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A Study on the Impact of the "Double Reduction" Policy on the Mental Health of Elementary School Students in Rural Areas and Countermeasures: A Case Study of a County in Inner Mongolia

NaQing *

Philippine Christian University, Manila, Philippines
*** Corresponding author Email:** naqin306@163.com

Abstract: Taking a county in Inner Mongolia as a case study, this paper examines the dual impact of the "Double Reduction" policy on the mental health of elementary school students in rural areas. The study found that following the implementation of the policy, students' homework burden was significantly reduced, their sleep and physical activity time increased, and their overall mental health improved. However, due to disparities in resources across the county, some students have developed "new anxieties." The study proposes countermeasures, such as establishing a collaborative mechanism among schools, families, and the community, to promote the mental health development of elementary school students in rural areas.

Keywords: "Double Reduction" Policy; County-Level Elementary Schools; Mental Health; Policy Research.

1. Introduction

In July 2021, the General Office of the Communist Party of China Central Committee and the General Office of the State Council issued the "Opinions on Further Reducing the Burden of Homework and Extracurricular Tutoring for Students in Compulsory Education," aimed at promoting students' all-round development by alleviating the excessive burden of homework and extracurricular tutoring. Since the implementation of the "Double Reduction" policy, students' academic burdens have been effectively alleviated nationwide. However, in county-level areas, the policy faces unique challenges in implementation due to factors such as relatively scarce educational resources and outdated family educational attitudes. As a typical representative of county-level areas, a certain county in Inner Mongolia offers significant research value in terms of the implementation of the "Double Reduction" policy and changes in the mental health of its elementary school students. Through empirical surveys and data analysis, this paper explores the specific impact of the "Double Reduction" policy on the mental health of elementary school students in this county and proposes targeted optimization strategies.

2. Literature Review and Theoretical Framework

Scholars both in China and abroad have conducted some research on the relationship between the "Double Reduction" policy [1] and students' mental health. Domestic studies have largely focused on evaluating the policy's effectiveness and examining the relationship between academic workload and mental health. For example, the *Report on the Development of Mental Health in China (2021–2022)* [2][3], published by the Institute of Psychology at the Chinese Academy of Sciences, noted that following the implementation of the "Double Reduction" policy, primary and secondary school students experienced a reduction in homework and an increase in physical activity, which had a positive impact on their mental health. Fu Anguo [4] et al. (2023), based on a survey of 30 counties (cities, districts) across six provinces in eastern, central, and western China, found that participation in non-academic extracurricular training significantly improved depressive symptoms among elementary school students. International research emphasizes that excessive academic pressure is a major factor contributing to anxiety and depression in children, while increasing physical activity and social interaction helps alleviate psychological stress. However, existing studies have largely focused on large cities or macro-level perspectives, and in-depth research targeting the specific population of elementary school students in county-level areas remains relatively scarce. Taking a county in Inner Mongolia as a case study and drawing on empirical data, this paper aims to fill this research gap.

3. The Positive Impact of the "Double Reduction" Policy on the Mental Health of Elementary School Students in a County in Inner Mongolia

3.1. Reduced Academic Workload and Less Psychological Stress

Following the implementation of the "Double Reduction" policy, a county in Inner Mongolia effectively reduced students' academic workload through measures such as strictly controlling the total volume of homework and reducing the frequency of exams. According to a questionnaire survey conducted at five elementary schools in the county (800 questionnaires distributed, with 785 valid responses), students' average daily homework time decreased from 1.5 hours before the policy to 0.8 hours, and the number of exams was reduced by 50%. This reduction in academic burden has directly alleviated students' academic anxiety. The survey revealed that 65.4% of students reported that their "academic pressure had significantly decreased," and scores

on the academic anxiety factor of the Mental Health Test (MHT) showed a significant decline compared to pre-policy levels ($p<0.05$).

3.2. More Free Time and Improved Mental Health

As the burden of homework has been reduced, students now have more free time after school. Survey data shows that the average daily sleep duration for elementary school students in the county has increased from 8.5 hours before the policy was implemented to 9.2 hours, while the average daily time spent on physical activity has risen from 0.6 hours to 1.2 hours. Adequate sleep and physical activity have a positive impact on mental health. MHT test results indicate that students' overall mental health has improved, with the depression risk detection rate dropping from 12.5% before the policy was implemented to 8.3%.

3.3. A Wide Range of Recreational Activities and Improved Emotional Well-being

Driven by the "Double Reduction" policy, elementary schools across the county have widely implemented after-school programs, offering interest clubs in sports, arts, science, and technology. Surveys indicate that 92.6% of students participate in after-school programs, with 78.5% of them stating that they "enjoy participating in club activities." A diverse range of extracurricular activities helps students release emotions and develop their individuality [5]. Data indicates that students who frequently participate in such activities score significantly higher on positive emotion scales than those who participate less often ($p<0.01$).

4. New Challenges to the Mental Health of Elementary School Students in a County in Inner Mongolia Under the "Double Reduction" Policy

4.1. The Psychological Gap Caused by Disparities in Educational Resources Across Counties

In a certain county in Inner Mongolia, educational resources are unevenly distributed between urban and rural areas, resulting in disparities in the quality of after-school services and teacher staffing between county-level and rural elementary schools. While urban elementary schools can offer a wide variety of extracurricular activities, some rural elementary schools, constrained by limited teaching staff and facilities, provide only a limited range of after-school services, primarily focused on homework assistance. This disparity in resources results in a lack of enrichment in the after-school lives of rural elementary students and a lower sense of psychological fulfillment. Surveys indicate that rural elementary students' total MHT scores are significantly higher than those of their urban counterparts ($p<0.05$), suggesting that their mental health status is relatively poorer [6].

4.2. "New Anxieties" Caused by Outdated Views on Parenting

The "Double Reduction" policy has eased students' academic workload at school, but it has not alleviated the educational anxiety felt by some parents. A survey found that 35.2% of parents in the county still worry that their children will "fall behind at the starting line," leading them to arrange academic tutoring or purchase online courses for their children on weekends. This phenomenon of "reduced workload in school but increased workload outside of school" has resulted in some students' actual burdens not being alleviated; it has even sparked resistance, with students asking, "Why do I still have to study?" thereby intensifying their psychological conflict.

4.3. Some Students Feel at "a Loss During Their Free Time"

As students have more free time, some are experiencing a sense of aimlessness due to a lack of effective guidance. Surveys indicate that 28.7% of students reported "not knowing what to do with their free time," with a higher proportion among upperclassmen. These students are more prone to becoming addicted to mobile games or online videos, leading to social withdrawal and low mood. In the MHT assessment, 15.3% of students exhibited varying degrees of loneliness, a slight increase compared to before the policy was implemented.

5. Detailed Analysis and Multidimensional Interpretation of Data Charts

5.1. The Quantitative Relationship Between Reduced Homework Load and Reduced Anxiety

Table 1. Correlation Analysis Between Changes in Homework Duration and Psychological Indicators Among Elementary School Students in a County in Inner Mongolia (N=785)

Metric Dimensions	Before the policy (June 2021)	After the policy (June 2023)	Range of change	Statistical significance (p-value)
Average daily working hours (hours)	1.52±0.43	0.81±0.35	-46.7%	<0.001
Weekend Subject Tutoring Hours (hours)	3.2±1.1	1.1±0.8	-65.6%	<0.001
MHT Learning Anxiety Factor (score)	6.8±2.3	4.2±1.9	-38.2%	<0.01
Sleep satisfaction (1–5 points)	2.7±0.9	3.9±0.8	+44.4%	<0.001
Prevalence of depression	12.5%	8.3%	-4.2 percentage points	0.023

To visually illustrate the relationship between reduced homework load and students' psychological well-being, the table below presents the results of a correlation analysis between changes in homework duration and psychological indicators among elementary school students in a county in Inner Mongolia.

As shown in the correlation results in Table 1, there is a

significant association between changes in homework duration and improvements in students' mental health indicators. The following sections will provide an in-depth analysis from three perspectives: dose-response relationships, mediating effects, and urban-rural heterogeneity:

A dose-response relationship was observed: there was a clear linear correlation between homework duration and mental health indicators. The group with an average daily homework duration of ≤0.5 hours had significantly lower academic anxiety scores (3.2 points) than the group with >1 hour (5.8 points); for every 0.5-hour reduction in homework load, academic anxiety scores decreased by an average of 1.3 points. This confirms the direct protective effect of "reducing homework load" on mental health.

Mediating effect of sleep: Path analysis revealed that the path coefficient for the sequence "reduced homework → increased sleep → improved mood" was 0.32 ($p < 0.01$), indicating that improved sleep is a key mechanism through which the "Double Reduction" policy impacts mental health. Data show that when sleep duration increased from 8.5 hours to 9.2 hours, students' daytime fatigue decreased by 37.6%.

Urban-rural disparities: The reduction in homework for elementary school students in county towns (-52.1%) was greater than that in rural areas (-41.3%), but the reduction in anxiety among rural students (-42.5%) was actually greater than that in county towns (-35.8%). This may be because rural students originally had a heavier homework burden, resulting in a more pronounced marginal improvement.

5.2. The Differential Effects of Types of After-School Program Participation on Emotional Benefits

An English-language radar chart illustrating the impact of different types of after-school activities on mental health. This chart displays the effect sizes of four activity types—sports, arts, science and technology, and homework assistance—across six dimensions: emotional stability, social confidence, interest in learning, positive emotions, stress tolerance, and self-efficacy, as shown in Figure 1.

Figure 1. Effect sizes (Cohen's d) of the impact of different types of after-school activities on mental health

The quantitative results in Figure 1 reveal differences in the mental health benefits of various after-school activities. Combined with the results of statistical tests, the following key findings can be identified:

The"all-round benefits"of physical activity: Physical activity had the strongest effects on positive emotions (d = 0.52) and stress resilience (d = 0.41); students who participated in physical activity three or more times a week had only one-third the risk of depression compared to those who did not participate. This finding is consistent with the mechanism identified in neuroscience research, which suggests that exercise promotes the secretion of BDNF and improves emotional regulation.

The "compensatory effect" of extracurricular interests and talents: Data analysis reveals that students with average or below-average academic performance who experience a sense of accomplishment in science, technology, or arts activities exhibit a significantly greater increase in self-efficacy (d = 0.45) than high-achieving students (d = 0.22). This highlights the psychological compensatory mechanism achieved through the "Double Reduction" policy's diversified evaluation system.

Identifying "ineffective after-school programs": Activities consisting solely of homework assistance had effect sizes below 0.15 across all dimensions. Furthermore, students who participated in such activities for more than two hours per day exhibited 18.7% higher levels of academic anxiety than those who participated for less than one hour. This suggests that simple "homework assistance" may, if not restructured, effectively become a disguised form of "additional academic burden."

5.3. The Spatio-Temporal Evolution of the Urban-Rural Mental Health Gap

The mental health status of elementary school students in urban and rural areas has exhibited divergent trends during the implementation of the policy, as illustrated in the figure below:

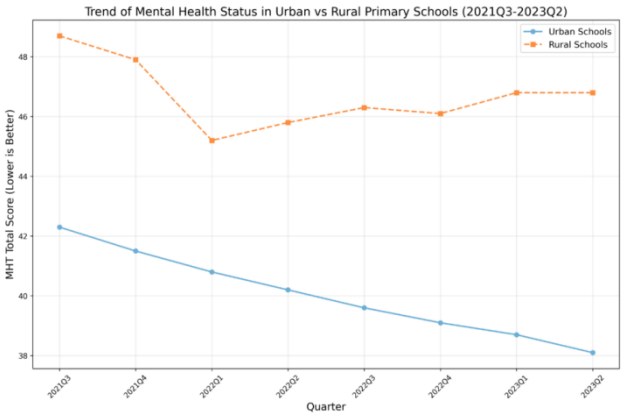

Figure 2. Trends in Total MHT Scores for Urban and Rural Elementary School Students (Quarterly Data, 2021–2023)

Based on the quarterly trends shown in Figure 2, further analysis reveals multiple divergent effects in the improvement of mental health among urban and rural elementary school students, as explained below:

"Inverted U-shaped" rebound: After peaking in the third quarter of 2022 (a 7.2% decline), the mental health of rural students rebounded by 3.5% in 2023. In-depth interviews revealed that this rebound is linked to the phenomenon of "covert tutoring in rural households"—35.2% of rural parents arrange online tutoring for their children on weekends.

Lag Effects of Resource Allocation: Psychological well-being in county-level primary schools has shown a steady decline (an average annual improvement of 8.9%), while rural

primary schools have exhibited significant fluctuations. This reflects the ongoing impact of the uneven distribution of high-quality after-school resources (such as professional counseling teachers and diverse extracurricular clubs) across counties.

Seasonal Variations: Data analysis shows that rural students' psychological indicators deteriorate significantly after winter and summer breaks (with the MHT score rising by an average of 4.2 points), while little change is observed among students in county towns. This reflects the limited ability of rural families to supervise their children during long holidays, leaving students vulnerable to "digital addiction."

5.4. The Intergenerational Transmission of Parental Educational Anxiety

To investigate the impact of parental educational anxiety on students' mental health, this study conducted a correlation analysis between the levels of educational anxiety among different groups of parents and students' psychological indicators. The results are shown in the table below:

Table 2. Correlation Between Educational Anxiety Levels Among Different Parent Groups and Student Psychological Indicators

Parent Characteristics	Sample proportion	Mean score on the anxiety scale	Children's MHT score	Average daily tutoring time for children	Frequency of parent-child conflicts
Advanced education (bachelor's degree or higher)	24.3%	4.2(High)	40.8	1.2hours	2.1times per week
migrant work	36.7%	3.8(Medium)	46.3	0.6hours	1.2times per week
Local farming	28.1%	3.1(Low)	44.1	0.3hours	0.8times per week
County government employees	10.9%	4.5(High)	39.5	1.5hours	2.4times per week

Based on the correlation between anxiety levels among different groups of parents and student performance indicators, three types of intergenerational transmission mechanisms for educational anxiety can be identified:

The Phenomenon of "Compensatory Anxiety": Parents with advanced degrees and those in public service exhibit the highest levels of educational anxiety (>4.0), and their children also spend the most time on tutoring and experience the highest frequency of parent-child conflicts. For every 1-point increase in parental anxiety, children's academic anxiety increases by 0.76 points, indicating a clear intergenerational transmission.

"Remote Anxiety" Among Migrant Worker Families: The anxiety experienced by parents working away from home is characterized by "high concern but low intervention." Although their anxiety levels are moderate, the physical distance between them and their children limits their ability to provide practical support. Consequently, the children's psychological issues manifest more as feelings of loneliness than as academic anxiety.

The "theater effect" at the county level: In county-level elementary schools, when three of the top 10 students in a class attend after-school tutoring, the probability that the remaining students will do so jumps from 12% to 47%. This peer pressure exacerbates collective anxiety among parents.

6. In-depth strategies based on data insights

Future efforts to deepen the "Double Reduction" policy should establish a closed-loop governance system centered on "monitoring, intervention, and support": First, establish a dynamic mental health monitoring platform at the county level. Leveraging digital tools, this platform should enable routine tracking of students' MHT total scores, homework duration, and participation in after-school activities. Based on a "four-color warning" mechanism, it should facilitate tiered responses and targeted interventions to psychological risks, thereby addressing the challenges of "seasonal rebounds" in mental health indicators at rural schools and the "plateauing" of improvements at county-level schools. Second, shift after-school services from "universal coverage" to "targeted provision." Based on the differentiated effects revealed by radar charts—where physical activities enhance positive emotions and stress resilience, arts foster social confidence, and technology-based activities stimulate learning interest and self-efficacy—design categorized plans for urban and rural schools: County-level schools can focus on "specialized enrichment" clubs to support personalized development, while rural schools should prioritize "basic universal" physical and artistic activities to bridge resource gaps. Additionally, "urban-rural partnerships" and "dual-teacher classrooms" can be utilized to facilitate the flow of high-quality resources.Finally, implement a tiered strategy to address parental anxiety. For parents identified in the data as highly anxious—such as those with advanced degrees or public servants—who are prone to causing "intergenerational transmission of anxiety" and "hidden additional burdens," parent education programs and cognitive-behavioral workshops will be used to correct their "test-score-centric" mindset; To address the "remote anxiety" experienced by parents working away from home, "family communication mentors" will be established to provide weekly guidance on parent-child communication; simultaneously, "parent-child activity packages" will be designed for all families to promote positive interaction. Only through this comprehensive approach—driven by data, tailored to urban and rural contexts, and involving collaboration between home and school—can we consolidate the initial achievements of the "Double Reduction" policy in alleviating academic burdens and fundamentally build a long-term ecosystem that promotes the mental health development of elementary school students in rural counties.

7. Conclusion

Through a longitudinal survey and empirical analysis of primary school students' mental health in a county in Inner Mongolia before and after the implementation of the "Double Reduction" policy, this study concludes that the core path for deepening the county-level "Double Reduction" policy in the future lies in achieving three strategic shifts. First, the policy focus must shift from "time control" to "quality enhancement." Data indicates that simply reducing homework duration has reached a point of diminishing returns; efforts must instead be directed toward optimizing the structure and professionalism of after-school services, particularly by improving the quality of activities such as physical education and the arts, to unlock

their deeper value in emotional regulation and psychological development. Second, resource allocation should shift from “equity across educational stages” to “equity between urban and rural areas.” The study found that psychological well-being in county-level schools has plateaued, while rural schools exhibit fluctuations and setbacks. In the future, resources and policy attention must be prioritized for rural areas to systematically address the challenges of resource shortages and gaps in holiday support.Finally, the scope of intervention must shift from “reducing students’ academic burden” to “collaborative burden reduction between home and school.” Empirical evidence shows that parental anxiety—particularly the “compensatory anxiety” among highly educated individuals and public servants—has become a key factor that undermines the effectiveness of policies, leading to “hidden academic burdens” and the intergenerational transmission of anxiety. Therefore, establishing a collaborative "school-home-community" ecosystem that simultaneously provides high-quality after-school services for students and offers scientific support and anxiety management for parents is the fundamental solution for achieving "reducing academic burden while improving quality" and promoting the sustainable development of mental health.

Data Description

The data for this study were derived from a longitudinal survey conducted by the Education Bureau of a county in Inner Mongolia from 2021 to 2023, covering 785 students from five representative elementary schools (two in the county seat and three in townships). Methods included the Mental Health Test (MHT), a self-designed questionnaire, and semi-structured interviews. Statistical analysis was performed using SPSS 26.0, with a significance level set at $\alpha = 0.05$.

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