advantages associated with animal-assisted interventions.

This systematic review aimed to conduct a critical evaluation of recent articles pertaining to horse therapies for veterans diagnosed with post-traumatic stress disorder (PTSD) within the past five years. Irrespective of the particular equine solution employed, all veterans diagnosed with post-traumatic stress disorder (PTSD) demonstrated positive outcomes.

In China, based on the "Report on the Development of Autistic Children in China", the estimated number of individuals with autism in my country exceeds 10 million, with over 2 million falling within the age range of 0 to 14 years (sina_mobile, 2018). Upon doing an inquiry, it was found that China initiated the use of equine therapy as a means to enhance the behavioural outcomes of children diagnosed with autism in the year 2013. This relates to the improvement of the social, emotional, and physical development of autistic children through interactions with horses.

To advance the research and promotion of equine therapy, Beijing hosted the inaugural "Equine Therapy Forum" in 2016. Foreign and domestic academics and experts convened at the forum to deliberate on the future, implementation, and technological aspects of equine therapy in China. In contrast, advancements in academic research have come to a halt. While equine therapy is progressively garnering interest in China, its growth and progress have been hindered by the absence of comprehensive research and pertinent educational resources.

This may be attributable to the funding, facilities, and expertise necessary to practise hippotherapy. Hippotherapy necessitates venues that are suitable, proficient therapists, and professionally trained horses—components that are not

yet broadly accessible in China. Furthermore, the limited investment in this field by pertinent academic institutions and research organisations has hindered the progress of equine therapy in China.

Therefore, it is necessary to strengthen academic research, provide professional training, establish specialised treatment institutions, and increase public awareness of equine therapy in order to advance its development in China. It is anticipated that China's equine therapy will advance and become more widely utilised in the future as a result of strained international relations and exchanges, as well as by drawing insights from successful foreign practical experiences.

6. Limitations

The four studies regarding the Ph.D. thesis were based on qualitative research for data processing, targeting searches on the development of horse sports in China over time. We gathered the majority of data from the government and big news organizations, and there is a lack of data from prominent equestrian clubs. At present, there are fewer studies related to equestrian sports compared to other types of sports. Because few people have conducted in-depth research on the industry driven by the sport of equestrianism, we hope that this paper provides an overview of the horse industry, and the value of this industry will hopefully draw people's attention, so that more people in the future will pay attention to this modern industry that combines horses and sport. In recent years, as equestrian sports have gradually increased in China, they have also attracted the attention of some researchers.

The limitations regarding the research methodology have the following points: firstly, the human and time costs of the study are relatively high, as data have to be collected through direct observation and document searches. Secondly, the objectivity of the conclusions can be limited by the fact that the collection of data is based on the personal observations of the researcher and at the same time the object under study is a specific sport-related data.

On the other hand, with regard to the data aspects of this PhD thesis, there are also the following limitations : Four primary sources were used to compile the materials. The first category of sources includes official websites and internal papers, such as those maintained by the General Administration of Sport of China, provincial sports policies, and Chinese sports federations. Additionally, materials pertinent to this study were gathered from the China Hownet, web of science, and EBSCO databases. Second, we collected relevant papers from Chinese administrative and commercial organizations. Third, we gathered relating to the consequences of the sports industry's policies records from the Chinese business units' websites. Fourth, we gathered semi-official resources (news media and organizations) like Sina news; Equestrian online.

7. Conclusions

Aligned with the specific objectives and derived from the results obtained in each of the studies forming this doctoral thesis, the following conclusions can be deduced:

- Related to “Examines the challenges faced by horse racing through the lens of historical evolution and current practical development.”

Conclusion: We propose four recommendations to address existing issues: Shaping Horse Culture ; Lottery Law ; Targeted Horse Racing ; Tri-Party Supervision. Through the implementation of these recommendations, we anticipate a transformative journey for the horse racing industry. This evolution aims not only to tackle current challenges but also to shape the sector into a responsible, transparent, and sustainable endeavor. Central to this vision is the prioritization of equine welfare, creating an environment that guarantees a fair and enjoyable experience for all participants.

- Related to “Aims to undertake an in-depth analysis of the current state of China's equestrian industry and evaluate the influence of pertinent legislation on its growth.”

Conclusion: Equestrian sports have the potential to drive the advancement of the Chinese horse industry, which uniquely integrates the first, second, and third industries, presenting considerable growth opportunities. By comprehending and analysing the collated data, equestrian sports can enhance the speed and quality of their development, influenced by well-informed policymaking and a pertinent economic model. Anticipated outcomes include significant development within the broader horse industry in China.

- Related to “Examines the specific details and rationale of equine-assisted therapy and the focus of equine therapy research over the past five years.”

Conclusion: Equine-assisted intervention therapy has demonstrated effectiveness, but additional research is warranted to delve into the specific details and theories associated with such interventions. Moreover, attention should be directed towards ensuring the welfare of the horses engaged in therapy.

- Related to “Aims to provide a concise overview of the government’s policies which growth of equestrian sports in China over the past four decades (since 1978)”.

Conclusion: By 2022, a total of 29 documents sourced from official and semi-official channels had been extracted, categorised, and scrutinised for their records. The primary concern is the utility of the policy, as its objectives are ambiguous and lacking clarity. Furthermore, there is less interaction among the affected locations. Furthermore, the policies exhibit a lack of consistency and stability. Furthermore, there is a lack of professional assessment and relevance. Furthermore, the absence of an industry chain cycle hinders the completion of pre-development preparation. The multifaceted reasons of these challenges encompass the sports management system, the government's policy aspirations, and the clash of interests among policy stakeholders.

8. Future investigation

There is still much to explore regarding human-horse collaboration and its evolution. The study of human-horse cooperation is an intriguing field with significant implications for animal welfare and human history. The relationship between people and horses has been greatly shaped by past reforms and transformations, yet it is becoming clearer that such significant changes may not be necessary for future progress. This PhD thesis, which consists of several publications, aims to set the direction for future studies that go beyond the domain of equestrian sports to provide a more thorough knowledge of the horse business as a whole. The investigation of equine healing in the context of sports and human-horse cooperation is at the heart of this project.

The thesis aims to fill in important knowledge gaps and open up new avenues for study that will contribute significantly to the area.

1. First, study 1 addresses the problem of horse racing in China's mainland and calls for a thorough analysis of past patterns and current legal frameworks. Researchers can obtain important insights into the variables driving the development of the sector by studying the history of horse racing in China and the policies that are in place today. This historical perspective ensures that judgments are based on a detailed understanding of the industry's evolution and offers guidance for future policy-making efforts in addition to providing important background.
2. Study 2 and 4 emphasis moves to the larger subject of equestrianism in China, emphasizing the necessity for more comprehensive research and development strategies. Though most of the work that is being done now is focused on reviewing and discussing national policies meant to encourage the expansion of the business, there is a good chance that further work will be done in areas like staff development and horse training. Through the identification of significant obstacles and prospects in the equine sector, academics can formulate approaches aimed at promoting sustainable expansion and augmenting the sector's overall competitiveness.
3. Thirdly, in study 3 highlights the significance of horse therapy research in China, pointing out the current scarcity of studies and experts in this area. There is still a large gap in scientific knowledge and application of the therapeutic benefits of working with horses, despite this growing awareness. Equine therapy research has

a great deal of potential to grow as China's horse industry develops, providing fresh perspectives on how horses might improve human health and wellbeing.

To sum up, the PhD thesis presented here is an important step forward in improving our knowledge of human-horse cooperation and its wider consequences. This effort aims to improve the welfare of humans and horses by filling important research gaps and suggesting novel directions for future research. It has the potential to influence the direction of the equine industry.

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