

Research on Transmission Medium's Impact on Teenager's Sports Behaviour and Physical Health

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Abstract: Teenager's physical health is the foundation that ensures teenager overall development, and meanwhile it also is the top priority that has a relevance to future of state. In contemporary China, people from different cities and different regions have different understanding degrees about teenager's sports so that has an effect on teenager's physical health and sports behaviour. The paper starts with medium's impacts on teenager's physical health and sports behaviour these two aspects, through statistical analysis and correlation analysis methods, it studies relationships between medium and teenager's physical health as well as the medium's functions in teenager's sports behaviour. Firstly, it analyzes medium's liability and its functioning of propaganda in teenager's physical health, secondly, on this basis, it carries on analysis of teenager's contacting with different mediums sports consulting degrees, time and gender difference, and then further studies medium's impacts on teenager's sports behaviour. Finally it gets conclusions that television, network, broadcast is one kind of mediums that most widely used by contemporary teenagers to get sports information, and duration is basically around 30minutes. Contemporary group of teenagers' enthusiasm in participating in sports activities are not so high and gender difference is obvious, their attentions to sports information are mainly sports news.

Keywords: Correlation analysis, physical health, sports behavior, sports transmission, teenager.

1. INTRODUCTION

In all ages, teenagers are always the backbone and future of the country, just as Strong Nation Theory says young are strong, the country strong, teenagers' physical health also becomes one of focuses of the country, how to improve teenager's physique, from which medium undertakes extremely important liability. Among medium liabilities and implementation studies on promotion to Chinese teenager's physical health, many scholars have made achievements [1].

Lin Yuan-Hua in "Chinese teenager's physical health promotion-based organizational community structure construction research", by recalling progress that China explored foundational teenager's comprehensive quality education, he analyzed medium's role in teenager's physical education, and pointed out that Chinese teenager's physical education was moving forward followed by economic development, medium occupied great proportions in education, it should provide powerful guarantee for increasing masses attention to teenager's physique through medium's rapid transmission, convenience and recyclable features [2].

Zheng Jia-Kun in "Teenager's physical health promotion's government liability and realization path research", he utilized multiple methods, by interviewing and investigating, consulting lots of document literature, combined with

formers research basis, made discussion on Chinese government liabilities in improving teenager's physical health aspect. The thesis pointed out that among them government mainly played supervising, managing, guiding roles, while the functioning of supervising medium and school was most important. Shen Jian-Hua in "Student healthy sports behaviour cultivation study in the background of healthy city", he took teenager's physical health in the city background as research object, analyzed teenager's health important role in daily life through teenager's perspective. The thesis pointed out that teenager must establish sports consciousness and sports events that fit for his own demands so that improve his physical quality, from which medium's liability and roles cannot be ignored [3].

By referencing multiple scholars' research results, the paper utilized mathematical methods to make quantitative analysis of Chinese medium's liability in teenager's physical health aspect and its impacts on sports behaviour, and then puts forward suggests on how to improve people's attentions to teenager's sports to make important contributions to teenager's sound development.

2. RELATIONSHIPS BETWEEN MEDIUM TRANSMISSION AND TEENAGER'S PHYSICAL HEALTH

To strengthen propagating, improve teenager's physical health, medium propagandizes in education, public service advertising and LED movable advertisement, which makes huge contributions to improve Chinese concerns about teenager's physical health.

Table 1. Different cities different ways of medium to acquire information.

(Percentage %)	Beijing	Shanghai	Shijiazhuang
The internet	75	78	68
TV	22	18	25
Newspaper	1	1	4
Else	2	3	3

Table 2. Medium’s liability proportions in different fields.

	Parents Guiding	Supervision of the School	Affect Teenagers	Others
Medium proportion%	57	32	8	3

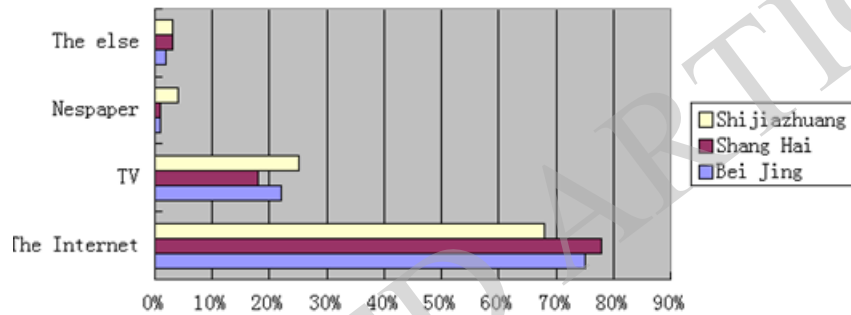


Fig. (1). The way of medium in different cities.

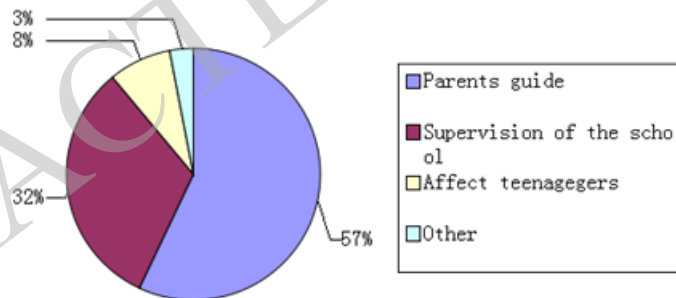


Fig. (2). City and country sports organization.

2.1. Medium’s Roles in Teenager’s Physical Health Propagandizing

Medium’s propagandizing ways in teenager’s physical health are different. For current fast-paced technology explosion era, network has become an important path that people get resources, secondly a large part of people acquire knowledge about teenager physical health through television, and small parts of people learn it from newspaper. Below Table 1 is proportion of people that different groups of people understand teenager’s physical health from different mediums, data is from internet statistical data.

Above statistical Fig. (1) indicates that for different cities’ residents, among these medium accessing paths, due to urban and rural residents’ living standards, living conditions multiple aspects factors influences, its application has obvi-

ous differences. Though contemporary cities, no matter big cities or small cities, internet has occupied largest share, with respect to big cities, small cities information accessing from television still occupies great proportions, while accessing information through papery medium and else are still fewer.

2.2. Medium’s Liability in Teenager’s Physical Health

In Chinese social life, due to government sector, association and communities as well as social-sponsored organizations attentions to teenager’s physical health, and meanwhile strengthen supervising mediums, for the purpose of letting teenager to sound and happy grow, medium similarly should undertake corresponding guiding parents, educating teenagers, supervising school’s sports healthy construction and other liabilities (Table 2).

Table 3. Different genders' sports attitudes statistical table.

	Bad	Poor	Ordinary	Good	Very Good
Boy	2.90%	10.04%	33.8%	37.80%	15.10%
Girl	3.30%	7.50%	37.10%	35.70%	16.40%

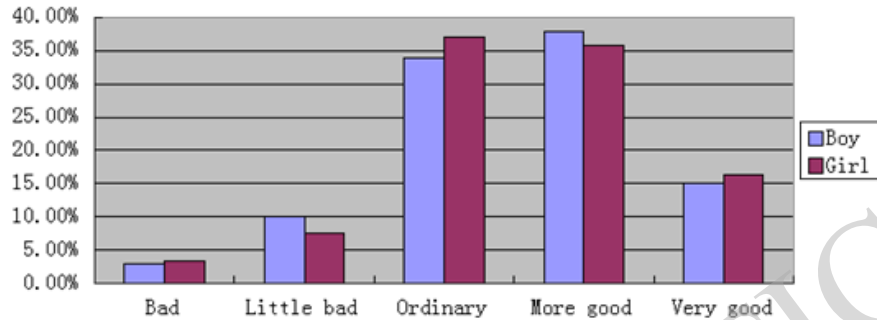


Fig. (3). The attitude of sports.

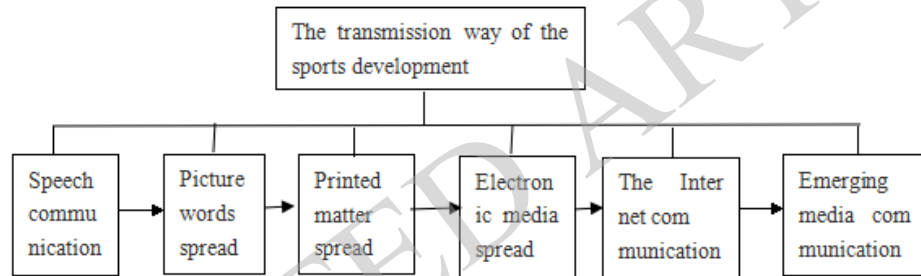


Fig. (4). The transmission way of the sports development.

From above statistical Fig. (2), it is clear that medium undertakes important liabilities in the aspect of guiding parents, parents are heading markers of teenagers, only improve parents' consciousness of teenager's healthy physique then teenagers can have a good environment, and school is the second home to teenagers, medium still cannot lessening supervision of schools, which cannot let teenagers' healthy growth be delayed by heaving learning, medium's propagandizing teenager's health aspect also cannot be ignored, the table shows different liabilities that medium should undertake from different fields.

2.3. Medium Transmission's Impacts on Teenager's Sports Behavior

Medium is a carrier of sports transmission, in today's information era, sports transmission mediums are mainly network, television, broadcast, newspaper, and library and so on. Teenager is new emerging force of Chinese sports, his way to understand sports information is also through medium transmission, therefore medium's roles in sports transmission and teenager's sports behavior cannot be ignored. Below Table 3 is Chinese teenagers' sport attitudes investigation statistical table, data is from relevant document literature and research results, and references country's sports bureau and Chinese statistical yearbook's data.

Above statistical Fig. (3) indicates that Chinese teenagers' sports attitudes are general, overall boys' sports attitudes are good while girls' sports attitudes are relatively lower, and there are 52.9% boys' sports attitudes above good level, while girls' sports attitudes being above good are only 52.1%. It also illustrates that nowadays, information and science and technology are rapidly developing, Chinese teenagers' way of accepting sports information and their sports consciousness are different, which leads to their sports behaviors and sports attitudes having obvious gender difference, and it is necessary to further analyze sports medium transmission.

Nowadays, material and information are rapidly developing, teenagers' understanding ways of each kind of information have also gone through dramatic changes, from the most primitive speech communication that is by the form of language, carries out person to person communication to picture words spreading, then to today's broadcasting, television, internet, network, as well as new emerging media communication that includes cell phone newspaper, mobile TV and so on. Its development mainly goes through Fig. (4).

Sports development benefits from its transmission universality, sports transmission paths are quite a lot. With the development of economy as well as information and technology constantly updating, sports transmission paths in-

Table 4. The level of teenager contacting with sports through different mediums.

Unit%	Newspaper	Broadcast	Internet	Books
Frequently(>5 times/week)	14.9	26.6	31.9	14.6
Sometimes(3~4 times/week)	22.9	23.8	22.2	14.9
Occasionally(1~2 times/week)	25.9	22.1	24.3	22.6
Basically not(<1 times/week)	36.3	27.6	21.6	47.9
Total	100.0	100.0	100.0	100.0

Table 5. Duration that teenagers contact with different mediums' sports information.

Unit%	TV	Newspaper	Broadcast	Internet	Books
Not touch	23.5	34.0	26.4	18.8	44.7
Within 30 minutes	37.0	34.2	25.8	18.8	23.1
Above 30 minutes	39.6	31.7	47.8	58.4	32.2
Above 1 hour	24	15.4	27.3	37.4	23.4
Above 2 hours	15.5	7.5	15.6	23.2	17.4
Above 3hours	8.1	4.6	10.2	13.7	12
Above 4 hours	4.6	2.5	4.9	9.7	0.4

crease, its transmission methods also develop. These are of great significance in Chinese residents' daily life. Below Table 4 is level that Chinese teenagers contact with different sports mediums information, data is from network survey:

By above data, it indicates that television, internet, broadcast are main mediums that contemporary teenagers contact with sports information, teenagers that their sports information contacting frequency being above 5 times per week, their medium ways and proportions are respectively television 34.4%, internet 31.9%, and broadcast 26.6%. Among proportions that sports information contacting frequency being lower than one time per week, books proportion is the largest that is 47.9%. It is clear that most of teenagers contact and understand sports information through relative advanced ways, besides books are also good paths to sports information transmission and sports information understanding.

With the development of era, medium transmission ways become more and more developed, contemporary teenagers are driving forces of social progress, their ways to understand external information are also changing with the improvement of times. In sports transmission, medium ways and attention duration that teenagers contact with sports information are also different. Below Table 5 is Chinese teenagers' duration of contacting with different mediums' sports information, it compares teenagers' duration of contacting with different mediums' sports information through data comparison.

Above data indicates that in sports information understanding aspect, Chinese contemporary teenagers preferred

ways are mainly television, internet and so on, and contacting time is basically within 30 minutes. The contacting time being above 30minutes are mainly by internet, the number of people occupies 58.4%, secondly is broadcast and television, the number of people respectively occupies 47.8%, 39.6%. Among the group that not touch mediums, books' proportion is the highest that is 44.7%.

2.4. Influential Relationships Between Level of Teenager Contacting with Different Mediums' Sports Information and his Sports Behavior

Correlation analysis is utilizing software to handle with data, compares correlation by comparing correlation coefficient sizes. Common correlation coefficient has Pearson correlation coefficient and Spearman rank correlation coefficient. The paper utilizes Pearson correlation coefficient to make correlation comparison.

Pearson correlation coefficient is used to show two variables similarity extent mathematical statistical quantity, it can be used to make quantitative calculation on two variables similarities. Its calculation formula is as following:

$$\rho(X, Y) = \frac{\text{cov}(X, Y)}{\sigma_x \sigma_y} = \frac{E((X - \mu_x)(Y - \mu_y))}{\sigma_x \sigma_y}$$

Among them, covariance is used as numerator, is product of two variables standard deviation, and it requires two variables standard deviation not to be 0.

And $\mu_x = E(X), \sigma_x^2 = E(X - \mu_x)^2 = E(X^2) - E^2(X)$

Table 6. Sports information ways relative data table.

	Television	Newspaper	Broadcast	Internet	Books
Sports attitude <i>R</i>	.337**	.109**	.515**	.127**	.112*
<i>P</i>	.004	.001	.002	.008	.036

** It indicates that significant correlation is achieved in the level of 0.01

Table 7. Sports information time correlation analysis data table.

	Television	Newspaper	Broadcast	Internet	Books
Sports attitude <i>R</i>	.206**	.415**	.341**	.303**	.108*
<i>P</i>	.001	.014	.006	.000	.041

** It indicates that significant correlation is achieved in the level of 0.01

Table 8. Correlation analysis data table.

	Newspaper	Broadcast	Internet	Classmate	Family
Sports attitude <i>R</i>	.113**	.109**	.089**	-.071*	-.106**
<i>P</i>	.000	.000	.003	.017	.000
	Telephone	Message	Bulletin board	Books	Else
Sports attitude <i>R</i>	-.047	-.073*	-.054	-.105**	.089**
<i>P</i>	.119	.015	.068	.000	.003

Therefore, Pearson correlation coefficient can also be written as:
$$\rho(X, Y) = \frac{E(XY) - E(X)E(Y)}{\sqrt{E(X^2) - E^2(X)}\sqrt{E(Y^2) - E^2(Y)}}$$

When two variables Pearson correlation coefficient gets closer to 1 or -1, it shows the two correlations is big, or closely related. It gets closer to 1 show the two are in positive correlation; on the contrary it gets closer to -1 show the two are in negative correlation.

2.5. Teenager's Sports Information Accepting and Sports Attitude Correlation Analysis

Carry out correlation analysis of teenager accepting sports information ways data table, sports information accepting time data table and sports attitude data table, according to above process, utilize spss software, it gets Tables 6 and 7 results.

By above correlation analysis of teenager accepting sports information ways, sports information time and sports attitude, it can get conclusions that no matter from teenager sports information understanding time, or understanding ways, contemporary teenagers keen on television, internet and broadcast these three ways, their sports attitudes are also relative higher. Internet, television, and broadcast are temporarily relative higher developed information transmission and exchanging ways, and also ways of most popular in public daily life, their impacts on teenagers' sports behavior also should not be underestimated.

2.6. Sports Information Cognitive Channel's Impacts on Teenager's Sports Attitude

In numerous sports information cognitive channels, every channel has its features, as for newspapers and periodicals as well as broadcast, the newspapers and periodicals can be repeatedly read without time limits that is relative convenient, while broadcast has stronger appeals that can stimulate audience's association. By comparing, television and internet can achieve visual and audio double functions. Television meets audiences' audition, and meanwhile it meets audiences' visual enjoyment, and internet not only has television's visual and audio effects advantages, but also can support on-line and replaying, sports games can be watched and sports news can be read at any time in anywhere, its functions have convenience, promptness, timeliness, long lasting, which allows users to initiative click needy information, meets audiences demands to greater level, is one of ways that most popular among contemporary teenagers, as Table 8.

In above some kinds of sports information cognitive channels, there are seven kinds of cognitive channels and teenager's sports attitude achieve significant correlation in the level 0.01, besides two kinds of them achieve significant correlation in the level 0.05. Among them, television, broadcast, internet, newspapers and periodicals magazines and others correlations with teenager's sports attitude are respectively 0.185, 0.109, 0.089, and 0.113 ($P < 0.01$). Thereupon, teenager cognitive channel on sports information has positive correlations with his sports attitude.

Table 9. Comparative analysis data table.

Way	Total Teenager		Boy		Girl	
	Percentage	No.	Percentage	No.	Percentage	No.
Join sports activities	38.8%	7	48.5%	4	29.5%	8
Watch TV	57.1%	1	54.7%	2	59.3%	1
Listen to music	52.4%	3	49.1%	3	55.6%	2
Surf on line	55.3%	2	59.5%	1	51.2%	3
Travel	24.5%	9	26.6%	9	22.4%	10
Chat with friends	43.2%	5	41.4%	7	44.9%	5
Read books	48.1%	4	45.4%	5	50.7%	4
Read newspapers and magazines	41.3%	6	39.2%	8	43.2%	6
See a movie	37.9%	8	42.7%	6	33.2%	7
Play games	12.4%	11	16.8%	10	8.2%	12
Go shopping	20.6%	10	13.7%	11	27.3%	9
Else	9.9%	12	8.8%	12	11.0%	11

Table 10. Teenagers' sports information concerns comparison.

	Boy		Girl	
	Percentage	No.	Percentage	No.
Sport news	63.3%	1	62.6%	1
Athletics	49.3%	4	41.3%	3
Sports knowledge	40.1%	5	38.6%	5
Sports character	54.0%	2	47.7%	4
Sports trends	39.4%	6	40.0%	7
Sport comment	24.5%	8	26.9%	2
Sport service	25.5%	7	25.0%	8
Report(news)	50.9%	3	49.5%	6
Else	14.6%	9	8.0%	9

In above several sports information transmission paths, different mediums, their transmission ways are different, therefore obtained effects when teenagers apply them are also different. It shows that different mediums transmission ways have different features; they are also obvious different in the impacts on teenagers sports information, and further affect teenager's sports behavior and sports attitude.

3. TEENAGER'S SPORTS BEHAVIOR GENDER DIFFERENCE UNDER MEDIUM TRANSMISSION

3.1. Way of Teenagers Utilizing Leisure Time and Their Participation in Sports Activities Comparison

Teenagers are driving forces of sports transmission, and are also foundation of sports development, teenagers' sports

behavior is crucial to sports development. At leisure time, teenagers utilization on spare time is also different that has obvious gender difference. Below Table 9 is comparison of Chinese teenagers' spare time utilization ways.

It indicates that watch TV is the leading way that boy and girl spend their spare time, secondly is surfing on line and listening to music. As for boys, join sports activities ranks the seventh in numerous ways of spending spare time, while in girls, join sports activities ranks the eighth. Therefore, boys' and girls' enthusiasm in joining sports activities are not higher, their sports behaviors are not quite active.

3.2. Analysis of Teenager Sports Information Concerns

When teenagers understand sports information, attentions to sports contents are also different, for boys, most of them

are fond of sports news, focus on sports character, understand report, and exchange in daily life through internet, television and chatting with friends and else; for girls, they focus on understanding sports news, sports comment and athletics and so on. Below Table 10 is comparative analysis of Chinese teenagers' different genders sports information concerns:

Above statistical Table 10 shows that teenagers' level of attention to sports information and concerns have great differences and gender difference, overall no matter boy or girl, they relative focus on sports news. In addition, boys attentions to sports character and report are larger, girl's level of attention to sports comment and athletics are larger.

CONCLUSION

The paper starts analysis of medium's impacts on teenager's physical health and sports behavior. Firstly, it carries on statistical analysis of medium's roles in teenager's physical health, by consulting relative investigation data, drawing statistical table and statistical figure, it studies medium's liabilities in teenager's physical health and its roles in teenager's physical health propagandizing, and then gets conclusion that it undertakes great liabilities in guiding parents, different cities residents' medium accessing paths are different, their application of medium also has obvious differences, internet is one of mediums that most widely used.

Secondly, the paper carries out studies on medium's impacts on teenager's sports behavior from level of teenager contacting with different mediums' sports information and time the two aspects, utilizes statistical figures and statistical tables to make analysis, and studies teenager's sports behavior and the two aspects correlations by correlation analysis, finally it gets conclusions that television, internet and broadcast are main mediums that contemporary teenagers contact

with sports information, and contacting time is basically within 30 minutes, teenager's sports medium contacting time and contacting ways have close relationships with his sports attitude.

Finally, on the basis of above analysis, it studies teenagers' sports behaviour gender difference under medium transmission, by comparing with teenagers' spare time utilization ways and their attentions to sports information, gets conclusions that different genders teenagers groups enthusiasm in joining sports activities are not very high, and gender difference is obvious, their sports behaviors are not active. In the aspect of sport information concerns, no matter boy or girl, they both focus on sports news.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

ACKNOWLEDGEMENTS

This work is supported by the countermeasure Research of Teenager's Physical Development from the Perspective of Family Sports (2014 Guangdong planning projects of philosophy and Social Sciences).

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Received: June 10, 2015

Revised: July 29, 2015

Accepted: August 15, 2015

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