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19 January 2023

Online at <https://mpra.ub.uni-muenchen.de/116035/>
MPRA Paper No. 116035, posted 22 Jan 2023 07:32 UTC

Archives of the Social Sciences: A Journal of Collaborative Memory

To Cite:

Fatima, S. Rural Development and Education: Critical Strategies for Ending Child Marriages. Archives of the Social Sciences: A Journal of Collaborative Memory 2023; Vol 1, Issue 1, pp. 1-15.

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Peer-Review History

Received: 05 January 2023
Reviewed & Revised: 17/ February/2023 to 15/March/2023
Accepted: 20 February 2023
Published: March 2023

Peer-Review Model

External peer-review was done through double-blind method.

Archives of the Social Sciences: A Journal of Collaborative Memory
pISSN xxxx-xxxx; eISSN xxxx-xxxx

URL: <https://sites.google.com/view/journal-politica/archives-of-the-social-sciences-a-journal-of-collaborative-memory>

Ethics

No animal studies are presented in this manuscript.
Human studies are presented in this manuscript.
No potentially identifiable human images or data is presented in this study.

Rural Development and Education: Critical Strategies for Ending Child Marriages

Sana Fatima¹

ABSTRACT

Gender inequality remains a prevalent global concern and has been identified as a significant contributing factor to the occurrence of child marriages. Child marriage is a serious human rights violation that has significant socio-economic effects on children, families, and communities. This study aimed to identify key determinants of child marriages through the use of multiple regression analysis. Child marriage was operationalized as the dependent variable, while wealth, unemployment, education, rural poverty, and gender inequality were employed as independent variables. The findings of the study revealed a positive correlation between rural poverty and child marriages, suggesting that areas of higher poverty may be associated with a greater incidence of child marriages. Additionally, the study found a negative relationship between knowledge and child marriages, indicating that the empowerment of local communities through education may serve as an effective strategy to decrease child marriages. The results of this study have important policy implications, and it is crucial that federal governments and administrative bodies prioritize measures to protect against child marriages in order to address gender inequality.

Keywords: Gender inequality; Child marriages; Rural Poverty; Unemployment; Education; Pakistan.

1. INTRODUCTION

The United Nations has established a comprehensive set of global objectives, known as the Sustainable Development Goals (SDGs), that are intended to promote the welfare and rights of all individuals and communities. One crucial aspect of this effort is the elimination of harmful social practices that disproportionately affect marginalized groups, such as women and girls. Within this context, SDG 5, which aims to achieve gender equality and empower all women and girls, places a particular emphasis on eradicating child, early and forced marriage as well as female genital mutilation.



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The United Nations has established a comprehensive set of global objectives, known as the Sustainable Development Goals (SDGs), that are intended to promote the welfare and rights of all individuals and communities. One crucial aspect of this effort is the elimination of harmful social practices that disproportionately affect marginalized groups, such as women and girls. Within this context, SDG 5, which aims to achieve gender equality and empower all women and girls, places a particular emphasis on eradicating child, early and forced marriage as well as female genital mutilation. This objective, outlined in Target 5.3, is critical for ensuring that all individuals, regardless of their gender, have the opportunity to live lives of dignity, autonomy, and self-determination (United Nations, 2022).

Marriage before a person reaches the age of 18 is considered a "child marriage," and this practice impacts millions of people worldwide. Sixty million marriages occur worldwide before the age of eighteen reports UNICEF. In addition to violating children's fundamental human rights, this damaging practice deprives them of their rights to health, learning, and safeguarding against violence, extortion, and assault (Duran & Eraslan, 2019). Both young men and women are touched by child marriage, which includes both legal and informal relationships, but females are hit worse. One-third of girls worldwide are married before they turn 18, and one-seventh get married before they turn 15. Roughly 10 million teen romances take place every year. While the rates of child marriage are greatest in West Africa, they are also higher in southern Asia, northern Africa/the Middle East, and Latin America. However, because of the sheer number of people living in southern Asia, over half of all young girls who are married off at a young age live there. Even amongst nations in the same region, there may be significant variations in incidence, with the highest rates seen in less industrialised or rural regions. Data from 47 nations shows that the median age of first marriage is rising; however, this is primarily a phenomenon among the daughters of well-to-do families. The rate of development is still too sluggish, sadly. While just 35% of women 20-24 have married before 18, 48% of women 45-49 have done so. Pregnancy at a young age raises the chances of mortality or long-term health problems, such as obstetric fistula. It is only one of the many adverse outcomes of child marriage (Svanemyr et al., 2012).

Children, especially those from poor socioeconomic areas who were already marginalised and neglected, have been struck by the COVID-19 epidemic. Particularly vulnerable to the pandemic's long-term effects—including child labour, child trafficking, child marriage, sexual exploitation, and death—are children from underprivileged backgrounds. Mainly at risk are girls and women, who face discrimination and danger because of their gender and social position as outcasts (Rahiem, 2021). In addition, the epidemic has made domestic violence more likely. According to the United Nations Population Fund, domestic and sexual violence worldwide increased by 20% during the epidemic. Preliminary statistics from police agencies in the United States indicate that COVID-19 may affect domestic violence in certain areas more than in others. As of March 2020, there was a rise of 22% in Portland for domestic violence-related arrests, 18% in San Antonio for complaints about family violence, 27% in Alabama for calls about domestic violence, and 10% in New York City for reviews of domestic violence cases. In addition, a European WHO affiliate reported a 60% rise in emergency calls from women whom an abusive spouse had threatened during lockdowns implemented in several European towns. Human rights activists in Bangladesh surveyed 53 of the country's 64 districts in June 2020 and found that 4622 women had been subjected to mental torture, 1839 had been subjected to physical abuse, and 203 had been sexually molested. The National Women's Commission of India reports a 94% rise in domestic rape incidents during the lockdown, putting over half a billion women in India in danger (Padmanabhan, 2022).

Teaching and learning about the mental, emotional, physical, and social elements of sexuality is referred to as comprehensive sexuality education (CSE). The program's ultimate goal is to equip young people with the self-awareness, self-responsibility, self-respect, and self-respect for others that they need to make responsible decisions that will benefit themselves and others, as well as the self-respect and self-respect for others throughout their lives. UNESCO, the United Nations Educational, Scientific, and Cultural Organization, emphasizes the significance of CSE programmes that are factually sound, progressive in character, age-appropriate, and regionally meaningful. Youth reproductive and sexual health rights need a focus on sex education (Nadeem et al., 2020).

The prevalence of child marriage in Pakistan is high, especially in the province of Sindh and the country's rural regions. Child marriage is harmful because it violates the rights of children as defined by several international and local laws, which have been formed in response to the roots and practices of child marriage. The practice has far-reaching repercussions for both children and civilization as a whole. This piece will focus on the legal initiatives the United Nations and other international bodies took to reduce the prevalence of child marriage across the globe. Marriages between minors are examined in the context of civil rights and women's rights, and many international conventions and treaties draw attention to this problem. The participating states must ensure that their national legislation is consistent with the spirit of the conventions and treaties to which they are signatories. Similarly, Islamic law plays a significant role in Pakistan's internal legal system. Therefore, Islamic and international law are included in the analysis (Nazirullah et al., 2021).

The prevalence of child brides is incredibly high in Pakistan, a country with some of the world's worst gender inequalities. In Pakistan, young girls are more vulnerable to maternal morbidity and death because of child marriage since it is linked to multiple pregnancies (within 24 months of each other), unplanned pregnancies, and abortions. Diarrhoea, newborn mortality, and death in children younger than five all rise with the prevalence of child marriage in Pakistan. Notably, women who got married young had a higher chance of not having access to professional prenatal care, of having their babies delivered by untrained people, and of having their babies at home, all of which raised the likelihood of problems such as postpartum haemorrhage (Nasrullah & Raza, 2014; Acharya et al., 2018; Krukowski et al., 2022). The United Nations adopted its first resolution on the issue of child, early, and forced marriage in November 2014. Most member nations have agreed to co-sponsor the resolution because of its historical significance. Pakistan, a country with a vast and youthful population and a high risk of child marriages due to low education levels, was one of the first to raise the problem (Al-Moushahidi & Jehna, 2015).

Due to the increased risk of illness and diseases accompanying malnutrition, approximately half of all fatalities among children under five (3 million deaths yearly) may be attributed to it. South Asia and sub-Saharan Africa had the worst stunting rates and wantedness among the world's children in 2011. This affected at least 165 million children. Women of childbearing age are also

disproportionately affected by malnutrition. Low birthweight babies are more vulnerable to early childhood illnesses and death due to the effects of maternal malnutrition. Premature exposure to these hazards increases the likelihood that a child may have growth retardation, which can have lasting and detrimental effects on the student's intellectual, psychomotor, and healthcare. The necessity of acting during pregnancy and the first two years of life is emphasised because most of the permanent harm caused by starvation occurs during these times (Das et al., 2016; Soliman et al., 2021). Among Asian countries, South Asian ones like Pakistan have the highest maternal mortality rate. Recent estimates place the annual global death toll for women in delivery and its immediate aftermath at roughly 295,000. About 20% of these fatalities occur in South Asia alone. Approximately 94% of maternal fatalities occur in low-income nations. A new study by the National Institute of Population Studies, titled "Pakistan Maternal Death Survey 2019," and supported by USAID, reveals striking demographic differences in maternal mortality rates between women residing in rural and urban areas of Pakistan. In Pakistan, there are 186 fatalities of mothers for every 100,000 births. This proportion is about 26% greater in rural regions than urban ones. It is crucial to provide women with expert assistance and protection during maternity, labour, and the postoperative period to reduce the risk of difficulties. Increased maternal death burden in rural areas can be attributed to several factors, including but not limited to economic hardship; inequalities in education; gender-based imbalances; inadequate and poor quality healthcare services; isolated areas; intercultural values; undernutrition and violence against women; unjustified allocation of resources; and the political landscape (Hanif et al., 2021).

Teaching and learning about the mental, emotional, bodily, and social aspects of sexuality is called comprehensive sexuality education (CSE). The program aims to help young people acquire the self-awareness, self-efficacy, self-responsibility, and self-respect that will serve them well throughout their lives (Nadeem et al., 2019). Child and adolescent sexuality education (CSE) programmes may assist in educating children and young people about sexual and reproductive health, equipping them with the information and skills they need to make educated choices about their sexual health and relationships. Additionally, it may aid in preventing child marriages by empowering young people to make mature decisions about when and with whom to create a family. As a result, CSE can potentially be an effective strategy in Pakistan to reduce the prevalence of harmful child marriages and boost maternal health (Subramanee et al., 2022). Adverse effects on children's mental, emotional, and social health are lasting results of the cultural norm of marrying off minors. It denies kids the chance for a healthy life, an education, and safety from abuse and exploitation. Women who start having children at a young age are at a higher risk of complications during pregnancy and childbirth. Their risk of experiencing violence and abuse at the hands of their spouses and in-laws is considerably higher. In addition, many young women who have been married off as children end up dropping out of school, limiting their potential for future success in both the workforce and their personal lives (Hamad et al., 2021).

Based on the stated discussions, the study assessed following possible research questions that crucial for developing an understanding about the stated issues in a country like Pakistan, i.e., first, how education levels affect the incidence of child marriages in rural areas. Specifically, whether higher education levels among girls in rural communities are associated with a lower likelihood of entering into child marriages. Second, whether there are differences in the education levels of girls who do and do not enter into child marriages, and whether these differences are more pronounced in rural compared to urban areas. Third, how wealth status influences the decision to enter into child marriages in low-income households. For example, whether families who are living in poverty are more likely to enter into child marriages as a means of financial stability. Forth, whether there are differences in the wealth status of families whose daughters do and do not enter into child marriages, and whether these differences are more pronounced in rural compared to urban areas. Fifth, unemployment rate is also another important area of research, i.e., whether the prevalence of child marriages is higher in rural communities with higher unemployment rates, and whether there is a relationship between unemployment and child marriage. Sixth, how poverty and unemployment are related to each other and how they influence child marriages. Gender inequality also plays a role in the incidence of child marriages. The sixth research question is how gender inequality affects the decision of parents to enter into child marriages, and whether this is more pronounced in rural compared to urban areas. Seventh, the study explore whether there are differences in the gender roles and expectations of girls who do and do not enter into child marriages. Finally, one of the key area of research is to investigate how education and economic empowerment programs can be implemented to reduce the incidence of child marriages in developing countries, Like Pakistan. The study investigate the effectiveness of different types of educational and economic empowerment programs in reducing the incidence of child marriages, and whether these programs are more effective in urban or rural areas. There is need to know whether there are specific groups of girls who are more likely to benefit from these programs, such as those who are living in poverty or who have lower levels of education. Based on the stated research questions, the following are the objectives of the study, i.e.,

- I. To investigate the relationship between education levels and the incidence of child marriages in rural areas.
- II. To examine the influence of wealth status on the decision to enter into child marriages in low-income households.
- III. To determine the impact of unemployment rate on the prevalence of child marriages in rural communities.
- IV. To understand the role of poverty in the perpetuation of child marriages in rural areas, and
- V. To explore the influence of gender inequality on the incidence of child marriages in developing countries and how it varies in urban and rural areas.

The significance of this study lies in its ability to shed light on the complex and multifaceted nature of child marriages in Pakistan, and the ways in which they are affected by factors such as education, wealth, unemployment, rural poverty, and gender inequality. By understanding the underlying causes of child marriages in Pakistan, the study has the potential to inform the development of targeted and effective interventions aimed at reducing the incidence of child marriages and improving the well-being of girls and young women. Moreover, this study highlights the importance of addressing the root causes of child marriages in order to effectively combat the issue. By highlighting the relationship between poverty and child marriages, this study emphasizes the need for economic development and poverty reduction efforts in order to combat child marriages. Additionally, the study highlights the importance of

addressing gender inequality, as it plays a significant role in the perpetuation of child marriages. Furthermore, the study also has important policy implications, as it can inform the development of laws and policies aimed at reducing child marriages and protecting the rights of girls and young women. By providing an in-depth understanding of the factors that contribute to child marriages in Pakistan, this study can inform the design and implementation of effective policies and programs that can help to reduce the incidence of child marriages and improve the lives of girls and young women in Pakistan.

2. LITERATURE REVIEW

Child marriage has significant socio-economic effects on families and communities. Children who marry young are more likely to live in poverty, as they are often forced to leave school and enter into low-skilled, low-paying jobs. Child marriage also perpetuates a cycle of poverty and disadvantage, as children born to teenage mothers are more likely to be born with low birth weight and to experience malnutrition, which can lead to cognitive and developmental delays (Ziegert & Sulliva, 2022).

2.1. The Socio-Economic Effects of Child Marriage: A Human Rights Violation with Long-term Consequences

Child marriage has a detrimental effect on the socio-economic development of communities and nations. Child marriage hinders the achievement of the United Nations Sustainable Development Goals, particularly in relation to education, poverty, and gender equality (Hassan, 2020). Gular & Kucuker (2010) conducted a study to examine the negative effects of early marriages on the health of teens and children. The study was conducted in Afyonkarahisar province, Turkey, between 2000 and 2006, using a sample of adolescent girls who had been admitted to court and were receiving psychiatric outpatient treatment at a university clinic. The authors, who were psychiatrists, personally interviewed all subjects using a social mobility questionnaire. The results of the study indicated that most of the teens in the sample came from a lower socio-economic class and had aspirations for marriage after completing primary school. Additionally, the study found that these teens received very little sex education from their parents and that current institutional education programs at their schools were inadequate. Jalovaara (2013) examined the differences between the influence of social and economic factors on the breakdown of cohabitations and marriages in Finland. The study analysed information on the first marriages of women born between 1969 and 1981 using event-history techniques. Aspects of financial and educational success and income and employment were tracked throughout time to assess their effects on the study's overall findings. The research found that just around one in ten first-time cohabiting relationships lasts for an entire decade without ending in divorce or marriage. Of those that did last that long, three-quarters terminated in divorce or marriage. Child marriage laws in Sindh, Pakistan, were the subject of research by Bhanji & Punjani (2014). This article discusses the leading causes of child marriage, the importance of the problem and its consequences, and some public health interventions that may be taken to lessen the damage. The authors highlight that child marriage has declined worldwide over the last 20 years and is becoming more widely recognised as a human rights violation. Ozcebe and KucukBicer (2013) conduct a study on the issue of early and forced marriages in their country. They aim to define the causes of early marriages, the position of early marriages in national and international laws and to determine the frequency of the phenomenon. The study highlights the fact that early marriages are a significant child and girl issue in their society. The authors stress that preventing early marriages for whatever reason is essential for solving social contradictions, raising awareness about the issue and governmental actions on early marriages are crucial from the point of view of public health.

Duran and Eraslan (2019) conducted a study to identify the factors that influence women's decisions to enter into early marriages. The sample of the study consisted of 651 women who were within the age group of 30 and below and had gotten married during their childhood. The study found that education, poverty, and societal pressure were among the main reasons for early marriages. The authors of the study suggest that women in the at-risk group should be educated about the negative effects of early marriages and that those who have already entered into early marriages and are seeking support should be helped. They also recommend stricter legal sanctions to discourage child marriages. Gok (2016) delves deeper into the issue of child marriages and its impact on gender inequality. The study highlights the various dimensions of child marriages including legal, medical, economic, social and political perspectives. The study concludes that child marriages are a significant contributor to gender inequality in social, political and economic life and perpetuate the inequality faced by women. The study recommends several solutions to address the problem of child marriages including ensuring gender equality in adolescence, abandoning conditioning on gender roles, and increasing education levels and enforcement of laws. It is imperative that society takes a holistic approach to address the issue of child marriages, as it not only affects the individual but also perpetuates societal inequality. Socioeconomic variables contributing to child marriage in Bangladesh were investigated in research by Biswas et al. (2019). The research, which drew on four nationally representative cross-sectional surveys conducted over the last decade, revealed that the age-adjusted results were consistent with the anticipated age effects regarding the direction of the linked socioeconomic characteristics, but the impact sizes had altered. Cumulative linked mixed models (CLMM) were used to analyse the Bangladesh Demographic and Health Survey (BDHS) data between 2004 and 2014 and account for cluster effects to understand better the variables associated with risk. Although the research demonstrated that the cumulative effect increased significantly with time, the pace of progress was not promising when looking at the data as a whole rather than individual years. Using individual mortality data for 300,000 children in Bangladesh, Trommlerova (2020) investigates the negative impact of teenage pregnancy on early childhood mortality. According to the research, children of younger mothers had a greater risk of dying in their first year of life. However, postpartum, advantageous socioeconomic characteristics like money and education tend to compensate for the physiologic disadvantage of teenage delivery. According to the findings, around 18,700 children under five die yearly in Bangladesh due to teenage pregnancies. In their investigation of rural Bangladeshi perspectives on and experiences with child marriage, Fattah and Camellia (2020) go deep into the realities of this social phenomenon. The study's overarching goal is to analyse national conversations around child marriage and determine what variables contribute to their development. In 2014,

researchers surveyed 3,344 residents of the Rangpur area in northern Bangladesh to acquire quantitative data to complement the qualitative data gathered via group discussions and individual interviews with 64 participants. The results of this research suggest that the current definition of a good match has to be transformed into one of an equal match to solve the recurring issue of child marriages in all settings of Bangladesh.

The mental health and well-being of children and youth in Kenya were investigated in a research published by Mathai et al. (2022). Although several acts of parliament, policies, and global and local conventions to which Kenya is a signatory recognise and protect the mental health and well-being of children, the study notes that there is no digital system devoted solely to child and adolescent psychological wellness as a policy paper, which can be a restricting factor in the execution of psychiatric methods for children and youth. Research by Okunlola et al. (2022) looks at the information gap about marriage rates among Nigerian males over the age of 25. Using descriptive statistics, logistic regression, and cox regression models, researchers evaluated data from a 2016/17 Nigeria Multiple Indicator Cluster Survey of 7803 adult males (aged 18-34). About 35% of adult males in Nigeria have been married before, with the typical age of first marriage being about 24. Men with higher levels of education and those from middle-income families were found to be less likely to have ever been married and to postpone marriage. Conversely, males with more affluence were more likely to have a history of marriage and to postpone marriage. In their investigation of the connection between divorce and health, Sbarra and Whisman (2022) zeroed in on two main areas. The research begins by exploring the hypothesised links between divorce and health problems down the road. Second, the authors suggest that people's psychological and behavioural reactions to changes in their economic condition following divorce are a possible causative route. They stress the importance of this point. The Contingency Matrix-Based, Policy Application Model is investigated by Duadji and Tresiana (2022) as a tool for addressing the issue of child marriage. Researchers examined 2016-2019 data from the National Capacity Building Agency and gathered information using a profile-based methodology. The outcomes demonstrated the value of integrating the SDGs into the national strategy for reducing the prevalence of child marriage, enforcing primary policy changes, mapping local problem trends and their root causes, mapping regional-level derivative rules, and planning and developing at the regional and village levels.

In this research, Muzaffar et al. (2018) explore the topic of child marriages through material deprivation, lack of education, and discrimination based on gender. These studies shed light on the fact that when girls are married off at a young age, they are more likely to experience physical, emotional, and sexual assault and are more likely to drop out of school. The report highlights the need to make a significant effort to address the problem of child marriages because of the harm many adolescents present to society. To channel this demographic surge into a potent future resource for the nation, it is essential that this group of people be well-guided and trained in a positive and healthy atmosphere. The third wave of the National Family Health Survey (NFHS-3) was done in 2005-06, and Sacena and Mohanty (2013) used this data to examine many facets of child marriage in India. Their research is aimed towards five specific ends: first, to examine the differences in median age at first marriage for both sexes by category in each of the chosen states, and second, to calculate the proportion of the population that has never been married by age. Second, we want to analyse the state-level trends in the median ages of boys and girls getting married across the four major castes in the country. Third, look at the differences and trends in child marriage between sexes and social classes in the five states. This discussion aims to examine the cultural and social ideas contributing to the prevalence of child marriage in India. Finally, we use binary logistic regression models to discover socioeconomic characteristics related to marrying women under the statutory age of marriage. In their research, Muzaffar et al. (2018) consider child marriages within the framework of economic hardship, lack of education, and discrimination against women. These studies shed light on the fact that when girls are married off at a young age, they are more likely to experience physical, emotional, and sexual assault and are more likely to drop out of school. The report highlights the need to make a significant effort to address the problem of child marriages because of the harm many adolescents present to society. To channel this demographic surge into a potent future resource for the nation, it is essential that this group of people be well-guided and educated in a healthy and constructive atmosphere.

Based on the cited literature, the study formed the two research hypotheses, i.e.,

H1: There is a negative correlation between education levels and the incidence of child marriages in rural areas.

H2: Wealth status has a significant influence on the decision to enter into child marriages in low-income households, with poorer households being more likely to enter into child marriages.

2.2. The Negative Health Consequences of Child Marriage

Child marriages can have negative health outcomes for the young girls involved, including an increased risk of maternal mortality and morbidity, as well as complications during childbirth. Additionally, child brides are often more susceptible to sexual and physical abuse, and have limited access to education and economic opportunities, which can further negatively impact their health and well-being. The practice of child marriage also perpetuates poverty and undermines global efforts to improve gender equality and reduce maternal and child mortality (Webb et al. 2023). The study conducted by Svanemyr et al. (2012) aimed to promote understanding, engagement, and responsibility among all actors in the area of women's reproductive health. Specifically, the study sought to address the rights of women and young girls to develop and reach their full potential, as well as the ability to make informed decisions about pregnancy. The study presented data on the prevalence and outcomes of various factors contributing to reproductive health issues, and recommended actions for prevention. The research by de Groot et al. (2012) looks at the effects of early marriage on females in Northern Ghana. A total of 1349 married women between the ages of 20 and 29 from 2496 households in Northern and Upper East Ghana participated in the research. An OLS and a logistic regression model were used to evaluate the link between child marriage and unfavourable outcomes for females. Lower levels of schooling, greater rates of poverty, and worse health outcomes were all shown to be connected with child marriage for females in Northern Ghana. These results corroborate earlier studies that have indicated that having a child while still a youngster may severely affect a girl's life, including fewer chances for her to get an education,

higher rates of poverty, and worse health. Nasrullah et al. (2014) investigate the perspectives on child marriage held by women who were married at a young age. Data was gathered via in-depth interviews and other qualitative techniques. The researchers used scholarly literature and their field experience to inform the interview topics. The study's results underscored the need to educate the public about the risks associated with child marriage, pass and strictly enforce laws prohibiting the practise, and advocate for women's civil, sexual, and reproductive health rights. Child marriages and unions have been shown to have harmful effects on the sexual and reproductive health of adolescents and young adults, which is why Taylor et al. (2019) set out to investigate these effects (AYSRH). This research employed a secondary cross-analysis of three qualitative studies to examine the role of social norms and community dynamics in the persistence of child marriages in Brazil, Guatemala, and Honduras. Findings from the research used an ecological framework to investigate the phenomenon's personal, local, and social contexts. Using information from the National Family Health Survey, Brahmapurkar (2017) investigates gender equality with female education, marriage at a young age, and domestic violence. Data from ever-married women of reproductive age in 15 states and 3 UTs throughout India were utilised for descriptive analysis. The research indicated that in rural regions, the gender gap in literacy and child marriages is more evident. It emphasised the detrimental effects of these variables on maternal health care and an increasing trend of violence against women despite a decreasing sex ratio at birth.

John et al. (2018) researched to enhance communication and bargaining abilities within marriages. Descriptive and inferential statistics data were used to investigate the impact of age at marriage on many aspects of marital satisfaction in Ethiopia. Data from 3396 unmarried or recently separated women aged 18-45, 32 in-depth conversations, and eight participant-led focus groups in designated locations formed the basis of the study. Marriage before age 12 was shown to have a significant, adverse effect on relationship quality in various dimensions via regression analysis. Rumble et al. (2018) performed their research to understand better the factors that lead to child marriage and partner selection in Indonesia. This research used information from the 2012 Indonesian Population and Health Survey, which was designed to represent the country as a whole. The researchers used multivariate models to calculate the link between changing demographics and economic conditions and underage marriage. The research concluded that living in a rural area is a health risk for child marriage. In contrast, higher levels of education, better health, and more media exposure all had protective impacts on marital outcomes. The research also showed substantial regional differences, highlighting the influence of religious, cultural, and other contextual variables on the prevalence of child marriage worldwide. Similarly, Mehra et al. (2018) analyse the results of a community-based intervention with many components on the rates of childbearing by teenagers in two Indian states. Diverse participants between 10 and 20 were selected via multi-level sampling for the research. A total of 1770 people filled out the survey, including 824 adult men and 944 adult females. The data were analysed using various statistical techniques, including cross-tabulation, chi-square testing, and logistic regression. The research also indicated that the median age of marriage was 1.2 years later for the children polled compared to their elder siblings, while the median age of contemplation was 85 years later, and the median age of years spent in school was 1.5 years later. Mulenga et al. (2018) research the causes of child marriage in Zambia's rural and urban areas and its effects on women's aspirations for having children. The research used a binary logistic and Poisson regression model to examine data from the 2013-2014 Zambia Survey. The research indicated that both urban and rural variables affect the prevalence of child marriages in Zambia and that weddings between minors affect the desired family size. The study's results suggest combining strategies to address the problem's underlying causes. Child marriage and reproductive outcomes are the focus of research by Yaya et al. (2019). This research examines how often marriages between minors and women in their twenties and thirties are in sub-Saharan Africa. In this research, data from the DHS surveys in thirty-four different countries in sub-Saharan Africa were analysed. In all, 62,015 20- to 24-year-old women participated in the polls between 2008 and 2017. The research concluded that women in sub-Saharan Africa might benefit from implementing laws and initiatives to reduce the prevalence of child marriage. In addition to lowering the overall rate of child marriage, programmes aimed at bringing about social change in this area could also increase the uptake of modern contraception, decrease the number of abortions women undergo throughout their lives, and lower the total number of children born to each woman. The study by Rana et al. (2019) aimed to evaluate the impact of family planning on mother and child health outcomes by considering the timing, spacing, and restriction of births. Three rounds of systematic random selection were employed to choose participants who would be representative of the population at large to assess their demographic and health characteristics. The study's results show that family planning effectively boosts mother and child health and nutrition. The results showed that many women still get married young, have children young, and have several children in close succession. Kumari & Shekar (2023) conclude that early marriage is a significant issue in Rajasthan, with a high prevalence of the practice among young girls in the state. Poverty, low levels of education, and cultural and societal norms are key determinants of early marriage in Rajasthan.

Based on the discussion, the study hypothesises the following:

H3: There is a positive correlation between the unemployment rate and the prevalence of child marriages in rural communities.

H4: Poverty is a significant factor in the perpetuation of child marriages in rural areas, and

H5: Gender inequality has a significant influence on the incidence of child marriages in developing countries, with the effect being stronger in rural areas compared to urban areas.

Despite the fact that child marriage is a significant problem in Pakistan, there is limited research on the specific socio-economic factors that contribute to its high incidence in rural areas. There is also a lack of research on the effectiveness of educational and economic empowerment programs in reducing the incidence of child marriages in Pakistan, particularly in rural areas. The following are the contribution of the study:

- I. The study would contribute to the understanding of the relationship between education levels and child marriages in rural areas of Pakistan, providing valuable insights for policymakers and practitioners working to reduce the incidence of child marriages.
- II. It would increase understanding of how wealth status and unemployment rate influence the decision to enter into child marriages in low-income households in rural areas of Pakistan, which would be useful for developing targeted interventions.
- III. It would assess the role of poverty and gender inequality in the perpetuation of child marriages in rural areas of Pakistan, which would be useful for developing targeted interventions, and
- IV. It opens the wisdom to understand the effectiveness of educational and economic empowerment programs in reducing the incidence of child marriages in rural areas of Pakistan, which would be useful for developing targeted interventions and programs.

By providing insights on the socio-economic factors that contribute to child marriages in rural areas of Pakistan, this study would help to inform policies and programs aimed at reducing the incidence of child marriages in the country.

2. MATERIALS AND METHODS

The study aims to investigate the relationship between child marriages, education, wealth, unemployment, and gender inequality in Pakistan. The population of the study includes individuals over the age of 18 in Pakistan. A sizeable number of students was selected through convenience sampling, a technique in which researchers collect data from a readily available pool of participants, from KPK province of Pakistan. The questionnaire included 3 questions related to child marriages, 2 questions related to education, 2 questions related to wealth, 2 questions related to unemployment, and 2 questions related to gender inequality. The study hopes to understand the underlying causes of child marriages in Pakistan and inform the development of targeted and effective interventions aimed at reducing the incidence of child marriages and improving the well-being of girls and young women.

The dependent variable in the study was child marriages, while the independent variables were education, wealth, unemployment, rural poverty and gender inequality. Child marriages were defined as the union between two individuals where one or both parties are under 18 years of age, and it is often driven by economic considerations. Education was defined as the process of acquiring knowledge and skills, while wealth was defined as the accumulation of valuable assets. Unemployment was defined as the inability to find employment despite being actively seeking it, and rural poverty was defined as the lack of basic infrastructure and services in rural areas. Disparities in how men and women are expected to behave in public settings are considered one source of gender inequality.

3.1. Theoretical Framework

The theoretical framework of this study is based on the concept of social determinants of health, which posits that factors such as education, wealth, and gender inequality play a significant role in shaping health outcomes (Zaman et al. 2016; Saleem et al. 2019; Anser et al. 2020). In the context of this study, the social determinants of health are applied to the phenomenon of child marriages in Pakistan. Child marriages are a complex and multifaceted issue, and the literature suggests that they are affected by factors such as education, wealth, unemployment, rural poverty, and gender inequality. Education is seen as a protective factor, as it provides girls and young women with the knowledge and skills necessary to make informed decisions about their lives, including when and whom to marry (Khan et al. 2019). Wealth is also seen as a protective factor, as it provides girls and young women with economic independence and the ability to make choices about their lives (Handayani et al. 2022). Unemployment, on the other hand, is seen as a risk factor, as it can lead to economic insecurity and pressure to marry at a young age (Liu et al. 2021). Rural poverty, which is characterized by a lack of basic infrastructure and services, is also seen as a risk factor, as it can limit girls' and young women's opportunities and increase their vulnerability to child marriages (Ramaswamy & Seshadri, 2020). Lastly, gender inequality, which refers to the unequal treatment or perceptions of individuals based on their gender, is also seen as a risk factor, as it can limit girls' and young women's opportunities and perpetuate the practice of child marriages (Khan et al. 2017, Deane, 2021). Overall, the theoretical framework of this study is based on the idea that child marriages in Pakistan are affected by a complex interplay of social determinants of health, including education, wealth, unemployment, rural poverty, and gender inequality. The study aims to explore the relationship between these factors and child marriages in order to inform the development of targeted and effective interventions aimed at reducing the incidence of child marriages and improving the well-being of girls and young women in Pakistan.

3.2. Econometric Framework

To begin, descriptive statistics is used that provide an overview of the sample and the distribution of the variables. This includes measures such as mean, median, and standard deviation for continuous variables, and frequency counts and percentages for categorical variables. Frequency distributions based on a 5-point Likert scale is further be used to analyze perceptions of the

effectiveness of educational and economic empowerment programs in reducing the incidence of child marriages. It provides valuable insights into the perceptions of the households surveyed and the effectiveness of these programs. Next, the study used multivariate regression analysis to investigate the relationship between child marriages and the independent variables. This include estimating a regression model, with child marriage as the dependent variable, and education level, wealth status, unemployment rate, poverty, and gender inequality as independent variables. Its allow the study to examine the relative importance of these factors in predicting the incidence of child marriages and identify potential areas for intervention. Equation (1) shows the regression apparatus to address the answers of the study's research questions for further policy formulations, i.e.,

$$\text{Child marriages} = \beta_0 + \beta_1(\text{Education level}) + \beta_2(\text{Wealth status}) + \beta_3(\text{Unemployment rate}) + \beta_4(\text{Rural poverty}) + \beta_5(\text{Gender inequality}) + \varepsilon \quad (1)$$

In this equation, "Child marriages" is the dependent variable, which is the outcome of interest. The independent variables are "Education level", "Wealth status", "Unemployment rate", "Poverty", and "Gender inequality", and each of them is represented by a coefficient (β_1 , β_2 , β_3 , β_4 , and β_5 respectively). These coefficients represent the relationship between each independent variable and the dependent variable, with positive coefficients indicating a positive relationship and negative coefficients indicating a negative relationship. The constant term (β_0) represents the baseline probability of child marriages, and the error term (ε) represents any unexplained variability in the outcome.

4. RESULTS AND DISCUSSION

Table 1 shows the demographic survey of the respondents. Regarding the gender, the sample is 63% female and 37% male. This indicates that the majority of the respondents are female. This could be important to consider when interpreting the results of the study, as gender may be a significant predictor of child marriages. The age of the respondents is also provided, and the majority of the respondents are between 21 years to 25 years (34.8%), followed by 15 years to 20 years (23.9%), 26 years to 30 years (13%), and more than 30 years (28.3%). This could be important to consider when interpreting the results of the study, as age may be a significant predictor of child marriages.

Table 1: Demographic survey

Demographic Factors	Percentages (%)
- Gender	
Male	37
Female	63
- Respondents' Age	
15 years to 20 years	23.9
21 years to 25 years	34.8
26 years to 30 years	13
More than 30 years	28.3
- Education Level	
14 years of education	58.7
16 years of education	6.5
Others	34.8
- Respondent's Household Income	
20,000-30,000	41.3
30,001-40,000	8.7
40,001-50,000	19.6
More than 50,000	30.4

Source: Author's survey.

The education level of the respondents is also provided, and the majority of the respondents have 14 years of education (58.7%), followed by others (34.8%) and 16 years of education (6.5%). This could be important to consider when interpreting the results of the study, as education level may be a significant predictor of child marriages. The majority of the respondents fall in the income category of 20,000-30,000 (41.3%), followed by more than 50,000 (30.4%), 40,001-50,000 (19.6%), and 30,001-40,000 (8.7%). This could be important to consider when interpreting the results of the study, as household income may be a significant predictor of child marriages.

Table 2 shows the summary of responses to a questionnaire on child marriages and related factors. The responses have been collected on a 5-point Likert scale, with options for "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree." It provides the number of respondents that chose each option for each statement, as well as the percentage of the total respondents that chose each option. The statements in the table cover various aspects related to child marriages, including exploitation of basic rights of girls, negative effects on health, global phenomena, the importance of education and wealth, the role of unemployment and rural poverty, and gender

inequality.

Table 2: Frequency Distribution in Percentage

Q.No.	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Child Marriages						
1	Do child marriages exploit the fundamental rights of girls?	4.3	10.9	0.9	39.1	34.8
2	Child marriages negatively affect the health of the child.	4.3	13	6.5	45.7	30.4
3	Child marriage is a global phenomenon.	0	15.5	32.6	43.5	8.5
Education						
4	Education is essential for reducing child marriages.	2.2	2.2	10.9	37.0	47.8
5	Education improves analytical wisdom that helps to reduce child marriages.	0	2.2	8.7	41.3	47.8
Wealth						
6	Improving the wealth of society decreases child marriages.	4.3	21.7	32.6	30.4	10.9
7	Increasing job opportunities reduce child marriages in society.	0	19.6	17.4	37.0	26.1
Unemployment						
8	Unemployment creates division in society leading to an increase in child marriages.	2.2	10.9	26.5	45.7	15.2
9	Unemployment increases mental stress that one of the causes of child marriages.	4.3	15.2	13	41.3	26.1
Rural Poverty						
10	Child marriages occur in society due to poverty in rural areas.	6.5	6.5	13.0	52.2	21.7
11	Increasing income inequality increases child marriages in a country.	2.2	10.0	34.8	37	13
Gender Inequality						
12	Increasing the share of gender disparity in education leading a cause of child marriages.	0	8.7	34.8	39.1	17.4
13	Increasing the share of gender disparity in the labour market causes child marriages.	2.2	17.4	37	28.3	15.2

Source: Author's survey.

The majority of the respondents agreed that child marriages exploit the basic rights of girls (73.9%) and negatively affect the health of children (76.1%). They also agreed that child marriages are a global phenomenon (76.1%) and that education is important in regards to reducing child marriages (84.8%). Additionally, a majority of the respondents believed that improving wealth in society decreases child marriages (61.1%), increasing job opportunities reduces child marriages (63.5%), unemployment creates division in society leading to an increase in child marriages (71.4%), unemployment increases mental stress which leads to child marriages (67.4%), and rural poverty causes child marriages (74.4%). Furthermore, a majority of the respondents believe that increasing income inequality increases child marriages in a country (50%) and that increasing gender disparity in education and labor market causes child marriages (45.5%).

Overall, the responses suggest that majority of the respondents agree or strongly agree that child marriages exploit the basic rights of girls and negatively affect the health of children. They also agree that education is important in regards to child marriages and it improves analytical wisdom that helps to reduce child marriages. The respondents are also of the opinion that increasing wealth of the society decreases child marriages, and increasing job opportunities reducing child marriages in a society. They also agree that unemployment creates division in a society leading to an increase in child marriages and increasing mental stress which is a cause of child marriages. They also believe that rural poverty and increasing income inequality increases child marriages in a country. They also agree that increasing the share of gender disparity in education leading to a cause of child marriages and in labor market causing child marriages in a society. Table 3 shows the descriptive statistics of the variables.

Table 3: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Std. Deviation
Child Marriages	1	5	3.7319	.78132
Education	1	5	4.2935	.69583
Wealth	1	5	3.4565	.89954
Unemployment	1	5	3.6522	.93017
Rural Poverty	1	5	3.6087	.81590
Gender Inequality	1	5	3.5109	.86596

Source: Author's survey.

The study examined several variables in relation to child marriages, including education, wealth, unemployment, rural poverty, and gender inequality. The response variable, child marriages, had a minimum value of 1.67, a maximum value of 5, a mean of 3.73, and a standard deviation of 0.78. This suggests that the majority of the values for child marriages fall within 0.78 of the mean (3.73) and are distributed around this value. Similarly, the variable of education had a mean of 4.29 and a standard deviation of 0.69, indicating that most of the values for education fall within 0.69 of the mean. The variable of wealth had a mean of 3.45 and a standard deviation of 0.89, indicating a similar distribution of values. Unemployment had a mean of 3.65 and a standard deviation of 0.93, Rural Poverty had a mean of 3.60 and a standard deviation of 0.81 and Gender Inequality had a mean of 3.51 and a standard deviation of 0.86.

The mean values indicate the average level of agreement or disagreement among the respondents for each variable. For example, the mean value of 3.731 for "Child Marriages" suggests that the average level of agreement among the respondents is somewhere between "Disagree" and "Neutral" on the Likert scale. The standard deviation values indicate the degree of variation or spread of the responses for each variable. A smaller standard deviation indicates that the responses are more tightly clustered around the mean, while a larger standard deviation indicates that the responses are more spread out. For example, the standard deviation of 0.781 for "Child Marriages" is relatively small, indicating that the majority of the responses for this variable are clustered around the mean value of 3.731. It is worth noting that, in general, the mean values are relatively low, which suggests that the majority of the respondents disagree or strongly disagree with the statements provided. Table 4 shows the multivariate regression estimates for ready reference.

Table 4: Multivariate Regression Estimates

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.030	.726		1.420	.163
	EDUCATION	.371	.160	.331	2.313	.026
	WEALTH	-.068	.143	-.078	-.472	.639
	UNEMPLOYMENT	-.151	.128	-.180	-1.182	.244
	RURAL POVERTY	.331	.171	.346	1.940	.059
	GENDER INEQUALITY	.199	.133	.220	1.496	.143
a. Dependent Variable: Child Marriages						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.777	5	1.755	3.756	.007
	Residual	18.694	40	.467		
	Total	27.471	45			
Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.565	.320	.234	.68362		

Source: Author's estimate.

The "t" column shows the test statistic (t-value) for each independent variable. It is used to determine whether the estimated coefficient for each independent variable is statistically significant. The "Sig." column shows the probability (p-value) of obtaining a t-value as extreme or more extreme as the one computed from the sample, assuming that the null hypothesis is true. The results show that education, rural poverty and gender inequality are positively related to child marriages, while wealth and unemployment have a negative relation with child marriages. Education variable and rural poverty is statistically significant with p-value of .026 and 0.059, indicating that the relationship between education and child marriages is statistically significant. On the other hand, wealth and unemployment are not statistically significant, with p-value greater than .05, indicating that the relationship between these variables and child marriages is not statistically significant. In terms of the specific coefficients, the model estimates that for a one-unit increase in education, the child

marriages is expected to increase by .371 units, holding all other variables constant. Similarly, for a one-unit increase in rural poverty, the child marriages is expected to increase by .331 units. And for a one-unit increase in gender inequality, the child marriages is expected to increase by .199 units. On the other hand, for a one-unit increase in wealth, the child marriages is expected to decrease by -.068 units and for a one-unit increase in unemployment, the child marriages is expected to decrease by -.151 units, holding all other variables constant.

The results suggest that a lack of education, high levels of poverty in rural areas, and gender inequality are all factors that contribute to a higher incidence of child marriages. This may be because individuals in these circumstances may see child marriage as a means of financial security or a way to alleviate poverty. Additionally, a lack of education may also lead to a lack of knowledge and awareness about the negative consequences of child marriage. On the other hand, the results suggest that higher levels of wealth and lower levels of unemployment are associated with a lower incidence of child marriages. This may be because individuals in these circumstances have more opportunities for education and employment, and may be less likely to see child marriage as a necessity for financial stability. Additionally, individuals with higher levels of wealth may also have greater access to resources and services that can help prevent child marriage. It is important to note that the statistical significance of the results, as indicated by the p-value, suggests that there is a strong relationship between education and rural poverty and child marriage, while the relationship between wealth and unemployment and child marriage is not as strong. The results of this study align with previous research on the relationship between socioeconomic factors and child marriage. Previous studies have also found that a lack of education, poverty, and gender inequality are associated with a higher incidence of child marriage. For instance, Naveed & Butt (2020) argued that poverty, lack of education, and traditional customs are the main causes of child marriage in Pakistan. Child marriage has negative consequences on the physical and mental health of girls, as well as on their education and economic opportunities. The study concludes that efforts to reduce child marriage in Pakistan should focus on increasing access to education and economic opportunities for girls, as well as changing traditional attitudes towards child marriage. Das et al. (2022) provides a comprehensive overview of the different forms of child, early and forced marriage and unions, and the context in which they occur. It also highlights the diversity of factors that contribute to the persistence of these practices, showing that cultural and social norms, poverty, lack of education and gender inequality are among the most common drivers. The study also emphasizes that the consequences of such marriages and unions are severe and multifaceted, including physical and mental health issues, lack of education and economic opportunities, and increased vulnerability to violence and abuse. Research by Aggarwal et al. (2023) shows that young brides are more likely to struggle with mental health issues, including sadness and anxiety, than their never-married counterparts. The study concludes that child marriage is associated with negative mental health outcomes for adolescent girls and that efforts to reduce child marriage should also consider the potential mental health consequences for girls.

Overall, these studies highlight that child marriage is a complex and multifaceted issue that is driven by a variety of factors, including poverty, lack of education, and traditional attitudes and customs. They also demonstrate that child marriage has severe and wide-ranging negative consequences for girls and young women, including physical and mental health problems, lack of education and economic opportunities, and increased vulnerability to violence and abuse. Efforts to reduce child marriage must take into account the diverse and interrelated factors that contribute to the persistence of this practice, and address the consequences of child marriage for girls and young women.

5. MATERIALS AND METHODS

This study aimed to identify key determinants of child marriages and found a positive correlation between rural poverty and child marriages. Additionally, the study found a negative relationship between knowledge and child marriages, indicating that education may serve as an effective strategy to decrease child marriages. Prioritize measures to protect against child marriages, such as increasing access to education for girls and young women in rural areas. Implement policies and programs that aim to reduce poverty in rural areas, as this may also decrease the incidence of child marriages. Address gender inequality by promoting gender equality and empowerment of women and girls in order to decrease the occurrence of child marriages. Governmental and administrative bodies should provide support and resources to communities and organizations working to prevent child marriages. Monitoring and evaluation of these policies and programs should be conducted regularly to assess their effectiveness and make necessary adjustments. There are a few policy recommendations specifically in the context of Pakistan:

- I. Increase funding for education, particularly for girls in rural areas, to promote education and empowerment of young women and reduce poverty, which may decrease the incidence of child marriages.
- II. Implement policies and programs that aim to reduce poverty in rural areas, such as providing economic opportunities, credit, and micro-finance services to families in order to increase their economic stability and reduce the need for child marriage as a financial coping strategy.
- III. Increase awareness about the negative effects of child marriage and the importance of education through public education campaigns and community engagement programs, particularly in rural areas.
- IV. Strengthen legal protections for children and young women against child marriage and ensure that laws and policies are enforced effectively, and
- V. Increase the availability of support services for girls and women who are at risk of or affected by child marriage, such as counseling, health care, and safe houses.

It's essential to recognize that child marriage is not just an individual problem but a structural one that requires a comprehensive approach and the involvement of different sectors and stakeholders. Child marriage is a violation of human rights and it's not just the responsibility of the government but also of the communities, civil society, and the media to work together to end this practice. Only a comprehensive and multi-dimensional approach can ensure that the rights of children are protected, and that child

marriages are prevented, and effectively addressed.

Ethical approval

All international standards have been adopted and compliance.

Informed consent

The study was conducted with equal participation by all authors.

Conflicts of interests

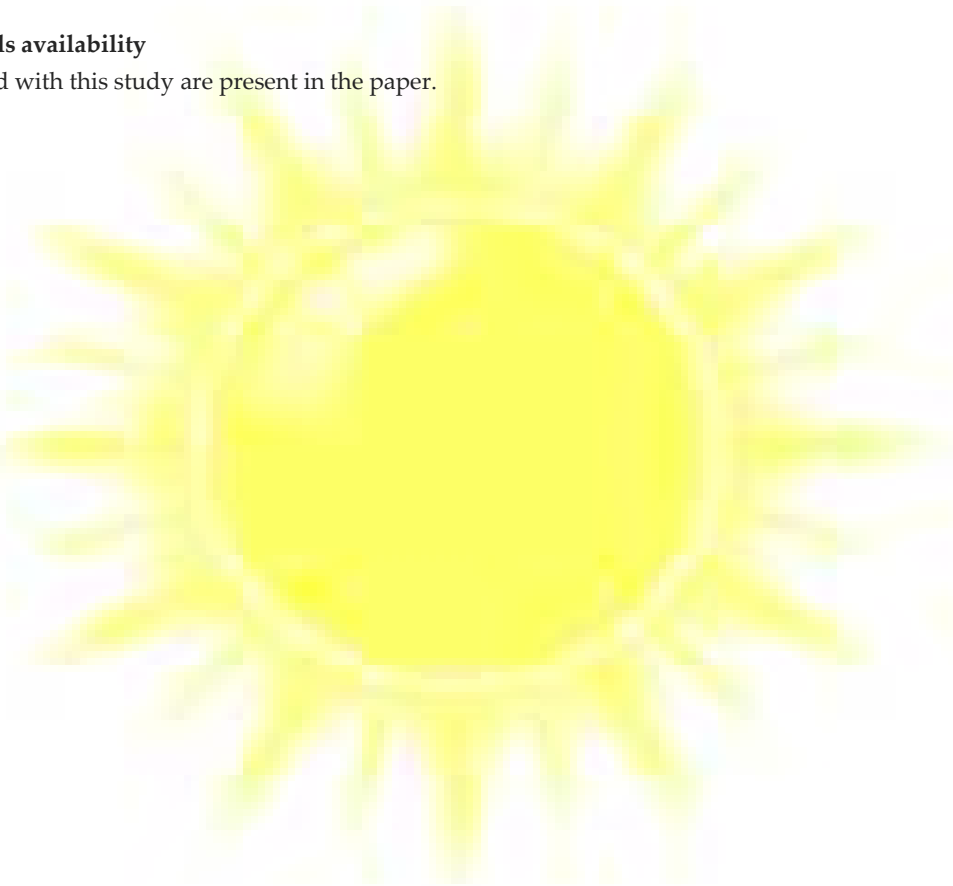
The authors declare that there are no conflicts of interests.

Funding

The study has not received any external funding.

Data and materials availability

All data associated with this study are present in the paper.



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