

Relationship Between Internet Use and General Belief in a Just World Among Chinese Retirees

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Abstract

As an emerging medium for acquiring information, the Internet might affect how users, including older adults, view or think about the world around them. Using data from a survey of retirees aged 50 years and above ($N=12,309$) in China, the present study examined the relationship between Internet use for acquiring information about the world and general belief in a just world (GBJW). The results indicated that Internet use primarily for obtaining news information was negatively related to GBJW. Specifically, Internet users had lower levels of GBJW than nonusers; the more time retirees spent visiting Web sites to acquire news information, the less likely they were to believe that the world is just. In addition, compared with retirees who had acquired information about the world through other means (including books, newspapers or magazines, radio and television, and direct communication with other people), those who had acquired information primarily using the Internet showed lower levels of GBJW. The significance and limitations of the current study are discussed.

Introduction

IN RECENT YEARS, OLDER ADULTS have become one of the fastest growing populations of Internet users in developed countries.^{1–3} A similar trend is emerging in China with the aging of the population and the popularity of Internet use. According to an official report on Internet development in China, by the first half of 2012 the number of Internet users over the age of 50 years had exceeded 30 million, an increase of nearly 25% compared with that of the previous year.⁴ Especially in urban areas, more and more older adults are using the Internet to acquire information, develop online interactions, and play games by visiting various types of Web sites.⁴ However, existing cyberpsychology studies have focused primarily on the psychological outcomes of Internet use among young adults and adolescents (such as Internet addiction), while studies on Internet use among older adults are relatively scarce. Furthermore, even in Western countries, where the Internet has been in use longer, most studies have mainly referred to the relationship between Internet use and mental health or well-being.^{5–8} As an emerging medium for acquiring information, the Internet could considerably influence how users, including older adults, view or think about the world around them.

Media exposure and social belief

For decades, researchers have demonstrated that mass media, such as television, has an impact on social belief and

world view in the long term, even though there remains some disagreement as to the nature and size of this impact.⁹ Gerbner et al. demonstrated that television viewing shaped viewers' beliefs about reality, even when other potential influencing factors were controlled for.¹⁰ Hawkins and Pin-gree posited that the content people view, rather than the actual act of television viewing, influences their perception of social reality.¹¹ Mutz found that positive e-commerce experiences promote generalized social trust.¹² Shrum indicated that both the content and amount of television viewing have effects on attitude extremity and viewers' beliefs.¹³ Furthermore, John and Steven analyzed the differences in social attitudes between Internet users and nonusers, and found that Internet use is partly associated with "liberal" political opinions and a more open attitude to different points of view.¹⁴

Belief in a just world and Internet use

The concept of "belief in a just world" (BJW) formulated by Lerner states that people tend to believe that they live in a just world, in which everyone gets what they deserve, and physical and social environments around them are stable and orderly.¹⁵ Despite BJW being generally considered a stable trait,^{16,17} some studies have shown that BJW might vary depending on the situations or life events people experience.^{18,19} Wu et al. found that, in the initial stages of an earthquake, residents in disaster areas had high levels of general BJW

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compared with residents in nonafflicted areas.¹⁸ However, eight months later, the general BJW of residents in the disaster areas had reduced significantly. However, up until now, few existing studies have directly examined the effects of Internet use on people's social beliefs or the relationship between these two factors.

Postretirement life, Internet use, and social belief

In China, older adults who have retired from their jobs often maintain concern about national and social affairs by using various media (e.g., newspapers, radio, and television) in order to keep in touch with the wider world. In recent years, an increasing number of older adults receive their news by visiting Web sites, although the proportion of elderly users is still relatively low.⁴ The emergence of the Internet might to a certain extent have changed the way people understand, view, and explain the world. The higher frequency of exposure and greater vividness of mass media may contribute to the formation of a social perception of reality that is consistent with how reality is portrayed by mass media.^{20,21} In China, compared to the state controlled newspapers and television, the Internet often covers more multifaceted content, specifically including more information, reports, and news that are negative. Excessive exposure to such news might negatively influence some individuals' perceptions and judgments of how society and the world are not so stable, just, or satisfactory. A recent meta-analysis of 43 samples indicated a negative association between high Internet use and reduced subjective well-being and life satisfaction.⁶ However, there were still some studies that demonstrated that frequency of Internet use was positively related to life satisfaction and positive psychological consequences.²²

In this study, we chose retirees living in urban areas as the object of study. First, in keeping with the trend of an aging population, the number of retirees has continued to grow at a rate of 6% per year in China. According to 2012 China Statistic Yearbook, the number of retirees has now exceeded 68 million, and this population accounted for about one third of the entire elderly population in China (National Bureau of Statistics of China; see also www.stats.gov.cn). Second, and more importantly, in contrast to the general elderly group (e.g., the elderly living in rural areas), those retirees living in cities often enjoy a stable pension and welfare, and are educated to a higher level. This relative superiority of retired city people in terms of intellect, social status, leisure time, and financial resources often leads to them having more opportunities to access computers and the Internet. As a result, these retired Internet users may be relatively easily influenced by the Internet. Third, according to the resource perspective of adjusting to retirement, the number and content of leisure activities as a resource maybe have a direct impact on retirees' adjustment or adaptation to postretirement life.²³ Up to now, very few empirical studies have examined the psychological effects of the Internet and other mass media as important leisure activities for the retired group. Thus, it is advisable to explore Internet use and its psychological effect among the retired group living in urban areas of China.

Research objectives

In the current study, we attempt to examine whether using the Internet to obtain information about the world and society

can relate to BJW among retired adults, and whether this relationship is negative or positive. Specifically, we hypothesized that:

H1: Compared to nonusers, Internet users have lower levels of BJW.

H2: Frequency of Internet use is negatively related to BJW.

H3: Compared to participants who acquire information about the outside world through other means (e.g., books, newspapers, magazines, radio and television, and direct communication with other people), those who acquire such information primarily through the Internet have lower levels of BJW.

Materials and Methods

Participants

The sample was drawn from a research project on the mental health of retirees, which was funded by the Chinese Academy of Sciences. A stratified sampling method was used. We chose 26 of the 284 municipal level cities distributed in 10 provinces of China as sampling units. Of the 26 cities, 12 lie in the east region of China (highly developed region), eight in the central region (moderately developed region), and six in the west region (less developed region). The survey data were collected between August and November 2011 by two modes: individual (retirees were contacted and investigated individually) and group measure (retirees were investigated by various collective activities). Investigators consisted of well trained workers from a local bureau of retired personnel and communities. Those retirees who suffered from dementia, disability, severe psychotic illness, or who were completely unable to take care of themselves because of chronic physical illness were excluded where possible. Some participants who had difficulty in understanding the written questionnaires completed the survey with the aid of investigators. A total of 14,666 questionnaires were handed out, and 12,309 were completed (83.9% response rate). Of the 12,309 participants, 9,100 (74.6%) were men, 3,099 (25.4%) were women, and 110 did not report their sex. The ages of participants ranged from 50 to 99 years ($M=68.86$, $SD=8.11$). Table 1 shows further demographic and socioeconomic details.

Measures

We used three items to examine Internet use among retirees: (a) "Do you periodically acquire information on the world through Web sites?" Participants could answer "yes" or "no." If they responded "yes," they would move on to the following item: (b) "On an average, how much time do you spend every day on the Internet to acquire such information?" Options were (a) less than 1 hour, (b) 1 hour or more but less than 2 hours; (c) 2 hours or more but less than 3 hours, and (d) 3 hours or more. Finally, participants answered (c) "In everyday life, which is your primary means of learning about social, domestic, and international events?" by giving one of four possible answers: (a) reading books, newspapers, or magazines; (b) listening to the radio or watching television; (c) visiting news Web sites; and (d) communicating with families, friends, or other people.

BJW was assessed using the General Belief in a Just World Scale (GBJW) developed by Dalbert.¹⁶ It comprises six items

TABLE 1. DEMOGRAPHICS OF SAMPLE

Variable	n	Valid sample %	Mean (SD)
Gender			
Male	9,100	74.6%	
Female	3,099	25.4%	
Not provided	110		
Age (years)			68.86 (8.11)
50–59	1,341	11.1%	
60–69	5,358	44.2%	
70–79	4,025	33.2%	
≥80 and older	1,409	11.6%	
Not provided	176		
Education			
Elementary or lower	514	4.2%	
Junior high school	2,430	19.8%	
Senior high school	4,850	39.6%	
College or higher	4,454	36.4%	
Missing	61		
Religious belief			
No	11,703	98.0%	
Yes	232	2.0%	
Not provided	374		
Marital status			
Widowed/unmarried/ divorced/separated	1,198	10.3%	
Married	11,309	89.7%	
Not provided	72		
Monthly income (RMB)			
Valid	12,182		3,463 (1,407)
Missing	1,406		
Self-rating physical health			3.46 (0.83)
Very poor	197	1.6%	
Poor	949	7.7%	
Fair	5,326	43.5%	
Good	4,607	37.6%	
Excellent	1,177	9.6%	
Missing	53		
Use of Internet			
No	7,286	59.7%	
Yes	4,920	40.3%	
Not provided	103		
Average time spent using the Internet every day (hours)			
<1	419	8.6%	
1–2	2,703	55.5%	
2–3	1,206	24.8%	
≥3	540	11.1%	
Not provided	52		
Primary media of acquiring information			
Books, newspapers, or magazines	7,678	62.9%	25.98 (6.69) ^a
Radio or TV	3,746	30.7%	25.27 (6.75) ^a
Internet Web site	469	3.9%	22.58 (7.11) ^a
Families, friends, and other people	304	2.5%	26.35 (6.84) ^a
Not provided	112		

^aMean and standard deviation of General Belief in a Just World (GBJW) scores.

(e.g., “I think basically the world is a just place”) rated on a 6-point Likert-type scale (1 = “strongly disagree” to 6 = “strongly agree”). Total scores range from 6 to 36. Higher scores indicate a stronger endorsement of GBJW. Previous studies have amply demonstrated its internal reliability,

structural validity with a one-factor model, and discriminant validity.^{16,17} The Chinese version of the GBJW has shown good reliability (Cronbach’s $\alpha = 0.81$) and construct validity.¹⁸ In the current study, the Cronbach’s alpha was 0.88. Main demographic variables were gender, age, education (elementary school or less, middle school, high school, college, or higher), religious belief (yes or no), and marital status (married and unmarried [separated/divorced, widowed, and never married]). Furthermore, physical health and economic income were considered two important conditions that limit people’s use of the Internet.^{5,8,24} In this study, participants were asked “Comparing yourself with people your own age, please rate your overall physical health on a 5-point scale” (1 = “very poor,” 2 = “poor,” 3 = “fair,” 4 = “good,” 5 = “excellent”). Participants reported monthly income on an 18-grade income list (in 500 RMB increments), and the mid-value of every grade reported by each participant represented their individual income. Self-rated physical health and individual income were used as continuous variables in the analysis. The above demographic characteristics were included as covariates in examining the relationship between Internet use and BJW.

Statistical analysis

All statistical analyses were conducted with SPSS V19.0. The correlation between Internet use and scores on the GBJW was assessed using linear regression analysis. We used analyses of variance (ANOVAs) to compare the differences in scores of the GBJW across the media that participants used to learn about social, domestic, and international events.

Results

Internet use and BJW

Multiple regression analysis showed that using the Internet to acquire information about the world was negatively related to GBJW. This indicates that relative to nonusers, Internet users are less likely to believe that the world or society around them is stable, just, and orderly. The negative relationship remained significant, even when the main demographic and socioeconomic variables were controlled for ($B = -1.786$, $\beta = -0.130$, $\Delta R^2 = 0.016$, $p < 0.001$; see Table 2).

Time spent using the Internet and BJW

Multiple regression analysis showed that of the amount of time participants spent using the Internet to acquire information about the world and society was negatively related to their GBJW scores. This indicates that the more retirees used the Internet to acquire information about the wider world, the less likely they were to believe in a just world. The negative relationship remained significant, even when the main demographic and socioeconomic variables were controlled for ($B = -0.741$, $\beta = -0.139$, $\Delta R^2 = 0.017$, $p < 0.001$; see Table 3).

The above two multiple regression analyses also indicated that age, education, religious belief, and physical health were significantly related to GBJW. Younger retirees, educated to a higher level, with a religious belief, and in poor physical health had lower GBJW scores (see Tables 2 and 3).

TABLE 2. MULTIPLE REGRESSION ANALYSIS OF GBJW ON INTERNET USE

	GBJW		
Variables and steps	B	β	ΔR^2
First step			
Sex	-0.235	-0.015	
Age	0.775***	0.097***	
Education	-0.804***	-0.104***	
Religious belief	-2.140	-0.043***	
Material status	0.198	0.009	
Income (month)	0.003	0.006	
Physical health	0.789***	0.098***	0.033***
Second step			
Sex	-0.120	-0.008	
Age	0.637***	0.080***	
Education	-0.523***	-0.068***	
Religious belief	-1.867	-0.038***	
Material status	0.304	0.014	
Income (month)	0.002	0.004	
Physical health	0.800***	0.099***	
Internet use	-1.786***	-0.130***	0.016***

*** $p < 0.001$.

Comparison of effects of different media on GBJW

An ANOVA showed a significant main effect of primary medium for acquiring information on GBJW, $F(3, 11731) = 42.122$, $p < 0.001$. Multiple comparisons of means indicated that retirees who learned about social, domestic, and international events mainly by visiting news Web sites had significantly lower levels of GBJW than those whose primary source of information was books, newspapers, or magazines ($MD = -3.399$, $SD = 0.326$, $p < 0.001$); listening to the radio or

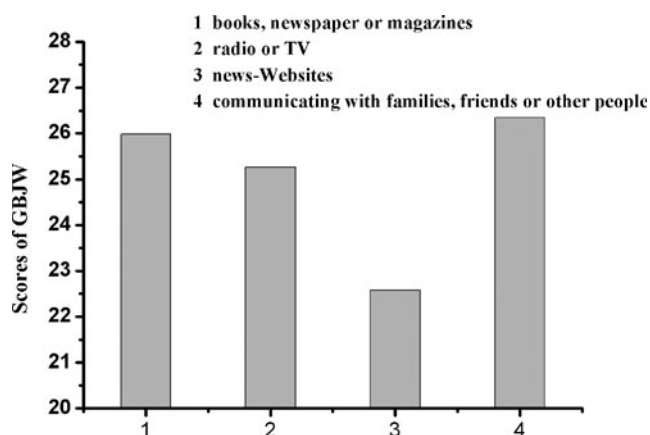


FIG. 1. Comparison of effects of different media on GBJW.

watching television ($MD = -2.687$, $SD = 0.336$, $p < 0.001$); or communicating with families, friends, or other people ($MD = -3.767$, $SD = 0.505$, $p < 0.001$). Results showed that the retirees who acquired news by communicating with families, friends, or other people had the strongest GBJW, followed by those who read books, newspapers, or magazines; listened to the radio or watched television; and visited news Web sites. Pairwise comparisons found significant differences in GBJW between any two media except between communicating with families, friends, or other people and reading books, newspapers, or magazines ($MD = 0.369$, $SD = 0.402$, $p < 0.001$; see Table 3 and Figure 1).

Conclusion

The current study examined the relationship between Internet use and GBJW in Chinese retirees. The results indicated that obtaining news information through the Internet was negatively related to GBJW. Specifically, Internet users had lower levels of GBJW than nonusers. Furthermore, the more time participants spent visiting Web sites to acquire information about the world, the less they tended to believe that the world was just. Finally, compared to retirees who acquired information about the world through other means (including books, newspapers, or magazines; radio and television; and direct communication with others), those who acquired information about the world through the Internet had lower levels of GBJW.

The current study was only a preliminary attempt to examine the effect of Internet use on social beliefs. Thus, few classical theories can help explain the current findings. Social cognitive theory provides a conceptual framework for understanding how repeated exposure to the media (including television, radio, and the Internet) affects individual ideas, world views, and social behaviors, and also allows us to analyze the determinants and psychosocial mechanisms through which symbolic communication influences human thought.⁹ According to the cultivation theory proposed by Gerbner et al.,¹⁰ frequent viewing of a certain medium leads the viewer to "cultivate" the information in that medium by integrating it into their real world perceptions and judgments. Relative to the state controlled newspapers and television in China, the Internet often covers more multifaceted content, including information or news that is more negative.

TABLE 3. MULTIPLE REGRESSION ANALYSIS OF GBJW ON TIME SPENT USING THE INTERNET

	GBJW		
Variables and steps	B	β	ΔR^2
<i>First step</i>			
Sex	-0.235	-0.015	
Age	0.775***	0.097***	
Education	-0.804***	-0.104***	
Religious belief	-2.140	-0.043***	
Material status	0.198	0.009	
Income (month)	0.003	0.006	
Physical health	0.789***	0.098***	0.033***
<i>Second step</i>			
Sex	-0.116	-0.007	
Age	0.627***	0.078***	
Education	-0.515***	-0.077***	
Religious belief	-1.799	-0.037***	
Material status	0.267	0.012	
Income (month)	0.001	0.002	
Physical health	0.799***	0.099***	
Amount of time spent using the Internet	-0.741***	-0.139***	0.017***

*** $p < 0.001$.

Excessive exposure to such news might partly influence some participants' negative perceptions and judgments on how society and the world are not so stable, just, or satisfactory. Alternatively, some official newspapers and television programs may be overstocked with positive news reports and propaganda, which would suggest that the social perceptions and judgments of retirees would be partly biased in a more positive direction. Our results indicated that compared to retirees who used the Internet as their primary medium of acquiring information about the world, retirees who used the other three media had significantly greater GBJW scores above the middle value (21; see Table 1). A recent study revealed that media multitasking and online communication were associated with negative social well-being, and face to face communication was strongly associated with positive social well-being among 8–12 year old girl.²⁵ According to time displacement hypothesis of Putnam (2000),²⁶ the time that these retirees spent on Internet also competes for "scarce time," and further decreases the time of social contact and social connectedness. This increased disconnectedness results in a decreased trust in society. Nevertheless, further empirical studies are required to verify the above results, assumptions, and theoretical explanations.

The current study has important implication for research, management of Internet, and public policy specific to the retired group. First, many studies have focused on the effect of Internet use on mental health or well-being; very few studies have referred to the relationship between the Internet and social belief or world view. The current study first revealed a negative correlation between Internet use and BJW among the retired group in China. Second, government and management should also be concerned with possible negative influences that network information with low credibility and authority brings to the elderly population. An recent report on social trust among urban residents of China indicated that residents had lower levels of trust in emerging mass media (news Web sites and SNSs), while they had relatively higher levels of trust in traditional mass media (newspaper and radio).²⁷ Third, as Kraut et al. pointed out,⁷ whether positive or negative, the effects of Internet use will be shaped by how the Internet was constructed by designers, how it is deployed by providers, and how it is used by consumers. Thus, the government, Internet technical companies, and the retired group should strengthen cooperation in enhancing regulation for existing news Web sites and building new Web site services for the elderly group. In general, the Internet should be a more open, more efficient, but not unrestricted platform of searching for or communicating information to elderly people.

The present study has several limitations that must be acknowledged. First, this study was essentially a cross-sectional survey, which could not reveal a causal relationship between Internet use and GBJW. We have merely assumed that Internet use has caused this change in social belief. However, older adults with lower levels of GBJW may be more likely to browse the news using the Internet. Future research should build on this research by using longitudinal and experimental designs. Second, this study explored only the correlation between Internet use and GBJW, and did not examine in depth the mechanism or reason for which Internet use relates to or affects individuals' GBJW. Third, although we used a relatively large sample, the participants mainly came from rela-

tively developed urban areas. Thus, generalizability of the current findings to the entire elderly population might be limited. Finally, in the current study, we only explored the relationship between the information acquiring function of the Internet and GBJW. Future research should examine whether or how other functions of the Internet, such as social communication and entertainment, affect users' social beliefs or world view.

Despite these obvious limitations, this is one of the first Chinese studies on Internet use among the older adult population, and is also one of the first studies to find a relationship between Internet use and social beliefs. As a preliminary attempt, the present findings can inspire future studies on the effects of Internet use on social beliefs and attitudes. Although we cannot determine causality using this cross-sectional survey, the results for the negative correlates of Internet use are highly suggestive.

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