

# A Review of Research on the Relationship Between Boarding School and Mental Health

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## ABSTRACT

This review surveys existing data on the relationship between boarding school attendance and mental health outcomes. Many families all over the world choose to send their children to boarding school. Given the current youth mental health crisis, understanding how different educational and parental decisions influence the mental health outcomes of children is extremely important. We review 13 empirical studies on how boarders and non-boarders differ in mental health outcomes. There are three types of study we found in our review: cross-sectional studies, which compared boarders to non-boarders at a single point in time,, cross-sectional longitudinal studies, which compared boarders to non-boarders across multiple time points, and non-comparison surveys, which surveyed boarders only. Taken as a whole, the data show a significant negative relationship between boarding and mental health outcomes, including depression, anxiety, and loneliness. Whether or not a causal relationship exists is less clear from the data. We consider, based on the sample, a number of candidates for causal explanations, including parental alienation, bullying, loneliness, and academic stress. We conclude that, while there is some indication that boarding increases parental alienation, bullying, and academic stress, more studies are required to establish a firm causal relationship between boarding and negative mental health outcomes.

## Introduction

A boarding school is an educational institution where students live on school grounds. These schools have a long history and are prevalent in many countries, including China, Australia, and the United Kingdom. Boarding schools often appeal to parents who cannot reside with their children due to geographical or occupational constraints, as they offer a structured environment where students can focus on their education and personal development.

However, the term “boarding school syndrome” suggests that growing up in a boarding school environment may result in severe psychological distress in some individuals. Mental health issues among high school students have become a significant concern globally. For those who are sending their children to boarding school, the impact of boarding school on students’ mental health is an area for further study.

Common issues such as anxiety, depression and stress have been increasing dramatically over time in youth (Blomqvist et al., 2019). Globally, one in seven 10-19-year-olds experience a mental disorder, including depression, anxiety and behavioral disorders (World Health Organization, 2021). Many factors affect a student’s mental health. These include increased self-awareness, avoidance behavior, perceived rejection by parents, competitive behavior among classmates, and controlling behavior of teachers (Metzke & Steinhausen, 2001).

There is currently a small body of research about how boarding school affects students’ mental health, but there are still areas for improvement. This review explores the interactions between boarding schools and the mental health of students. To address this, we review a variety of sources, including cross-sectional surveys,

longitudinal surveys, cross-section longitudinal surveys, and non-comparison surveys that provide insight into and data on both the boarding school experience and the mental health issues prevalent among adolescents.

The specific mental health issues examined in this review include depression, anxiety, and stress, focusing on how these conditions differ between boarding students and day students, and what mediating variables or causal mechanisms might be at play in explaining any discrepancy.

## Methods

Our sample uses a total of 13 empirical studies on the effects of boarding school on mental health. When selecting the sample, we prioritized recency, high quality research with controls, and large sample sizes. We ultimately focus on a set of medium to large surveys suitable to help us explore causal questions about the relationship between boarding school and mental health outcomes. We excluded studies with non-representative samples. For instance, Friberg et al. (2020) surveyed the mental health of indigenous adults who had gone to residential schools in Norway. The obvious confounding variables in studies like this made them less suitable for the more general question this review is trying to answer.

The studies in our final sample employed three main experimental methodologies, all of which primarily involved surveying students: cross-sectional surveys, cross-sectional longitudinal surveys, and surveys of only boarding students. In this section, we will present the experimental methods of each study contained in each category.

Of the 13, five came from China: Tang et al. (2020), Chen et al. (2020), Li et al. (2023), Xing et al. (2021), and Po et al. (2022). Four came from Western Australia, including Rudrum et al. (2022), Lester and Mander (2015), Lester and Mander (2017), and Lester and Mander (2020). Rau et al. (2018) came from Germany, Wahab et al. (2013) came from Malaysia, Widyaningsih et al. (2022) came from Indonesia, and Hopkins (2021) came from the UK.

### Cross-Sectional Surveys

We identified a total of five solely cross-sectional studies. These studies consisted of single medium-to-large surveys sampling both boarders and non-boarders at the same time. Of these, Chen et al. (2020) and Xing et al. (2021) sampled students from China, and Martin et al. (2021) and Rudrum et al. (2022) sampled students in Australia, while Widyaningsih et al. (2022) sampled students from Indonesia.

Chen et al. (2020) used a sample of 7606 4th and 5th graders from rural areas in Qinghai and Ningxia and measured their mental health using the Mental Health Test, which is a modified version of the Children's Manifest Anxiety Scale.

Xing et al. 2021 sampled a total of 299 students between the ages of 10 and 15. Of those, 131 were boarders. The study assessed the students' mental health using the Chinese version of the Depression, Anxiety, and Stress Scales (DASS). In addition, Xing et al. used the Chinese version of the Inventory of Parent and Peer Attachment-Revised (IPPA-R) to measure the perceived alienation of students from their parents in order to determine if this was a mediating factor in disparate mental health outcomes between the two groups.

Rudrum et al. (2022) included 403 13-17 years old female adolescents from six schools of both boarders and non-boarders in Perth, Australia. Rudrum et al. used the 24 item Perth A-Loneliness Scale (PALs), which is a self-report measuring loneliness. The study also used Children's Depression Inventory, assessing students' cognitive, affective, and behavioural symptoms of depression.

Widyaningsih et al. (2022) included 433 adolescents aged 12-16 with 91 from junior high school (non-boarders), 136 from modern boarding schools, and 106 from traditional boarding schools. The study used the Family APGAR (Adaptability, Partnership, Growth, Affection, and Resolve) and Strength and Difficulty Questionnaire (SDQ) to survey students on hyperactivity, emotions, behavior, and peer effects.

Hopkins (2021) investigated the difference in the effects of boarding before the age of 12 versus after the age of 12 on adult mental health, wellbeing, and relationships. To do this, she conducted a battery of mental health surveys, as well as interviews, on 84 adult former boarders. To measure mental health outcomes and relationship outcomes, she used the Hospital Anxiety and Depression Scale (HADS) as well as the PTSD checklist for DSM-5, the Experience in close relationships questionnaire (ECR), and the Early Trauma Inventory Self-Report-Short Form (ETISR-SF).

## Cross-Sectional Longitudinal Surveys

We identified a total of 5 cross-sectional longitudinal surveys. These studies compared the mental health of both boarders and non-boarders over a number of follow ups. Of the 5 studies identified, 3 surveyed students in China and 2 surveyed students in Australia.

In Australia, two extensive studies have been done by Lester and Mander.

Lester and Mander (2020) used an online self-report questionnaire to investigate the experience of grade 7 students before the transition into boarding school at the end of term 1, and at the end of term 3 within 12 months. The study surveyed a total of 174 students (144 day students and 30 boarders). The study was conducted in Western Australia, and assessed students' academic self motivation, resilience, strengths and difficulties, distress, and life satisfaction. All students surveyed took part in the "Connect Program" which is designed to ease the transition of students entering boarding school. The Academic Self-Perception Scale included 5 questions. Resilience was measured using the Resilience and Youth Development Module (RYDM), strengths and difficulties were measured using the Strengths and Difficulties Questionnaire (SDQ), and the Kessler Psychological Distress Scale (K-6) was used to measure distress. The Students' Life Satisfaction Scale was used to measure life satisfaction, and another survey assessed the helpfulness of the Connect Program.

Lester and Mander (2017) used data from a survey of 3459 students at 4 points over a 2 year period (end of grade 7, beginning of grade 8, end of grade 8, and end of grade 9). They compared the 76 male and 74 female boarding students to the rest of the sample in order to evaluate the different mental health stressors between the two groups. To do this, they compared the students' responses on the Strengths and Difficulties Questionnaire (SDQ) and the Depression Anxiety Stress Scale - 21 (DASS-21).

One of the studies from China is Tang et al. (2020) which included nearly 14,000 4th and 5th grade students who were non-boarders at the time of the first survey. The survey first took place in 2012, then 2013. The study used a total of 100 yes or no questions to assess learning anxiety, anxiety about people, loneliness tendency, self blame tendency, allergic tendency, physical symptoms, horror tendency, and impulsive tendency. By the time of the follow up, over 1000 students in the sample had begun boarding, allowing the Tang et al., to compare the mental health trajectories for boarders and non-boarders while controlling for other mental health variables.

Li et al. (2023) examined 289 primary students aged from 4th grade to 6th grade in Mainland China. The study took place at the beginning of the first semester and 2 months after. The study used the Chinese version of the 14 item Children's Well-being Scale to examine the emotional wellbeing of students. To determine if parental and student peer support was a mediating factor, the students were also assessed using the Chinese version of the California Healthy Kids Survey's Caring Adult Relationships in School Scale.

Po et al. (2022), conducted a survey from 2013 to 2014 with a total of 19,487 students, making it the largest survey in our sample. In 2014-2015, a follow up survey was conducted. The survey used the Center for Epidemiologic Studies Depression Scale (CES-D), which includes questions on the basic information of students, their parents, the community environment of their families, and the basic information of classroom teachers and schools.

## Non-Comparison Surveys

We identified a total of 3 non-comparison surveys, which surveyed boarders only. Lester and Mander, (2015) used the same data set as Lester and Mander (2017), but this study specifically focused on the rates of bullying in boarding schools among new boarders. The study examined longitudinal data on 76 male and 74 female boarding students in grades 7, 8, and 9 from a larger longitudinal study of 3,462 students. The study used a 9-item categorical index adapted from Rigby and Slee (1998), Olweus (1996), and from the 2004 Youth Internet Survey to assess bullying at boarding schools.

Rau et al. (2018) included 1669 students from 12 boarding schools in Germany and surveyed them using a standardized questionnaire.

Wahab et al. (2013) included 350 students in boarding schools in Malaysia. The study used the Depression Anxiety and Stress Scale - 21 (DASS-21) to assess depression, anxiety, and stress levels. The study also included the Soalselidik Stressor Sekolah Menengah (SSSM) to identify stress factors such as academic, intrapersonal, teacher, learning/teaching, and social group stressors.

## Results

Of the 10 studies that directly compared boarders and non-boarders, 7 found a statistically significant difference between the groups in mental health outcomes, with boarders having worse outcomes. The other 3 studies found null effects. In this section, we will tease through the findings of the studies, both in terms of the raw data and in terms of the mechanisms and interacting variables identified by the studies.

## Cross-Sectional Surveys

Of the cross-sectional surveys, Chen et al. (2020) found high rates of mental health issues among all sampled students, with over half (51.27%) suffering from study anxiety and 17.68% experiencing physical anxiety symptoms. The study found that there was a substantial gap in levels of anxiety between boarders and non-boarders. The mean for the total MHT score for boarders was 41.05, while for non-boarders it was 40.53, which is a modest difference. In particular, non-boarders scored lower than boarders on at least three sub-dimensions of the test: loneliness, self-punishment, and fear. These results persisted after controlling for distance from school.

Xing et al. (2021) also found that boarding correlates with higher rates of anxiety and depression, after controlling for age and gender. In addition, they found that boarding school attendance was significantly positively associated with alienation from mother and alienation from father. Finally, they found positive correlations between parental alienation and symptoms of depression and anxiety, suggesting that alienation may be a mediating factor in the negative relationship between boarding and mental health.

Rudrum et al. (2022) found that boarding is significantly related to symptoms of depression for teenage girls. However, they found no statistically significant difference between boarders and non-boarders in the quality of friendships, feelings of isolation, or negative attitudes towards being alone, potentially ruling these out as mediating factors.

Widyaningsih et al. (2022) found significant differences in emotional and mental disorders of adolescents in state junior high schools compared to modern and traditional boarding schools, with boarders scoring significantly higher on the SDQ, indicating worse mental health outcomes.

Hopkins (2021) found that adult former boarders who began boarding at a younger age (before 12) scored significantly higher (0.5 SD) on the HADS anxiety test. She also found that ex-boarders in the under 12 group scored poorer on all measures, indicating that within this group participants reported a greater number of

depressive symptoms, symptoms of anxiety and avoidance in close relationships, experience of rejection and trauma in childhood and increased numbers of PTSD symptoms.

### Cross-Sectional Longitudinal

The cross-sectional longitudinal surveys, which were generally best equipped to control for potentially confounding variables, were mixed. Some found robust negative effects of boarding on mental health after controlling for other variables between the two groups, while others found a null effect.

In the former case, Po et al. (2022) found that, after controlling for personal characteristics and family characteristics, boarding students have an average of 0.566 units more negative emotions than day students on the CES-D depression scale. Specifically, boarding significantly increased the frequency with which students reported frustration, depression, unhappiness, sadness, and nervousness, while having little effect on boredom, energy, and worrying. In terms of mediating variables, they found that boarding students spent more time in the school environment, interacted with their parents less frequently, and engaged in more bullying behaviors.

Lester and Mander (2017) found a significant association between boarding and an increase in depression, anxiety, and other emotional symptoms over time. They found that boarders have significantly higher levels of anxiety and stress at the end of Grade 8 and 9 compared to non-boarders even though there were no significant differences of depressive symptoms between boarders and non-boarders in grade 7.

In contrast, Li et al. (2023), Lester and Mander 2020, and Tang et al. (2020) all found null effects of boarding on student's mental health. Li et al. found that "The results also showed no significant interaction effects of Schooling Format and Time on all emotional well-being variables...indicating that boarders and day school students did not differ in their emotional well-being [between the beginning of the semester and two months later]." In terms of mediating variables, they found positive associations between peer support and emotional well-being but no significant association between parental support and emotional wellbeing.

Tang et al. (2020) found, after controlling for the personal and family characteristics of students, no significant difference ( $SD=0.02$ ) in scores on the Mental Health Test between boarders and non-boarders. They did, however, find a significant negative effect of boarding on loneliness tendency.

Lester and Mander (2020) found that boarding status was not related to mental wellbeing after transition to secondary school. However, critically, their sample consisted entirely of students in the "Connect Program," which is designed to ease the transition of boarders into their new school environment. Considering the same authors have two other studies which find that: "boarding students have a more difficult transition experience than nonboarding students and report greater negative emotional wellbeing and mental health indicators and decreases in prosocial behaviour immediately post-transition and at the end of the first year after transition" (Mander & Lester (2017); Mander et al. (2015)), they take this as strong evidence for the efficacy of the program.

### Non-Comparison Surveys

Lester and Mander (2015) found that students transitioning into boarding school experienced an immediate and significant spike in the frequency of bullying which continued for the 2 year duration of the follow ups. They found that boarding students reporting higher levels of depression, anxiety, and stress were at significantly higher risk of bullying while students who reported higher peer support were at significantly lower risk of bullying.

Wahab et al. (2013), which surveyed boarding school students in Malaysia, found that the prevalence of depression, anxiety and stress was slightly higher (39.7%, 67.1% and 44.9%, respectively) compared to previous studies. The study also found depression, anxiety, and stress to all be higher for females than males,

and also found correlations between age and family income with depression, anxiety, and stress. In addition, they found strong relationships between academic stressors and worse mental health outcomes.

Finally, Rau et al. (2018) aligns with the other data in the sample in finding that girls in boarding school have a higher risk of depressive behavior and externalizing problems when compared to the general population of boarders.

## Discussion

On balance, the data strongly suggests that there is a correlation between boarding and worse mental health outcomes for students. Nearly every study found that boarding students had worse mental health outcomes than their non-boarding peers, and most studies found this to be the case even after controls. However, because boarding students are a selective group with a number of confounding variables, there are open questions regarding the extent to which there is a negative causal effect of boarding on mental health and, if there is one, which mediating variables are responsible. It is worth noting that the studies which were best suited to evaluate the causal question, the cross-sectional longitudinal studies, included two null-effects (Li et al. (2023) and Tang et al. (2020)) and found no significant difference between boarders and non-boarders' mental health outcomes after extensive controls for confounding variables. In this section, we analyze the data in more detail to consider possible causal effects and mediating variables at play.

### Parental Support/Alienation

One potential causal variable that a number of the studies explore is differences in levels of parental support and alienation between boarders and non-boarders. Since boarders live away from home, it stands to reason that they might experience more alienation from their parents and have less parental support than non-boarders, potentially leading to worse mental health outcomes.

King et al. (2021), which looked specifically at the question of parental alienation, found that symptoms of depression and anxiety in boarding school are closely related to both alienation from mother and alienation from father, as measured by the Inventory of Parent and Peer Attachment-Revised (IPPA-R). They concluded that "the exacerbated psychological distress reported by the adolescents boarding at school might be attributed to the heightened emotional detachment from their parents."

Moreover, Chen et al. (2020) found that one's mother being a migrant worker is positively associated with one's overall MHT score, suggesting that reduced time with parents could be a cause of mental health problems. However, they find that the effect of "reduced time with parents" on MHT scores is significantly smaller than the estimated effect of boarding on MHT scores, indicating that, if it does play a causal role, it plays a small one.

Lastly, Po et al. (2022) found a significant decrease in levels of parental interaction when students started boarding, as compared with non-boarders. After controlling for levels of parent-child interaction, the overall impact of boarding on negative emotions reduced significantly from 0.566 to 0.448, "indicating that the reduction in parent-child interaction partially explains the negative impact of boarding on mental health." They conclude that "The mediating effect of parent-child interaction accounts for 20.85% of the total effect."

In contrast with the studies above, Li et al. (2023), who found a null effect of boarding on mental health as a whole, found a negative association between parent support and children's overall emotional well-being and life satisfaction two months later. They also found the same results for day students, with parent support being negatively linked to their overall well-being and life satisfaction. They conclude that "although boarding school dramatically reduces boarders' access to parental care and attachment, this did not impact their emotional well-being." To explain this, they point out that there is a negative side of parent support, parental



intrusiveness, which can negatively impact the wellbeing of children. They suggest that the positive and negative effects of parental support cancel each other out. For both boarders and non-boarders, on the other hand, they found that peer support was positively related to happiness.

While the data on the negative effects of parental isolation on mental health seem overall strong, there is not enough data to suggest a clear causal relationship between boarding and parental isolation. For instance, it could be the case that parents who are isolated from their children are more likely to send them to boarding school.

Two studies did suggest a causal relationship. Po et al. (2022) found that the decrease in parent-child interaction explained about 20% of the overall mental health effect of boarding. In addition, Lester and Mander (2020), in contrast to most studies (including their other studies) found no significant difference in mental health outcomes when looking at a sample of students in the “Connect Program.” One of the main functions of the connect program is to provide “opportunities for the students and their families to connect with one another at home through a range of social networking and academic digital platforms.” The fact that intervening on levels of parent-child interaction makes the relationship between boarding and mental health insignificant is suggestive that boarding, in general, does increase parental isolation. However, the Connect Program focused mainly on connecting students with their peers, so the success of the Connect Program could also be explained if loneliness or bullying were the causal variables at play.

Future cross-sectional longitudinal studies could shed further light on the question of how boarding affects parental isolation by comparing the change in parental isolation between students who enter boarding school and students who enter day school.

## Loneliness

Another possible explanation for the negative effect of boarding on mental health is loneliness. Tang et al. (2020) found that boarders had significantly higher loneliness tendency than non-boarders. They provide two potential explanations for this. First, since boarding school students are far away from their parents and family for a long time, they lose out on support structures which the school cannot fully replace, making it more likely that they will feel lonely.

However, given that, as we see above, the effects of parental isolation are dubious, it is unlikely that loneliness, cached out in terms of parental isolation, would have a strong effect on the mental health outcomes of boarders.

The second explanation Tang et al. offer for higher loneliness tendency among left behind boarders is that boarders have a higher proportion of left behind children (LBC)—meaning children who are left behind to live with other family members while parents work elsewhere. LBC boarders in their sample had considerably higher loneliness tendency than non LBC boarders. This second explanation may well explain the higher loneliness tendency of boarders, but does not establish a causal link between boarding and loneliness tendency.

Contrary to Tang et al., Rudrum et al. (2022), which found that boarding significantly increased rates of depression in teenage girls, found that boarding school students were significantly more likely to have a positive attitude towards being alone, and no more likely to have a negative attitude towards being alone.

While there is no disagreement in the literature that loneliness is negatively related to mental health outcomes for children, there does not seem to be strong enough data to conclude a relationship between boarding and loneliness. Future cross-sectional longitudinal studies could shed light on this question by comparing the change in loneliness tendencies between students who start boarding school and students who start day school.

## Academic Stress

Another potential causal variable on mental health is academic stress. Wahab et al found academic stressors to be the single largest predictive variable for students' mental health outcomes. The study found that students at the age of 16 had higher levels of depression compared to other younger age groups. They suggest this may be caused by older students having more important examinations, leading to higher levels of academic stress.

In terms of the causal link, Po et al. (2022) found that boarding schools both involve more total schooling and are stricter. In their sample, boarders spent an average of 10 hours each day on studying and school work, compared to 9 hours for day students. They also found that, as measured by a teacher questionnaire, boarding schools were significantly stricter than day schools. In their sample, longer school periods and stricter school restrictions both had negative impacts on students' mental health. They suggest that the excessive study time and insufficient leisure time at boarding schools in China may be a cause of increased psychological distress for students.

These data suggest that academic stress is a good candidate for a causal explanation of the negative relationship between boarding and mental health. Future longitudinal studies could further establish this relationship by showing that students starting boarding school have a larger increase in academic stress than students starting day school.

## Bullying

Lester and Mander (2015) found that boarding students often experience bullying at school, which contributes to their mental health. They found that boarding students are more at risk of frequent bullying victimization at the beginning of Grade 8. This is caused because peer support and parental support decrease at the beginning and end of Grade 8 compared to the end of Grade 7. They find that bullying can cause long-term damage to self esteem, and can result in an increased risk for substance use, academic problems, and violence.

In addition, Po et al. (2022) points out that a large number of studies have shown that boarding is closely related to bullying behavior. Lu Wei et al. (2017) found that the level of bullying in rural boarding schools in China is as high as 31.5%. Po et al. found that, after controlling for other variables, boarding significantly increases students' bullying behavior. Remarkably, in their study, the entire negative effect of boarding goes away after controlling for bullying, "indicating that the increase in bullying behavior completely explains the negative impact of boarding on mental health."

Of all potential causal explanations, parental isolation, academic stress, and bullying all seem like potential candidates. While each of these explanations has some evidence in the literature supporting a causal relationship, none of it seems conclusive, and there are inconsistencies between the studies. We suggest further cross-sectional longitudinal studies as a way to further establish the precise causal mechanisms which mediate the relationship between boarding and mental health.

## Conclusion

This review aimed to present the current state of the research into the relationship between boarding school and mental health. We surveyed the methodology, results, and implications of 13 studies that employed three main experimental designs: cross-sectional, cross-sectional longitudinal, and surveys of boarders alone. Taken as a whole, the data from these studies demonstrate a sizable negative relationship between boarding and mental health. In the discussion section, we explore whether or not the data show this relationship to be causal. There are a number of candidates for causal links suggested by the data, including parental alienation, loneliness, bullying, and academic stress. We find the data suggestive of a causal link among some of these factors, between



boarding school and negative mental health outcomes. Given the current mental health crisis among young people and the critical importance of the subject for parents, students, and educators, we suggest that further research, particularly large sample cross-sectional longitudinal surveys, could be invaluable in helping to unpack the precise mechanisms through which boarding negatively impacts mental health. Understanding these mechanisms will be the key to developing effective interventions.

## Areas for Future Research

While the overall data are convincing that there is a negative relationship between boarding and mental health, more research should be done to figure out if this relationship is causal. Future cross-sectional longitudinal studies that compare students entering day school with students entering boarding school on change in parental isolation, loneliness, and academic stress could potentially establish causal relationships between boarding and these known causal variables of negative mental health outcomes.

The two most promising causal explanations, based on our sample, were parental isolation and bullying. However, it is worth noting that both parental isolation and bullying are subject to significant cultural variation.

While there are many studies from China and Australia, there are not many studies from North America, and in our review we found no studies which explicitly aimed at measuring the cultural differences in how boarding school affects students' mental health.

For example, given that parental isolation is a strong candidate for a mediating variable of the overall effect, a promising study would be to examine if students from more or less overbearing households have a more or less positive response to transitioning to boarding school. In addition, it would be valuable to examine the role that ethnic and cultural backgrounds play in the causal effect of boarding on mental health, while controlling for confounding variables. One way to do this would be to conduct a study on boarding schools in the same geographical area with a diverse student body.

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## References

- Blomqvist, I., Henje Blom, E., H&auml;gg&ouml;f, B., & Hammarstr&ouml;m, A. (2019, March 11). *Increase of internalized mental health symptoms among adolescents during the last three decades*. OUP Academic. <https://academic.oup.com/eurpub/article/29/5/925/5374731?login=true>
- Chen, Q., Chen, Y., & Zhao, Q. (2020, August 14). *Impacts of boarding on primary school students' mental health outcomes – instrumental-variable evidence from rural northwestern China*. Economics & Human Biology. <https://www.sciencedirect.com/science/article/abs/pii/S1570677X20301908>
- Hopkins, E. (2021, November 22). *Exploring the impact of attending boarding school on adult well-being, mental health and relationships*. Research Repository. <https://repository.essex.ac.uk/31581/>
- Lester, L., & Mander, D. (2020, January). *Gale - Institution finder*. A Longitudinal Mental Health and Wellbeing Survey of Students Transitioning to a Boys' Only Boarding School. <http://go.galegroup.com/ps/i.do?id=GALE|A512496603&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=19326203&p=AONE&sw=w>

- Lester, L., & Mander, D. (2024, March 29). *A Longitudinal Mental Health and Wellbeing Survey of Students Transitioning to a Boys' Only Boarding School*. Australian and International Journal of Rural Education. <https://journal.spera.asn.au/index.php/AIJRE>
- Li, H., Law, W., Zhang, X., & Xiao, N. (2023, October 24). *Social support and emotional well-being among boarders and day school students: A two-wave longitudinal study*. Children and Youth Services Review. <https://www.sciencedirect.com/science/article/abs/pii/S0190740923004139#:~:text=Multi%2Dgroup%20analysis%20revealed%20that,positively%20associated%20with%20later%20happiness>
- Mander, D., & Lester, L. (2017, May 2). *A longitudinal study into indicators of mental health, strengths and difficulties reported by boarding students as they transition from primary school to secondary boarding schools in Perth, Western Australia: Journal of Psychologists and Counsellors in Schools*. Cambridge Core. <https://www.cambridge.org/core/journals/journal-of-psychologists-and-counsellors-in-schools/article/longitudinal-study-into-indicators-of-mental-health-strengths-and-difficulties-reported-by-boarding-students-as-they-transition-from-primary-school-to-secondary-boarding-schools-in-perth-western-australia/19100869AF88A301DD013B61B7D25003>
- Po, Y., & Zhiyi, Y. (n.d.). *How Boarding Schools Affect Student Mental Health?*. Journal of East China Normal University (Education Science Edition). <https://xbjk.ecnu.edu.cn/article/2022/1000-5560/2022-8-67.shtml>
- Rau, T., Ohlert, J., Fegert, J. M., Pohling, A., Andresen, S., & Allroggen, M. (2018, December). *Psychische Auffälligkeiten von Jugendlichen in Internaten: Eine deutschlandweite Befragung*. eLibrary. <http://www.vr-elibrary.de/doi/pdf/10.13109/prkk.2016.65.6.464>
- Rudrum, M., Houghton, S., & Glasgow, K. (2022, June 19). *Loneliness and depressive symptoms ... - sage journals*. Loneliness and depressive symptoms among Australian female boarding school students. <https://journals.sagepub.com/doi/full/10.1177/01430343221107394>
- Steinhausen, H.-C., & Metzke, C. W. (2019, April 20). *Risk, compensatory, vulnerability, and protective factors influencing mental health in adolescence - journal of youth and adolescence*. SpringerLink. <https://link.springer.com/article/10.1023/A:1010471210790>
- Tang, B., Wang, Y., Gao, Y., Wu, S., Li, H., Chen, Y., & Shi, Y. (2020, November 6). *The effect of boarding on the mental health of primary school students in Western Rural china*. International journal of environmental research and public health. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7664204/>
- Wahab, S., Rahman, F. N. A., Hasan, W. M. H. W., Zamani, I. Z., Arbaiei, N. C., Khor, S. L., & Nawi, A. M. (2013, April 17). *Stressors in secondary boarding school students: Association with stress, anxiety and depressive symptoms*. Wiley Online Library. <https://onlinelibrary.wiley.com/doi/full/10.1111/appy.12067>
- Widyaningsih, B. N., Marchira, C. R., & Claramita, M. (2022, May). *Comparison of family function and mental emotional health of adolescents in a state junior high school, modern and traditional boarding schools*. Review of Primary Care Practice and Education (Kajian Praktik dan Pendidikan Layanan Primer). <https://journal.ugm.ac.id/rpcpe/article/view/33980/34202>
- World Health Organization. (2021, November 17). *Mental health of adolescents*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health#:~:text=Globally%2C%20one%20in%20seven%2010,illness%20and%20disability%20among%20adolescents>
- Xing, J., Leng, L., & Ho, R. T. H. (2021, May 19). *Boarding school attendance and mental health among Chinese adolescents: The potential role of alienation from parents*. Children and Youth Services Review. <https://www.sciencedirect.com/science/article/abs/pii/S0190740921001535>