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Research on the Impact of the Digital Divide on the Elderly

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Abstract: With the acceleration of global informatization, digital technology has gradually penetrated into various aspects of daily life. However, this change has also brought about a new social inequality phenomenon: the digital divide. The digital divide refers to the gap between different groups in terms of technology access, information acquisition, technology use, and digital literacy, particularly affecting the elderly population. Due to the decline in physiological and cognitive abilities, as well as social environmental factors, the elderly population is often at a disadvantage when facing rapidly developing digital technologies, leading to significant difficulties in accessing, using, and adapting to technology. The digital divide not only limits the elderly from enjoying the convenience brought by digitalization, but may also have negative impacts on their social participation, mental health, and quality of life. This article aims to explore the current situation of the digital divide faced by the elderly population, analyze its various impacts, and propose strategies and policy recommendations to narrow this divide. Research has found that the impact of the digital divide on the physical and mental health of the elderly is negative, and there are significant differences between urban and rural areas. Effectively addressing this issue can improve the quality of life for the elderly and promote the digital inclusive development of society.

1. Introduction

With the acceleration of global informatization, digital technology has gradually penetrated into various aspects of daily life. Especially with the popularization of smart phones, the Internet, social media, electronic payment and other technologies, digitalization has become an irreversible trend in modern society. However, the rapid development of digitization has also brought about a new social inequality - the 'digital divide'. The digital divide refers to the gap between different social groups in terms of technology access, information acquisition, technology use, and digital literacy. This gap is not only reflected in people's different opportunities to access technology, but also in their ability to use these technologies to improve their quality of life. In the study of the social impact of intelligent technology, the digital divide is an unavoidable topic. At the end of the 20th century, the digital divide problem came into people's vision because of the rise of Internet applications. Although researchers have different definitions of this concept, most of these definitions have a common

connotation, that is, the differences between individuals and groups in the adoption and application of information dissemination technologies.[1]

In this context, the elderly population has become a special group in the digital divide. As they grow older, elderly people face multiple challenges such as physical decline, cognitive decline, and lack of social support. The integration and use of digital technology is not an easy task for them. The impact of the digital divide on the elderly population is not limited to their inability to enjoy the convenience brought by digitization, but may also have profound negative effects on their social participation, mental health, economic security, and other aspects. Therefore, studying the digital divide among the elderly population is of great significance for promoting inclusive development in the process of social digitization and safeguarding the basic rights and interests of the elderly. This article aims to explore in depth the difficulties and challenges faced by the elderly population in accessing, using, and adapting to digital technology, analyze the multifaceted impact of the digital divide on their lives, and further propose strategies and policy recommendations to reduce this impact. Research has found that the digital divide has a negative impact on the physical and mental health of the elderly, with a significant impact on their physical and memory health, and its effects exhibit urban-rural heterogeneity. The smaller the digital divide faced by the elderly, the higher their physical and mental health level.[2]

2. Literature review

The concept of digital divide was first proposed by digital experts and sociologists in the United States, and it mainly focuses on the inequality in technology and equipment, Internet connectivity, information access and other aspects. For the elderly population, the definition and manifestation of the digital divide are relatively complex, mainly including the following aspects: firstly, differences in technological access. Due to economic conditions, educational levels, and other reasons, the elderly often lack necessary technological equipment (such as smartphones, computers) and stable network connections. The second obstacle is the use of technology: even with devices and networks, many elderly people lack the skills to effectively use these technological tools, especially complex digital platforms and applications. The third is the gap in information literacy: elderly people face more difficulties in understanding and using information, especially in terms of information filtering, evaluation, and utilization.

Firstly, many studies have shown significant differences in the exposure and application of digital technology among the elderly population. According to research, elderly people often have difficulty mastering complex digital tools and platforms due to physiological decline, cognitive decline, and insufficient technological adaptability. Compared with young people, older people have a lower frequency and proficiency in the use of smart phones, computers, the Internet and other technologies, which not only leads to their disadvantage in obtaining information, participating in social interaction and enjoying digital services, but also aggravates the sense of social isolation.

In addition, the technological barriers faced by the elderly are not only skill based, but also include economic and environmental factors. According to research, elderly people often struggle to purchase or maintain modern equipment due to lower income, lower education levels, and fear of new technologies. At the same time, many elderly people live in remote areas and lack a stable Internet connection, which puts them at a disadvantage when participating in digital services. The barriers to the use of information technology are particularly prominent among the elderly population, especially for those who lack digital literacy and resource support. The exacerbation of the digital divide may further deepen their sense of social exclusion.

The impact of the digital divide on the health and quality of life of the elderly cannot be ignored.

The Internet provides new opportunities for health management, telemedicine and social support, but many older people are unable to take advantage of these services due to the lack of digital skills. For example, the promotion of telemedicine has made medical services more convenient, but for elderly people who are not familiar with digital tools, using online medical platforms has become difficult. In addition, the rise of social networks has also changed the way elderly people interact with family and friends, but they often feel lonely and isolated because they do not know how to use these platforms.

In order to narrow the digital divide, scholars have proposed a series of solutions, including increasing digital training and education for the elderly, improving technological accessibility, and providing technical support services. By enhancing the digital literacy of the elderly and helping them overcome technological barriers, it can effectively improve their quality of life and promote their social participation in summary, the impact of the digital divide on the elderly is multifaceted, involving not only technological mastery but also closely related to economic, social, and health aspects. Narrowing this gap is an important step towards achieving digital inclusivity and social equity, and deserves joint attention and efforts from all sectors.

3. Analysis of the current situation of the digital divide among the elderly population

The digital divide refers to the significant differences in the ability of different groups to access, use, understand, and obtain information technology due to the gap between technology and information. With the advent of the information age, digital technology has profoundly changed the operational modes of various fields in society, but at the same time, different groups also face unequal opportunities when using these technologies. As a special social group, the elderly often find themselves in a relatively disadvantaged position in the face of digital transformation, resulting in a significant digital divide. The digital divide among the elderly is an urgent issue that needs to be addressed in the resonance between digitalization and aging. The objective existence of "digital vulnerability" restricts the accessibility of digital resources for the elderly population, making it difficult for them to integrate into the digital society due to systemic social exclusion.[3]

In the practice of digital access, the development of the Internet, the popularity of smart phones and the rise of platforms have laid the material foundation for short video access; In digital usage practice, short videos provide a platform for information acquisition and self-expression, and promote negotiation of intimate relationships;[4] In recent years, although the penetration rate of smart phones, the Internet, electronic payment and other technical products has increased year by year, there is a big gap between the elderly and the young in terms of technology acceptance and use ability. According to the survey, the participation of the elderly in using the Internet, smart phones, social media and other aspects is significantly lower than that of young and middle-aged people. For example, many elderly people are not familiar with operating smartphones and often encounter difficulties such as inconvenient operation and small screens when using smart devices. Some elderly people are unfamiliar with electronic payment systems and still accustomed to cash transactions, making it difficult for them to integrate into modern payment methods. The elderly population generally lacks systematic digital skills training, and many elderly people do not have the opportunity to receive education and training related to digital technology. On the one hand, due to the fact that elderly people often live in relatively closed social circles, it is difficult for them to access new technologies or training opportunities; On the other hand, because some elderly people have more traditional working backgrounds and lack basic computer operation or Internet knowledge, they often feel confused or excluded when facing emerging digital products. Most elderly people have not been exposed to relevant computer courses or training like young people, so their digital literacy is generally lower.

Many elderly people do not have sufficient financial ability to purchase high-end digital devices such as smartphones, computers, etc; Even with devices, elderly people often feel confused due to unfamiliarity with new technologies or version changes, as operating systems and applications are constantly updated and iterated. In addition, some elderly people live in relatively remote areas, and the penetration and stability of broadband networks and mobile networks are poor, which has also become a major obstacle for the elderly to use the Internet. The acceptance of digital technology by the elderly is also influenced by psychological factors. Many elderly people resist new technologies, thinking that they are old and do not need to learn these 'things that young people play with'. This bias and ideological barrier make elderly people prone to develop a sense of rejection when facing digital technologies, believing that they are difficult to understand or have no practical help for life. This psychological barrier has further deepened the digital divide among the elderly population to a certain extent. The digital divide is a new development imbalance, and bridging the digital divide is a key measure to promote common prosperity in the digital economy era.[5]

4. The impact of the digital divide on the lives of the elderly

In the information age, many social services, medical services, entertainment activities, social interactions, etc. rely on digital platforms. Therefore, the existence of the digital divide has gradually marginalized elderly people in social activities. For example, elderly people may lose contact with family and friends due to their lack of knowledge in using social media, or may become more inconvenient in life due to their inability to adapt to new consumption patterns such as online shopping and ride hailing, increasing their sense of loneliness and social isolation.

In recent years, more and more medical services have turned to online platforms, especially remote medical care, online consultations, electronic health records and other services, which have become important ways for many elderly people to access medical resources. However, due to technological barriers, many elderly people are unable to use these platforms smoothly, which has led to significant difficulties in health management and medical services. In addition, some elderly groups lack sufficient knowledge of the use of digital health management tools such as smartwatches and health monitoring devices, missing out on many opportunities to improve their quality of life. In the context of population aging, promoting the construction of a healthy China and actively responding to the national strategy of population aging promote and combine each other, and "healthy aging" has become a common goal pursued by the whole society.[6]

Due to the digital divide, elderly people often find themselves at a disadvantage in accessing information. In the process of digitization, informatization, and intelligence, elderly people have a significant disadvantage in acquiring and applying digital technology compared to other groups due to the comprehensive effects of themselves and the social environment, and have not been able to enjoy the benefits of digital development, ultimately leading to the deprivation of their digital subjectivity.[7] For example, news, educational resources, public welfare activities and other information are increasingly relying on the Internet, and some elderly people may not be able to timely understand social trends, policy information, or even miss some opportunities to enjoy social welfare. In terms of employment, many elderly people find it difficult to find suitable jobs or engage in remote work due to insufficient technical abilities, further exacerbating the problem of poverty among the elderly.

5. Suggestions for countermeasures

The government, social organizations, and enterprises can collaborate to promote digital skills training and help elderly people improve their information technology application abilities. For example, digital education courses for the elderly can be offered to train them on how to use

smartphones, shop online, and use social media. These courses should simplify the operational steps, avoid excessive technical jargon, and make it easier for the elderly to understand and master.

When designing digital products and services, companies can consider the special needs of the elderly. For example, developing a simple operating system and interface that is more in line with the habits of the elderly, providing functions such as voice assistants, font enlargement, contrast adjustment, etc., to ensure that the elderly can receive better visual and operational support. Conduct research and promote the production of products suitable for aging.

The government should increase investment in the construction of digital infrastructure in remote areas to ensure that the elderly can equally enjoy the convenience brought by the Internet and information technology in all places. This includes expanding broadband coverage, improving network quality, and reducing network costs. The role of social support systems cannot be ignored in helping the elderly overcome the digital divide. Family members, community organizations, volunteer teams, etc. should all play an important role in helping elderly people learn to use digital technology, accompanying them in practical operations, and gradually eliminating their fear and exclusion in technology use. The digital divide is an undeniable challenge in the digital transformation of society, and the issue of the digital divide among the elderly is particularly severe. Solving this problem requires the joint efforts of the whole society, starting from education and training, technological design, infrastructure construction, and policy guarantees, gradually narrowing the digital gap between the elderly and young people. Only in this way can we ensure that the elderly population can equally enjoy various benefits brought by the digital age, integrate into modern society, and achieve a better life in their later years. By integrating and managing multidimensional resources as a whole, we aim to reduce the digital inequality among the elderly in urban and rural areas, comprehensively improve the quality of digital social life for the elderly in China, and truly realize that the dividends of digital development are shared by everyone regardless of age.

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