

Social capital matters: a study of how parents' social capital impacts school children's vision health

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Abstract. In a digital society, students' visual health has been heatedly discussed in recent decades by academia and the public, as the age at which people use electronic devices for the first time is getting younger. This study was conducted to examine the implications of social capital, economic status, and parental perception on the vision health of elementary school-aged children in Qionghai, Hainan, one of the rural areas in China. The researcher used the purposive sampling method to facilitate target selection. Then a questionnaire that consisted of Likert scales, multiple choice questions, and short answer questions was designed to help approach data collection.

Keywords: social capital, vision health, rural China, primary school children.

1. Introduction

In recent years, with the rapid development of society, the connections between social capital and health and well-being have become increasingly intertwined in this developing world, with the two being closely related and influencing each other. Consequently, many studies have begun to turn their field of inquiry to the relationship between social capital and health and well-being in developing countries, investigating a wide range of aspects of this (Zhou, et.al, 2020). As a representative developing country, China is selected as the research context and the target population of many relevant studies has been set lately. Due to rapid demographic and social growth, parental and community expectations of children have led to growing competitive pressures among adolescents, which has often led to neglect and lack of attention to vision health, further leading to a massive increase in the number of adolescents suffering from myopia and a decrease in the age of children suffering from this condition.

2. Target population

Upon review of a number of studies, it was shown that the sampling method for investigating the relationship between social capital and another dependent variable is through purposive sampling (Zhou et.al., 2021; etc), where the researcher defines multiple definitions of the target population and purposefully identifies the appropriate respondents for the study. Three of these papers have focused on China, one of which was as diverse as possible in terms of age, while the other two quantitatively have focused on a particular age group, namely teenagers and older adults (Zhou et.al., 2021; etc). However, in this paper, the target population is considered in a different way because the researcher intends to focus on primary school students in rural China, the younger age groups where variables are particularly difficult to control to find a congenial method to obtain reliable data.

3. Social capital

In addition to the choice of the study population and its sampling strategy, the methods and theories used in these studies are also interesting and worthwhile learning from. First and foremost, their respective definitions and the conceptualization of social capital are broadly divided into two categories, structural and cognitive, with some individual studies separating the two and measuring them simultaneously (Cramm et.al., 2012; etc). In the case of structure, many studies have focused on the interpersonal network between the participants and his or her neighbourhood and the link between the two, and the social group or system to which the participants belong. For cognitive, it

looks at the trust that others have in the research participant. Moreover, the other perspective on the conceptualization of social capital is to look at both neighbourhood individual levels (Mohnen et.al., 2011; etc). Both theoretical approaches have unique benefits. The structural and cognitive aspects can be judged in such a way as to derive how community and outside influence the individual and how the links between the two lead to changes in the individual's social capital. The individual and neighbourhood type of the instrument is used to assess social capital at the individual level, while social capital in the neighbourhood can be a good way of seeing the impact of the individual on the outside world or on the social capital of others.

4. Perception of vision health

According to a review of the paper written by Gong in 2022, the areas that the research has focused on to see parents' perceptions of myopia can be broadly classified into three categories. The first is parental attitudes towards outdoor activities, which can directly affect the likelihood of children going outside to relax, and thus further affect their vision problems. Then there is the importance parents attribute to their children's studies. If parents place a high value on studies, then they tend to neglect their children's eye health. Finally, the parents' education level would also tell their perception of myopia. Parents who receive a higher level of education may be able to be informed or aware of the importance of vision health, thus becoming more attentive to their children's vision health (Gong, 2022).

Existing research investigating the effect of NS on individual health has focused on urban residents' mortality areas (Van Hooijdonk et.al., 2008, etc). However, studies that focused on rural neighbourhood contexts in China are still underdeveloped (Cui et.al., 2021; Yip, 2007). There are even fewer studies that examine the effects of NS on vision health among adolescents. While most studies find that NS is positively correlated with individual health, it is unclear the role of other factors such as parents' perception of vision health and intervention, and the family's socioeconomic status. Ziersch (2005) and Aminzadeh (2013) have emphasised the important role of socioeconomic status. Zhou (2021) reported that both F.E. and N.E. are important factors.

5. Vision health

Besides social capital and perception of myopia, the dependent variable is also of considerable note in the measurement of well-being or more specifically, the measurement of vision health. Many of these studies have used self-report vision health scale instrument measures to define a person's well-being level, which is a reliable indicator of vision health. (Frank A. Sloan et al., 2005; etc)

6. Hypothesis

Based on the literature review, the researcher proposed several hypotheses. As previous studies have regularly concentrated on both social and individual capital but have rarely paid attention to neighbourhood social capital and individual social capital separately, the researcher decided to conduct separate studies to examine the implications of both for vision health. Therefore, the first and second hypotheses respectively are:

H1 - In general, participants with higher social capital have better visual health

H2 - Personal social capital has a greater impact on visual health than neighbourhood social capital.

Furthermore, according to the findings of Gong (2022), the role and influence of parents are crucial to the maintenance of vision health in school children. Both their general eye health habits and their values regarding eye health have a secondary consequence on their children's eye condition. Therefore, the third hypothesis set from this perspective is:

H3 - Parents' perceptions of vision health issues are related to their children's vision health

In this context, the third hypothesis refers to how family values may influence or subconsciously shape the behavioural habits of children, which are more or less related to the economic status of the family and the education level of the parents. Therefore, in order to further substantiate and confirm the relationship between these two aspects, the fourth and fifth hypotheses are:

H4 - Higher family socio-economic status is associated with better visual health.

H5 - Children with more educated parents have better visual health.

Finally, after reviewing related works of literature, the association between gender and vision health is not mentioned so it is difficult to make a connection between the two superficially. As a result, a sixth hypothesis is set to confirm this and determine if this is not an area of concern by working through the data:

H6 - There is no significant difference between the sexes in terms of children's visual health.

7. Method

The research site chosen for this study was a remote area of Qionghai, Hainan Province, China, where there is a relative paucity of awareness and social concern about vision health. Qionghai ranks sixth in GDP among the cities of Hainan province in 2022, with agriculture, forestry, livestock, and aquaculture as its main industries (Citation). There are a total number of 4 participants who are involved in the survey output data. The participants were selected through purposive sampling based on previously set conditions.

This paper designs a questionnaire as the main instrument. To constitute the questionnaire, the researcher applied a thematic classification to deconstruct the key variables in the research questions into five sections. The first section on the demographic part of the questionnaire was designed using a set of multiple-choice questions and short answer questions. The social capital section is categorised into neighbourhood social capital and individual social capital, each measured in relation to the other. For this paper, the subject of neighbourhood social capital is measured with eight questions while the measure of individual social capital is based on six questions, both of which are scored on a five-point Likert scale. Finally, the measurement of family economic status draws upon scholar Yip's research (Yip, 2007) and consists of four questions.

Parental perceptions of visual health are conveyed through ten related questions on a brief answer and Likert scale, which is designed to reflect the issues and parental views. Based on the responses to the questions, parental attitudes and awareness towards vision health are evident and subconscious.

As mentioned above, this survey adopted the self-report vision health scale instrument measures to define a person's vision health (Citation). The questionnaires were delivered through the application of the corporate social media software WeChat. Participants were grouped together in a unified WeChat group for the distribution of the questionnaires. The administration and collection of questionnaire data were carried out through the platform Questionnaire New.

8. Results

Table 1. Descriptive statistics of demographic variables

Parent gender		
	Female	4
	Male	0
Age		
	18-30	0
	31-40	4
	41-50	0
	51-64	0
	65+	0
Education		
	Primary & below	0
	Middle School/Technical secondary school	4
	High School	0
	University/Tertiary	0
	Postgraduate (including Master, PhD)	
Housing type		
	Flat	2
	High-rise	0
	Detached house	1
	Single room	1
Outdoor space (Y/N)		
	Y	1
	N	3
Children's gender		
	Male	2
	Female	2

Grade		
	1	
	2	
	3	
	4	
	5	
	6	
Seat position		
	3/4	
	3/8	
	3/4	
	2/4	
Vision problem among family members (Y/N)		
	Y	1
	N	3
Family Economic Status		
	Max	15
	Min	10
	Average	12.5

9. The general pattern in the demographic variables of the participants

Among the participants surveyed, the proportion of female parents in the middle age group of 31 to 40 years old accounted for the entirety of the respondents, while the involvement of parents in the rest of the age group and of males is practically absent. This reflects the prevailing age of childbearing and the poor level of male engagement in matters relating to child care, and together with the statistics indicating that the participants were all middle school or technical secondary school educated, this highlights the economic backwardness of local women leaving school early and entering society early.

In addition, the data also shows the type of building or house that the participant households resided in, with two-quarters of the participant households living on a flat floor and one-quarter each living in a private house or a single room. No participant is living in a high-rise building, which indicates the contemporary development of the area and reflects that agriculture, forestry, and fishing are the main sources of income.

Further, statistics on children are available. In terms of the gender of the children, 50 per cent of the children are of each gender. The general distribution of the children's grades is fourth grade, which is 75 per cent, while the left 25 per cent of the children are in fifth grade.

As measured by the survey, the total number of rows of seats in all the children's classes can be divided into two categories. A quarter of the classrooms had four rows of seats, while the remaining quarter had twice as many rows of seats, making a total of eight rows. Out of these three quarters, approximately 33.3 per cent of the children sit in the third row of the class. One hundred per cent of the children in the other quarter sat in the third row of the classroom. Regarding the question of whether direct family members had any past vision problems or myopia, seventy-five per cent of the families reported that this was not the case, while twenty-five per cent of the families replied in the affirmative.

In terms of the economic status of the family, the calculation of each family's economic status out of 20 points showed that the family with the highest score was 15 and the family with the lowest score was 10. Besides, the average score for each family was 12.5 points.

Table 2. Correlation coefficients

	Correlation coefficient
SC and PV	-0.11
N.SC and PV	0.17
I.SC and PV	-0.27
FES and PV	0.94

Table 3. ANOVA: single factor (children's gender)

	P-value
Between groups	0.323

10. Correlation analysis

The correlation between the family's economic status and its values regarding visual health and the importance it places on visual health prevention can be seen in the correlation coefficient calculated in the graph above. The correlation coefficient is 0.94, demonstrating that there is a positive relationship between the two. The overall trend is that the higher the economic level of the household, the more positive the values of the household in terms of visual health, and the more importance the household places on the prevention and protection of visual health. In addition, 0.94 is close to unity, so the two are still relatively correlated and can influence each other. All these support Hypothesis 1, which states that the better the family's financial situation, the more positive the perception of vision health.

The absolute value of the correlation coefficient for individual social capital is greater than the absolute value of the correlation coefficient for neighbourhood social capital. Therefore, H2 is supported. However, the directions of the two correlation relationships are different. One has a Positive trend, the other has a Negative trend. This is probably due to the limited variance among the data.

The correlation between FES and Perception of vision health prevention is significant. This supports the hypothesis that families with higher economic status tend to emphasize more on prevention of vision health problems.

11. Gender difference in terms of Perception of vision health prevention

It is not clear whether gender plays a significant role in influencing the parent's perception. After performing a single factor ANOVA analysis, no significant difference was found between parents of male students and those of female students. Report the p-value of the ANOVA. This means that children's gender does not play a significant role in shaping their parent's perception of vision health prevention.

12. Digital device usage, length of studying and frequency, and length of outdoor activities

The main outdoor activities of the children of the participants were diverse, with the majority types being basketball, rope skipping, running, shopping, badminton, and hide-and-peek. While the data can be concluded that in general the frequency and length of outdoor activities for these children are still low and restricted. This may further affect the vision health of the child due to its lack of eye relaxation. There are further reasons for the limited outdoor activities. Considering the use of electronic devices and the number of time that children spend studying, it is clear that children's eyesight health in this area is generally affected by the high priority parents place on studying. Most parents state that they choose to compromise eye relaxation time to give their children additional study time, and often prefer to let their children use electronic devices to facilitate relaxation rather than letting them go out and play. This suggests that children's eyesight is influenced by the extent to which parents place a premium on relaxation activities and the importance parents place on learning.

13. Discussion

In general, the results of the above observations and analyses imply that individual social capital, family economic status of parents, as well as the degree to which the perceived attention to vision health is neglected, have a direct impact on children's vision health. Despite the findings of the current study, there are limitations to this study. Due to the lack of coverage and the number of participants in the study, the results may not be as reliable as expected. Therefore, future research should cover a larger number of respondents in order to improve the reliability of the results. [Please also add a few sentences to show what findings in previous research have been confirmed by this study and what are some future directions scholars can take to further investigate the issue.]

14. Conclusion

In conclusion, it is clear from this investigation that the extent to which rural areas are unexplored or underdeveloped, the economic status of families, and the individual social capital of parents do have a greater impact on a child's eye health than the social capital of the community. Parents' perceptions of things such as schooling, which are shaped by their education, exposure, and past experiences, also have a prolonged impact on their children's eye health. However, neither the gender of the parent nor that of the child has any correlation with the child's vision health.

Overall, this study has helped to shed light on the problems associated with the lack of educational resources and lagging access to information in rural areas, raising awareness of the problems and the reasons behind their occurrence and helping to inform further research to address the root causes.

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