

# Research on Aging Health Communication in the Context of Intelligent Propagation

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**Abstract**—In the context of population aging, health issues are increasingly valued. In the era of intelligent media, the elderly have become "digital voyeur ". A large number of medical and health platforms emerge, enabling personalized communication comes true with big data. However, the health needs of the elderly are difficult to be met, their health literacy is not high, it is difficult to screen real and effective information. Solving these problems is a complex endeavor. The platform can launch products suitable for aging, children help the elderly to increase health literacy, community publicity strengthens the penetration of health information, and "silver-haired Internet celebrities" can expand the breadth of health communication.

**Keywords**— Health Communication; Aging; New Media.

## I. CURRENT SITUATION OF AGING HEALTH COMMUNICATION

### 1. The necessity of aging health communication

According to the statistical standards of the United Nations, China entered the aging society in 2000, and has become the country with the largest elderly population in the world. According to the results of the seventh population census in 2021, China's population aged 60 and above accounted for 18.9 percent of the total population, showing a deepening degree of aging. [1] It is expected that in the next five years, the population structure will move from mild aging to moderate aging. The problem of ageing will be an enduring challenge that must be faced.

The aging of the population has a significant impact on the health of the nation, and it has also brought a huge burden to the society. According to the survey, people over 65 suffering from serious illness is 6.2 times that of other age groups, about 80% of the elderly at least has a chronic disease, with the improvement of health service level, survival in patients with chronic diseases is extend continuously, coupled with rising incidence of chronic disease, the amount of patients in China base will continue to expand. In this situation, especially middle-aged and elderly people, need to improve self-health management awareness, from medical treatment to prevention.

In addition, with the acceleration of aging and urbanization, the scale of empty nesters is expanding. When the elderly quit the labor market, their social role gradually lost and social network gradually narrowed. With the decline of physical function and the lack of accompany of children, the elderly are prone to depression, anxiety and other negative emotions, so their mental health problems are also worth attention.

### 2. The digital shift in aging health communication

American scholar Wesley Fryer proposed the concept of "digital divide" in 2006, dividing the social population into "digital natives", "digital immigrants" and "digital refugees". Old people who shun digital culture are classified as "digital refugees". There is gap between the younger generation and the elderly in the access and use of digital resource. Elderly people are more willing to believe the professional medical practitioners, as well as the information derived from their social network. Because of the difficulty of operation, the elderly cannot successful use new media access to health information, their self-efficacy decrease, with the addition of distrust to the new media, some elderly people have health information avoidance strategy, which makes the aging health communication effect is not ideal. With the continuous improvement of Internet coverage, Wesley Fryer puts forward the fourth group -- "digital voyeurs". These people know the digital world and want to integrate into digital culture, but they are still at a very elementary level. Most elderly people fall into this category.

At present, the number of Internet users in China has exceeded 1 billion, and the Internet penetration rate has reached 71.6%, digitization has become a prominent feature of the current era. The great change of life style makes the elderly have a sense of strangeness and crisis to social life. Some of the elderly are unwilling to be left behind and keep pace with the times, working hard to learn how to use the Internet. According to the 48th Statistical Report on the Status of Internet Development, the middle-aged and elderly group has the fastest growth in the number of Internet users, with users aged 50 and above accounting for 28.0%, up 5.2 percentage points from June 2020, and those aged 60 and above accounting for 12.2%. [2] More than two-thirds of the elderly spend more than two hours online. More and more middle-aged and elderly netizens bid farewell to the negative label of "digital refugees" and actively integrate into the Internet life.

In the era of new media, people's access to health information has undergone an important change, from reading health newspapers and magazines, listening to radio and watch TV programs, to using mobile phones, computers and other electronic devices to obtain health information. The increasing number of elderly netizens makes it possible for the elderly to obtain health information through new media. The massive amount of health information can cover most of the health issues concerned by the elderly. After a period of adaptation and

adjustment, it is believed that new media will inevitably become an important way for the elderly to maintain health information and treat diseases.

## II. OPPORTUNITIES FOR AGING HEALTH COMMUNICATION IN NEW MEDIA ERA

### 1. *Media of medical and health spring up*

The medical industry revolution brought by the epidemic has promoted the application of new technologies such as the Internet of Things, big data and artificial intelligence. Digitization and informatization of the industry have developed rapidly, giving birth to a large number of personalized and diversified health information and service platforms. Health communication platforms based on intelligent media are constantly emerging.

At present, health media can be divided into three categories. The first type is the health channels of major comprehensive portal websites and news clients, such as Sohu Health, NetEase Health, Xinhua Health and People's Daily Online "health · Life", which are mainly aggregative platforms of news and health care knowledge. Their contents are not professional, targeted and interactive. The second type is the media platforms of professional medical institutions, such as the WeChat Official Accounts of hospitals, which mainly provide medical services, but the dissemination of health knowledge is relatively weak. The third category is "We-Media", which are based on new media platforms such as WeChat, Micro-blog and Tik Tok, and they has become the main force of health communication. The content mainly includes response to public health emergencies, discussion of hot health topics, dissemination of health information and knowledge, etc. The production mode is mostly PUGC, users can also participate in the sharing and discussion of the content to form an online community of health communication.

"DXY Doctor" is a representative health We-Media. The team has professional medical staff and scientific researchers to ensure the accuracy of information. Epidemic map, rumor dispelling and other functions can effectively improve users' understanding of the disease. In terms of content presentation, professional information becomes easy to understand or even interesting with the help of diversified expressions such as graphics, cartoons, videos and dynamic data. At last, the content will be released on App, Official Account, Micro-blog and other platforms to form a three-dimensional communication matrix, improve the strength and validity of health communication. DXY is an absolute "opinion leader" in the medical and health sector during the COVID-19.

### 2. *Advantages of health new media*

At present, the mismatch between supply and demand of doctors and patients is a common problem in China's medical treatment. With the help of new media platforms, users can obtain health information more easily and quickly. On the one hand, it is possible for users in underdeveloped areas to obtain high-quality medical information, and on the other hand, it also reduces the medical pressure to a certain extent.

Relying on the mobile devices with sensors, positioning systems and the massive data generated by the devices,

enabling health communication becomes intelligent. Through tracking and recording the big data of user's behavior, feedback and interaction can be enhanced to get the most urgent health problems that users want to know, and health information can be accurately pushed to realize the personalization of health communication and improve user experience.

New media constructs a new medical and health communication scene and enhances the user's experience. Before treatment, patients can through online inquisition to have appropriate knowledge of disease information, on the one hand, it can greatly reduce the patients' panic and anxiety caused by the lack of information, on the other hand, it prevent patients due to don't want to go or not convenient to go to the hospital and finally cause delayed therapy. The convenience of communication within the virtual space narrowing the difference of social identity of the doctors and patients, ensure the smooth construction of doctor-patient relationship and the smooth advancement of diagnosis and treatment process.[3] After medical treatment, patients can realize self-health management through remote consultation.

## III. THE DILEMMA OF AGING HEALTH COMMUNICATION

### 1. *The elderly have low health literacy*

Health literacy refers to the ability of individuals to access health information and services, evaluate them through their own understanding, and make correct decisions to maintain and promote their own health. It includes knowledge and ability. Knowledge includes basic health knowledge and skills. Competency level is health information literacy. Health Information Literacy refers to the ability to obtain, understand, screen and apply health information, which is the core of health literacy. [4] Health information literacy can be improved mainly through individual learning and guidance from others, which requires low social cost but tests the subjective initiative of the elderly and their intergenerational relationship.

In the context of intelligent communication, the health of the elderly is not only reflected in physical and mental health in the real space, but also include "healthy survival" in the digital space. Although more and more elderly people have entered the digital space, only a few can readily adapt. [5] According to the National Health Literacy Monitoring, people from urban and rural aged 15-69 as the subject of the survey, the health literacy level of people who aged 65-69 was the lowest, only 8.49%, less than half of the average of the whole population (23.15%). [6] Compared with the younger generation, the elderly group has a big gap in the adoption rate of new media, degree of use and knowledge acquisition through new media.[7]

Many studies have shown that low level of health literacy is related to poor health status. In the mode of "knowing-believe-action", health literacy will affect people's choice of health information and thus influence their health behaviors. At the same time, the frequency of people actively seeking information about healthy lifestyle was significantly positively correlated with age. It can be seen that the elderly public's demand for health information and the ability to obtain health information are seriously out of harmony. Therefore, in order to improve the health level of the elderly, it is necessary to effectively improve their health literacy level. [8] The arrival of

the intelligent media era brings both opportunities and new challenges.

### *2. The elderly have difficulty accessing effective health information*

Appropriate and scientific health information is the basis and prerequisite for health communication among the elderly. In 2014, there were more than 2,000 mobile medical apps in China. In recent years, with the continuous development of social media and the public's attention to health issues since the outbreak of COVID-19, the number of health information on various platforms is extremely large, but the quality is uneven. According to the Regulations on the Administration of Medical Institutions, medical institutions must register and obtain the "practice license of medical institution", however, because everyone has the right to speak out in social media platform, legal regulation on health media is almost blank in China at present, "gatekeeper" miss, many account developers do not yet have the qualifications of medical institutions, this makes it difficult to ensure the authority and accuracy of the content. Even if they have the resources of professional doctors, due to the limitation of network space, the disseminators can only give users some health guidance and precautions, which may easily lead to misdiagnosis when users do not know their own physical conditions.

New media speed up the homogenization and atomization of information, and each platform is loaded with a large number of similar information, resulting in the flood of false information. After the correct information released, it would easy to be lost in meaningless homogenization information, reducing the communication effect. [9] The elderly's health information literacy is poor, they lack the sense of scientific knowledge, but they are very concerned about the health information, combined with the thinking inertia in traditional media era, they believe in any content of the "media" banner, and they are likely to spread the false information again that they considered right through intelligent terminal. In the end, these people can only be trapped in a vicious circle of pseudoscience and rumors.

In addition, health information is distorted in the process of commercialization. We can often see a variety of roadside advertising, promoting health care products to the elderly. It also exists online, when a media spread health knowledge, it is most likely that it get support from pharmaceutical companies, advertising companies, private medical institutions and other relevant industry. This kind of profit-driven propaganda, often exists exaggeration and bias, [10] some enterprises and individuals in order to pursue economic interests, they excessively package health concepts and health care products. While old people's judgement is weak, it is difficult for them to identify the various marketing strategies, are more susceptible to these advertisements and mislead by false information, leading to excessive consumption, disclosure of personal privacy, [11] not only reduce the will of using new media to get health information, but also be counterproductive to health if the medicine is from informal channel.

### *3. The media fails to tap into the real needs of the elderly*

Mobile phone has become the most important terminal for

the public to obtain information, but behind the dazzling information, the credibility of the new media platform is questionable. In the context of intelligent media, although the status of TV has been greatly challenged, the number of TV health programs has been increasing year by year, the style of the programs has been continuously changed, and bold breakthroughs have been made in form. The content has gradually expanded from the initial popularization of health to fitness diet, doctor-patient relationship and other aspects. The way of expression has also changed from studio talk and documentary to reality show. [12] The target audience is no longer limited to the elderly, more to cater to young group.

According to the survey of elderly people's trust in health information acquisition channels, direct medical treatment is the most trusted, followed by relatives and friends, the next is traditional media such as TV, newspaper and radio. Health information acquisition through these three channels has little relationship with personal socioeconomic status and other factors. [13] Television is still the main source of health information for the elderly, but there are fewer and fewer programs suitable for them. In addition, due to the consideration of audience rating, few health programs are broadcast in the prime time, while more than 90% of the elderly choose to watch TV programs after 6 in the evening.

Mobile Internet and social media have reconstructed the relationship between people and the world, and health information needs to adapt to the reconstructed relationship in order to be recognized, understood and accepted. Elderly groups are difficult to adapt to such changes. Towards intelligent media platform, the elderly with different social backgrounds and family environments have great differences in acceptance, which requires the elderly to have higher information literacy. However, even if they are willing to use new media, they may be confused by the changes in form and voice of the traditional media which they trust, because traditional media also adapt to the new media wave. In addition, they mainly pay attention to and adopt preventive health knowledge, while the media tend to focus on news events out of the pursuit of "tipping point", leading to a lack of knowledge popularization, which goes against the nature of health communication.

From the viewpoint of communicators, the structure of the Internet technology--"decentralization of authority" caused a huge impact on health communication which relies heavily on profession. "Decentration" is not necessarily to form rational and constructive" multicenter", and is likely to encounter the risk of "no center". [14] Mixed information and the droplets of information make false science and false authority prevail, the propagation efficiency of effective information is greatly reduced. From the viewpoint of audience, the elderly has not adapted to the life dominate by intelligent media, and the trust of traditional media are undercutting. Although the government and all sectors of society take a series of policy measures to help the elderly integrate into the Internet more quickly, but it's not hard to find, the elderly is still in the edge position among the platform users, it is hard to meet their needs.



#### IV. AGING HEALTH COMMUNICATION INNOVATION PATH BASED ON INTELLIGENT COMMUNICATION

##### *1. Promote "age-appropriate" intelligent products*

When the Internet has penetrated into every aspect of people's life, the smart services that young people are used to, such as green code, appointment booking and mobile payment, have repeatedly hit a wall for the elderly and are restricted everywhere in their daily life. Technical problems such as not being able to operate, install and upgrade are plaguing the elderly, making them fall into the dilemma of "difficult to use the Internet". In order to improve the effect of aging health communication, it is necessary to adapt the media and communication content to "age-appropriate".

Health Apps can launch "senior version", which is appropriately simple in function, retain the traditional service mode familiar to the elderly to guarantee the basic needs of the elderly, and keep close to the needs and characteristics of the elderly, strengthen technological innovation to provide more intelligent services for the elderly. For example, voice search function can be provided for the elderly who cannot type, adding label for the content which they are interested, and setting collection classification. In terms of content, local and dialect categories are of great importance, and teaching videos released through official accounts for elderly users can be produced on the platform. Health information should be refuted in a timely manner to help middle-aged and elderly people distinguish the authenticity of health knowledge. Only the advantages of the application of intelligent technology outweigh the disadvantages, so that the elderly can use, know how to use, dare to use and want to use it.

##### *2. Improving the elderly's health information literacy through intergenerational support*

Different from individualism in western society, traditional Chinese ethical culture attaches great importance to realizing individual's own and social value starting from family relationship, and extends from family to society, forming the concept of "family, state and world". The elderly group is a typical group deeply influenced by the traditional Chinese social moral principles and values based on family ethics. Compared with the young group, family relations and family interests have more complex and deep connotations for the elderly group. Therefore, it is often most effective to focus on appealing to the interests of the family when health communication is directed at the elderly, a group with a strong sense of vertical collectivism. [15] With the growth of age, the elderly gradually increase the degree of dependence on their children, coupled with care for children, children's words and deeds can affect the elderly to the greatest extent and be accepted.

Scholar defined the process of "the younger generation pass culture to older generation" as "cultural feedback", in the use of electronic products, the elderly contact less and their cognitive decline, the younger generation has the advantage of the natural, control the voice in the family. Interaction around how to adopt and use new media between generations, this kind of offspring "digital feedback" is one of the ways to solve the contradiction between the increasingly "old" population

structure and the increasingly "new" development of digital form.

The home-based quarantine measures provided an opportunity for children to return to their families, bringing family relations back on track and strengthening strong intergenerational connections. Many studies have shown that good intergenerational relationships can greatly help older people meet their health needs. Children's use of electronic products will subtly affect the concept of the elderly, stimulate their subjective interest, so as to accept new things more quickly. According to the report, the main purpose of the elderly to access the Internet is to strengthen communication with their children, and for improving the ability to access the Internet, the elderly are most looking forward to patient guidance from their children, followed by community courses, universities for the elderly, online teaching videos and other solutions. If the children can interact with their elders in a two-way interaction, the elderly will be able to better master the skills of using new media. At the same time, the elderly will take the recommendation of children to adopt health information, through daily communication about diet, exercise and other health aspects, can improve the elderly's judgment of health information on the Internet, and then guide healthy behavior.

##### *3. Increase the penetration of health information through community communication*

The exclusivity and penetration of community media resources can improve the pertinence and effectiveness of health communication, facilitate the reception of elderly groups, and realize the accurate dissemination of health information. After retirement, the elderly have less social interactions, and eager to communicate with the outside world, their activities and social area are mainly concentrated in community, elderly neighbor, square dance or exercise friends, are all side groups can have large inference to elderly people's attitude towards health communication.

The community management department should make full use of the elderly activity center, the entrance gate of the community, the door of the apartment building, the publicity window and other spaces, through propaganda boards, leaflets and other media, [16] release the health information concerned by the elderly, and strive to achieve the effect of mouth to mouth in the community. However, the current community publicity is often a mere formality, with disorganized content, slow update and small font, it is difficult to get effective information from it. It is necessary for neighborhood committees to hold a series of lectures and volunteer services on "teaching the elderly how to use smart phones". Members of neighborhood committees, building leaders and other cadres can publicize the elderly and their family members in combination with the opportunity of home visits, so as to maximize the utilization rate of mobile phones among the elderly, especially the use of media platforms. Community can also cooperate with health care institutions to guide the elderly to make scientific health decisions.

When the content of health information is more relevant to the individual, older people are more involved. It is necessary for community managers to collect the physical and mental

health status and health literacy level of the elderly in the community, and establish health records for the elderly, so as to provide reference for health education. According to the health records, communication support groups can be divided by the elderly who have a similar disease or similar health needs, then each group choose a team leader with health literacy higher, similar to the community "party branch", establish "health branch", regularly publish health information relevant with the members. Members can chat online and can also do exercise in group, covering the whole stage of health communication from "knowledge" to "action".

#### 4. Making good use of older "Opinion Leaders"

In the process of health communication, information is complicated and rumors are rampant. How to screen out valuable information is a big problem for the elderly group. We call those who have strong discourse influence on social media "opinion leaders", they filter information and their views greatly influence the judgment of the public. In the digital era, many elderly people feel a sense of loss and frustration, believing that it is dominated by young people. If elderly "opinion leaders" can speak out, the internal dialogue and discussion among the elderly group can be enhanced, and the effect of health information communication among the elderly population can be improved.

The elderly "opinion leaders" mainly have two dimensions: one is the "opinion leaders" within the elderly group in the community, who are cheerful and willing to express themselves, often enjoy high prestige in the community, and have a strong persuasion effect on the surrounding elderly. The second is "silver-haired Internet celebrities" on various social media platforms. The phenomenon appeared from 2018, when short video platform get the favour of elderly Internet users, a large number of elderly people with different characteristics success to the newly define "Internet celebrities", their presence means that old people can keep pace with the times, and they can also be active communicators and actors of self-presentation in the digital space.

There are many types of silver-haired Internet celebrities. The main types are the fashion category that breaks the appearance image of the elderly, the life category that breaks the inherent characteristics of the elderly, the viewpoint category that breaks old label of the elder's thought, the special skills category that show the life skills of the elderly. [17] Knowledge subject is very lack at present, especially healthy topic only one account used to have high heat. In the video, author popularized health knowledge in a humorous way, but the account had stopped till now. It is hoped that the elderly with relevant professional background can design works in line with the characteristics of the elderly group in the future, share health stories, and improve the acceptance and trust of the elderly users.

"Silver-haired Internet celebrities" mainly shoot and upload videos through self-study of new media technologies, or solve technical problems with the help of family members, some of them are packaged and operated by MCN organizations. [18] In virtue of the form of short video and live,

social media platforms provide a chance for the elderly to realize self-worth in the digital space, but compared with Internet celebrity of other age groups, silver-haired Internet celebrities have no advantages on the quality of content, after the newness fades, more elderly fans are needed to link, only when the elderly participate fully, can silver-haired Internet celebrities truly drive the trend of "active aging".

#### V. CONCLUSION

Population aging is the trend of the times, the scholars pointed out that the focus of research should be turned from "elderly communication" to "aging communication", research subject should not be limited to "the elderly", the ageing population structure should be the composition of social background, study the cultural and social consensus which formed in a variety of transmission way between the elderly and others. [19]

In the era of new media, information transmission channels have changed greatly, forcing the elderly into the digital space. The collision between "aging" and "digitization" is particularly prominent in the area of health communication, which has attracted much attention. The outbreak of COVID-19 has spawned a large number of high-quality medical and health platforms, and advanced digital technologies have made intelligent communication possible. However, the media platform cannot really meet the needs of the elderly, and the mass information of both good and bad makes the elderly who are not high in health literacy even more confused. In this regard, platform operators should adapt to age-appropriate products to meet the pain points of the elderly. Meanwhile, the influence of family and community should not be ignored, which is the key to improve the health literacy of the elderly. As opinion leaders of the elderly, "silver-haired Internet celebrities" can deepen the theme of health and drive the spread of health in the whole society.

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