

Literacy, Women's Empowerment, and the Moderating Effect of Early Marriage in Afghanistan: Findings from the 2015 Afghanistan Demographic and Health Survey

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Abstract

Background: Women in Afghanistan have been historically disadvantaged in regards to accessing education. Although significant amounts of funding and political will have focused on women's education over the past two decades, many barriers for achieving literacy remain. An examination of the relevant protective and risk factors can provide guidance to humanitarian agencies offering community-based education or other education programming to young women in Afghanistan.

Methods: We used (weighted and unweighted) data from Afghanistan's 2015 Demographic and Health Survey (DHS) to examine protective factors against illiteracy. We hypothesized that women's empowerment, as measured by their autonomy in making household decisions across various domains, would be associated with greater odds of being literate, after controlling for salient demographic characteristics along with provincial levels of conflict. We also used predicted probabilities and marginal effects to examine how age married moderates the impact of empowered decision-making on literacy.

Results: In model 1, women who were empowered had 46% higher odds of being literate (95% C.I. 27% to 68%). An interaction term between age married and empowered household-decision making was added in model 2. In model 2, the odds of being literate increased to 234% (95% C.I. 51% to 639%). Results from multiple linear combinations indicate that age married moderates the impact of empowered decision-making on the odds of literacy for women who have median to higher levels of empowered decision-making.

Conclusions: Young women who reported greater empowered household-decision making are more likely to be literate in Afghanistan. When women who are less empowered in their households marry at older ages, their odds of becoming literate are much higher. As women's education remains threatened in Afghanistan, community-based programs may provide supportive services for women throughout the country. Educational initiatives in the country must not only prioritize literacy, but also work through community-based methods to support empowerment and work towards eliminating child marriage in order to support their literacy goals.

Background

Afghanistan has been ravaged decades of wars and armed conflicts, though shifting in its dynamics and intensity throughout the years, has remained a prohibiting factor for investment in basic social services throughout the country, such as education. Women in Afghanistan have been particularly vulnerable and have been historically disadvantaged in regards to accessing education.¹ Although significant amounts of funding and political will have focused on girls' education throughout the past two decades, literacy rates for both women and girls remain astoundingly low.¹ Women face a myriad of barriers for achieving even basic literacy, ranging from challenging terrain and distance to schools to cultural norms such as child marriage.² Despite such barriers, protective factors against illiteracy exist within Afghanistan, and an understanding of these factors may guide future investments in education service provision for women within Afghanistan. While some protective factors may be immutable or more difficult to capitalize upon when designing interventions, others such as women's empowerment can be harnessed and fostered in order to increase literacy in settings where significant gaps in education remain.

Afghanistan Conflict

In response to the attacks of September 11th, the United States launched "Operation Enduring Freedom" and entered Afghanistan to overthrow the Taliban regime³. Within a short period, the Taliban were no longer in control of the country, and an interim government was established in December 2001³. Although one phase of the conflict had ended, intra-state conflict persisted as the Taliban and other armed groups continued to fight for control over parts of the country, often deliberately targeting civilians and civilian sites, such as hospitals and educational institutions^{4,5}. Religious minorities, most often the Hazara minority who practice Shi'a Islam (as opposed to the Sunni majority) and are typically less politically and religiously conservative, were cruelly targeted by the Taliban and frequent recipients of these civilian attacks^{6,7}.

With the defeat of the Taliban at the end of 2001, women were once again permitted to attend school in Afghanistan and to learn to read, though continued conflict disrupted their ability to access education and remain in school⁴. Families typically are less comfortable sending female children to school than boy children in insecure conditions^{1,8}. Families who have been displaced due to armed conflict face additional barriers to education, including obtaining necessary documentation or moving away from school locations⁸.

Conflict and education have a bi-directional, causal relationship, in which access to education can result in greater peace and the presence of conflict can prevent access to education^{9,10,11,12}. In fragile, conflict-affected settings, education has been documented to serve as a protective factor for children, countering the effects of trauma by supporting emotional well-being and cognitive development^{13,14,15}.

The Afghan government and its international partners and donors often prioritize more immediate emergency response activities, such as providing food, water, and shelter^{5,12,13}. It remains difficult for stakeholders to champion the education of women in fragile contexts such as Afghanistan. Unfortunately, as Afghanistan continues to suffer both from protracted conflict and lack of basic social service provision, women in Afghanistan remain particularly vulnerable to being out of school, and ultimately, illiterate¹.

Women's Empowerment And Literacy

Literature points to positive associations between women's empowerment and literacy; for example, in rural Mozambique, women's autonomy was associated with the probability of girls' enrollment in schools¹⁶. Though this association exists, empowerment has been conceptualized many ways, and cannot be fully captured by individual indicators (such as years of schooling or age of marriage)¹⁷. Rather, empowerment may incorporate psychological, educational, relational, collective, political, financial, global, and other dimensions^{18,19}. Collective and individual empowerment are connected, as internalized feelings of empowerment or disempowerment may come from societal and familial cues and habits, and individuals may be change makers for collective autonomy¹⁸. Empowerment has been conceptualized not only as an outcome but also as a process by which women are able to access skills, including literacy²⁰. Because of the complexity in conceptualizing empowerment across spheres, in this paper we focus specifically on measurements that look at decision-making, and the relationship that decision-making has to literacy.

Studies in both Rwanda and the United States (U.S.) found that the roles of marriage and household decision-making served as mechanisms by which gender gaps in financial literacy existed^{21,22}. Though reading and writing literacy precedes financial literacy, such findings suggest that factors such as marriage could be worth examining further.

There is a dearth of literature on the connection between marriage, household decision-making autonomy, and access to education in Afghanistan. Nevertheless, advocacy efforts after the fall of the first Taliban regime in 2001 have focused on empowering women as a means to increasing access to quality social services, such as education and health care^{23,24,25}. In a project in neighboring Pakistan, empowerment was identified as a key mechanism for improving literacy outcomes for women, and implementers targeted empowerment by offering comprehensive courses on life-skills and social-emotional learning²⁶. Similar efforts have been integrated into educational curriculum for classrooms in Afghanistan²⁷. However, social-emotional skills may only be useful for increasing literacy outcomes if gender dynamics exist at a household level that enable women and women to exercise their social and emotional skills through partaking in household decision-making.

Barriers And Facilitators To Educating Women In Afghanistan

The Constitution of Afghanistan was ratified in 2004 and mandates nine years of free, basic education for all Afghan children. In public schools, education is now free up until the university level^{28,29}. Despite the Afghan government's desire to expand

education by providing education free of charge, the government did not have the capacity to address the high numbers of out of school children and to ameliorate a dilapidated national education system^{2,8}.

Out of School Children

Data on out-of-school children in Afghanistan vary significantly and can be questionable in terms of their accuracy. Nonetheless, frequent reports reference a concerning number of out of school children in Afghanistan, most of whom are women^{1,2,8,30}. Even in the most optimistic reports, the percentage of Afghan women who are enrolled in school has never been higher than 50%⁸. In 2017, Human Rights Watch estimated that two thirds of women are out of school, and the United Nations Children's Fund (UNICEF) (in collaboration with the Afghan government) reported that 66% of women age 12–15 were out of school, compared to 40% of boys in the same age group^{8,30}.

Financial Barriers to Education

Although public schools do not require tuition in Afghanistan, families still incur costs for sending their children to school. School supplies, which include pens and pencils, notebooks, uniforms, backpacks, and textbooks, are often costly for families who are already living in poverty⁸. The Afghan Ministry of Education itself struggles to afford textbooks. While it is the responsible party for supplying textbooks to schools, there are often shortages due to logistical or supply challenges⁸. Such financial barriers render families unable to send their children to school in the first place, or cause children to be ill-supplied to learn well as they are attending school. Increases in wealth may serve as a protective factor against illiteracy by enabling parents to afford to send children to school, and on a more macro-level, enabling the Ministry of Education to better resource its schools.

Physical and Geographical Barriers to Education

Afghanistan is a predominantly rural and mountainous country with harsh terrains and climates, which can make travel to and from the nearest school challenging for women. According to Human Rights Watch⁸, women in rural areas are most likely to be out of school. Further, a survey shows that Afghans in urban areas were much more likely to be satisfied with the current provision of education near their home than Afghans in rural areas (80.1% and 63.67%, respectively)³¹.

Even when nearby schools do exist, buildings are often overcrowded and lacking in furniture and supplies². Nearly half (41%) of Afghan schools do not have buildings and children are forced to study outside⁸. Children with physical or intellectual disabilities are typically excluded from education due to transportation, pedagogical, or building access barriers³². Women who do attend school and are of menstruation age are forced to stay at home during their menstruation period due to inadequate sanitation facilities, such as a dearth of gender-segregated toilet facilities or running water^{1,8}. Missing school each month makes it challenging for women to keep up with the pace of the curriculum and can increase their risk of dropping out of school entirely. Another gender-specific barrier is the absence of female teachers throughout the country¹. As the older generation was school-aged during turbulent years when education was illegal for women, there remains a shortage of qualified female teachers, which then reduces the likelihood that women will attend school^{12,27}.

Child Marriage

According to Afghan law, child marriage is considered to be illegal before the age of 16 for women and the age of 18 for boys. Nevertheless, child marriage is highly prevalent in Afghanistan, and the lack of law enforcement and absence of effective systems to register marriages contribute to its prevalence³³. According to the Demographic and Health Survey 2015 findings in Afghanistan, women marry four years earlier than men, on average. For “ever-married” men and women between the ages of 15–49, the median age of first marriage for women is 18.5 years, while the median age of first marriage for men was 22.9 years³⁴.

The pervasiveness of poverty is a key driver of child marriage throughout the country³⁵, despite the fact that many parents may hope to delay marriages for their children. One recent study shows that over a third of parents in surveyed provinces believe that marriage should ideally wait until post-secondary education³⁶. Child marriage is a frequent cause of school drop-out or lack of enrollment for women⁸. In addition, child marriage is correlated with maternal and infant health challenges and violence against

women³³. Thus, waiting longer for marriage may increase the odds of being literate for women in Afghanistan, though access to greater wealth and economic empowerment may facilitate later marriages.

Investments in Education

Afghanistan's 2001, post-Taliban government faced two critical challenges: establishing a functioning education system after decades of armed conflict, and increasing access to education for women and women who had been prohibited from going to school during the Taliban rule. Former President Hamid Karzai partnered with international institutions who were eager to pour money into a new, democratic Afghanistan⁸. In 2002, The Karzai administration launched a "Back to School" campaign, embracing the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Education for All (EFA) goals^{27,37}. The EFA framework, in conjunction with the second Millennium Development Goal of 'achieving universal primary education', accentuates the need to focus on expanding education to marginalized groups, including women and children with disabilities³⁷. As a result, the "Back to School" campaign made considerable progress towards these goals within the first decade of the new government, recruiting and training large numbers of teachers, constructing several thousand schools, and thereby increasing enrollment by close to 800%²⁷.

Such initiatives continued throughout the past two decades, and community-based education emerged as a desirable model for filling the gaps in education throughout the country. In the community-based education model, teachers (often without formal training) are equipped and mentored to deliver primary and secondary education to students in rural areas of Afghanistan^{1,38}. These community-based classrooms are resourced by funding from international organizations and are fed into the formal education system under the Ministry of Education³⁸. This model had key advantages in low-resource areas, as classroom space was typically provided in a home or mosque rather than an official school building^{5,12,38}.

Early data appeared promising, and after just a decade of investment, literacy rates among girls and boys rose from 29% and 43% in 2005 to 48% and 64% in 2012, respectively³⁹. In the last decade, the Girls' Education Challenge, funded by United Kingdom aid (UKAID) with later collaboration with the U.S. Agency for International Development (USAID), provided nearly \$100 million of funding towards accelerated and community-based education for women. These projects targeted over 80,000 of the country's most marginalized women in 17 provinces throughout the country³⁸. Such investments in high-quality education are critical for increasing literacy, yet remain threatened as the political landscape in Afghanistan deteriorates.

Aims And Rationale

The objective of this study is to explore the impact of empowered female household decision-making on literacy for women in Afghanistan who were of school-age after the fall of the first Taliban regime in 2001. We draw on data from Afghanistan's *Demographic and Health Survey (AfDHS)* collected in 2015 to test our hypotheses that women in households reporting greater empowered decision-making will have greater odds of being literate, and that age of first cohabitation (marriage) will moderate the relationship between empowered decision-making and literacy. We expect that when women are more empowered in their decision-making within the household, their odds of becoming literate will be higher. However, the age that women marry will affect the relationship between empowerment and literacy. Child marriage is a key cause of school drop-out, and even empowered females may leave school and remain illiterate if they marry younger.

While much attention has been devoted to funding Afghanistan education and increasing access to education for Afghan women in recent years, to our knowledge, no prior study has used a nationally representative sample to explore predictors of literacy for these young women. In fact, there is very little peer-reviewed literature on education and literacy outcomes in general in Afghanistan, and this study intends to fill that gap by utilizing AfDHS data. We account for other covariates that have been documented in the literature to affect literacy and education in Afghanistan. We have selected literacy as our outcome variable rather than years of education, as quality of education remains a significant issue and literacy rates remain low. A recent analysis of literacy rates and education across nearly 50 developing countries suggested that 40% of women would still be illiterate even after completing grade six⁴⁰. As incredible barriers exist for access to education in the first place, and the ability to learn well within under-resourced schools, many women could remain illiterate after attending years of school.

Methods

Survey Data

As noted above, analysis was performed using data from the AfDHS. This survey includes data on 29,461 “ever-married women” between the ages of 15-49⁴¹. Data is nationally representative and includes women in households across all 34 provinces of Afghanistan, in both rural and urban areas, and women of all ethnic backgrounds within the country. We restricted our analysis to younger women in the sample (under the age of 30, N = 14,330). Our cross-sectional data limited our ability to explore predictors of literacy many years prior to 2015, and women who were of school-age after the fall of the Taliban regime in 2001 (younger women in the 2015 survey) were most likely to have had access to education. Surveys are created by the USAID and are administered by Afghan nationals in the local language of each participant. Further information regarding informed consent and International Review Board (IRB) procedures is available on the DHS website⁴².

Data Analysis

We used hierarchical logistic regression with survey weights to account for clustered data within regions of Afghanistan. Step 1 included the main effects model, and an interaction effect was added in step 2 to examine the moderating effect of age of marriage on women’s household decision-making. As our outcome variable is categorical, and thus our model is non-linear, we examined moderation effects using predicted probabilities and marginal effects. There was minimal missing data in the survey (between 0–.01% of each variable used in the analysis). However, a single item used to build the scale of empowered decision-making at the household level had the majority of its data missing, and we accounted for this by using mean scores rather than summative scores for the scale. We used listwise deletion to account for missing data in our analysis. All data analysis was conducted in Stata 15.

Outcome Variable

Literacy is a dichotomous outcome variable that was recoded from an ordinal variable., which originally rated literacy on a scale from 0 (cannot read at all) to 2 (able to read whole sentences). Options were provided for blind and visually impaired women, but these women were removed from the sample. The majority of respondents (81%) could not read at all (see Table 1), while those who could read ranged from being able to read at least part of a sentence to being able to read an entire sentence.

Key Predictor Variable

Our scale of empowered decision-making at the household level was created based on results of a factor analysis undertaken by Phan¹⁹. Using DHS data in four Southeast Asian countries, Phan identified four components of women’s empowerment at the household level: women’s labor force participation, women’s household decision-making, women’s use of contraception, and women’s education. We decided to include women’s household decision-making in our model and exclude the rest, as use of contraception was not theoretically relevant, education was too closely correlated and included literacy (our outcome variable) as one of its survey items, and labor force participation theoretically emerges from literacy, but does not predict literacy. Guided by the operationalization of household decision-making by Phan¹⁹, we aggregated variables related to three indicators of women’s household decision-making to create a continuous variable ranging from 10 to 20 with higher scores indicating greater empowerment. Household decisions were related to seeking health care, spending on large purchases, and decisions about visiting family and relatives, indicating freedom of movement. Response options for household decision-making included 1) respondent or respondent and husband/partner, 2) husband/partner alone, or 3) someone else.

Co-variates

We created the conflict variable based on a conflict severity index score from 2016, created by the World Bank, in which a score was given to each province of Afghanistan⁴³. Such scores ranged from 1 to 31.7, with higher scores indicating more severe conflict in the province. Using the existing province variable in the survey, we assigned the conflict severity score to each province and recoded this variable into a three-level, conflict variable – low for scores 10 and under, moderate for scores between 11 and 20, and high for scores above 20.

Other covariates, taken from the DHS survey, included place of residence, ethnicity, wealth quintile, age, and age married. Place of residence is dichotomous, split between urban and rural residence. In the DHS survey, eight ethnic groups are represented; due to number of respondents, we focused on respondents who identify as Pashtun, Tajik, Hazara, and Uzbek, with respondents from other ethnic groups labeled “other.” The wealth index is a composite measure of a household’s cumulative living standard, including selected assets and access to water and sanitation facilities⁴⁴. Age and age married are both continuous. We examined collinearity of the variables used in the models, and the variance inflation factor was low (vif = 1.92), suggesting multicollinearity was not an issue.

Table 1
Descriptive Statistics of all Covariates (N = 14,330)

Variable	N	Unweighted (%)	Weighted (%)	Unweighted M (SD)	Weighted M (SD)	Range
Literacy						
Cannot read at all	11,606	80.99	78.84			
Able to read at least parts of a sentence	2,724	19.01	21.16			
Conflict						
Low	2,670	18.59	7.22			
Middle	5,749	40.04	41.72			
High	5,940	41.37	51.06			
Place of Residence						
Urban	3,344	23.39	22.21			
Rural	11,015	76.71	77.79			
Ethnicity						
Pashtun	6,453	45.01	42.22			
Tajik	4,153	28.97	31.35			
Hazara	1,226	8.55	9.29			
Uzbek	909	6.34	10.65			
Turkmen	1,596	11.13	6.49			
Wealth Quintile						
Poorest	2,572	17.91	19.05			
Poorer	3,269	22.77	20.72			
Middle	3,138	21.85	19.91			
Richer	3,184	22.17	21.48			
Richest	2,196	15.29	18.84			
Age				23.50 (3.36)	23.50 (3.37)	15–29
Age Married				17.36 (2.87)	17.31 (2.92)	8–29
Empowered Decision-Making				15.34 (3.06)	15.56 (2.93)	10–20

Results

In the sample of 14,330 ever-married in the AfDHS, 80.99% were illiterate. In model 1 we observed that with a one-unit, positive change in the 10-point scale of empowered decision-making, Afghan women in the sample had 46% higher odds of being literate (95% C.I. 27–68%), which supports our first hypothesis. Other significant covariates in the model that predicted literacy included Tajik and Turkmen ethnic identities, the top three quintiles of the wealth index, low conflict severity, and (older) age married. In model 2, we added the interaction effect between ethnicity and women’s empowered decision-making at a household level. While slight changes were observed in the effect sizes for significant covariates in model 2, empowered decision-making remained significant and increased in its effect size. After adding the interaction effect between age married and empowered decision-making to the model to test our second hypothesis, Afghan women with a one-unit, positive change in the 10-point scale of empowered decision-making 234% higher odds of being literate (95% C.I. 51–639%). See Table 2 for full results of the hierarchical logistic regression.

Table 2
Hierarchical Logistic Regression Predicting Literacy (n = 928)

Predictor	Model 1		Model 2	
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
<i>Conflict (base value = high)</i>				
Moderate	1.68	[0.94, 3.03]	1.52	[0.85, 2.72]
Low	3.77**	[1.45, 9.88]	3.52**	[1.27, 9.75]
<i>Place of Residence (reference = rural)</i>				
Urban	0.78	[0.29, 2.09]	0.73	[0.29, 1.83]
<i>Ethnicity (reference = Pashtun)</i>				
Tajik	3.12**	[1.27, 7.64]	3.20**	[1.32, 7.70]
Hazara	1.43	[3.17, 6.46]	1.53	[0.34, 6.95]
Uzbek	1.65	[0.31, 6.46]	1.59	[0.72, 3.48]
Turkmen	0.31*	[0.11, 0.89]	0.29*	[0.10, 0.86]
<i>Wealth Quintile (reference = Poorest)</i>				
Poorer	1.78	[0.64, 4.92]	1.74	[0.61, 4.95]
Middle	5.74**	[1.34, 24.62]	5.56**	[1.29, 23.92]
Richer	4.60***	[1.45, 14.59]	4.39**	[1.38, 13.98]
Richest	12.52***	[2.88, 54.47]	13.08***	[3.15, 54.25]
Age	0.93	[0.85, 1.02]	0.92	[0.84, 1.02]
Age Married	1.08*	[0.99, 1.18]	2.36**	[1.14, 4.87]
Empowered Decision-Making	1.46***	[1.27, 1.68]	3.34**	[1.51, 7.39]
Empowered Decision-Making * Age Married			0.96*	[0.92, 1.00]
* $p < .05$, ** $p < .01$, *** $p < .001$				

We then used predicted probabilities to further examine how age married moderates the impact of empowered decision-making on literacy. We conducted post-estimation statistical tests – through the “margins” command in Stata – at each five-year interval of age married, first between the highest and median empowered-decision making groups, then between the median and lowest empowered-decision making groups, and finally, between the highest and lowest empowered decision-making groups. We

observed statistically significant differences in literacy at each age married interval between women in the highest and median groups ($p = 0.027$ to 0.042). However, when we looked at differences in literacy between women in the highest and lowest groups, and the median and lowest groups, the differences were not significant.

For women who reported median empowered decision-making levels, we observed steadier increases in the odds of literacy as age married increases (see Fig. 1). We see inverse effects for women who reported the highest empowered decision-making: as the age married increases, the odds of literacy actually decrease. After age 26, women who report median empowered decision-making levels actually have greater odds of literacy than their counterparts who reported highest levels of empowered decision-making. Thus, we determine that age married moderates the impact of empowered decision-making on the odds of literacy (when women have median to higher levels of empowered decision-making). Post-estimation statistical tests indicate that when women who are less empowered in their households wait longer to be married, their odds of becoming literate are much higher, which confirms our second hypothesis.

Discussion

This study examines the impact of empowered decision-making in the household on the odds of literacy for young women in Afghanistan. Although empowered decision-making can inherently be cultural and thus more immutable for outside interventionists¹⁸, many education programs in Afghanistan have effectively included community engagement and awareness-raising strategies that were reported to positively influence women's education outcomes^{30,38,45}. Given the results of post-estimation statistical tests, addressing child marriage for Afghan women could also be an avenue for increasing literacy in a context of low empowerment. Our hypothesis is confirmed that for each additional year that a girl remains unmarried, her odds of literacy increase, and when women who are less empowered in their households wait longer to be married, their odds of becoming literate are much higher. Recent investments in education have largely benefitted younger women, and data show that early marriage is a prominent cause of school drop-out^{1,8}. Social service agencies must continue funding community-based education initiatives that grant women throughout the country access to quality education. Advocacy efforts that seek to increase the likelihood that households keep their daughters in school can speak to the effects of child marriage, and emphasize the economic benefits to households of women's literacy.

Afghanistan's stark economic inequality plays a role on the effects of literacy as well. While there is no Gini Index data that is available for Afghanistan, a 2015 report indicates that 90% of Afghans struggle to live on their current income.⁴⁶ This may signal that even those in the "richer" category are still living in poverty throughout the country. In 2015, the World Bank reported that those in the top quintile of wealth hold over 40% of the total expenditure in the country, which is twice as high as the bottom two quintiles combined⁴⁷. It is likely that the first four wealth index quartiles are actually quite similar to each other economically, and a smaller group of elite Afghans hold the majority of the country's wealth. We conclude that access to resources serves as a protective factor against illiteracy, and presume that given the rates of poverty throughout the country, even moderate increases in household income and wealth could lead to increases in literacy. Longitudinal data collected within socio-economic interventions could measure the impact that livelihoods or cash-transfer programs have on literacy to better assess this.

Findings regarding conflict severity and ethnicity may inform targeting decisions for future girls' education programming. Intrastate conflict may be one of the most challenging factors for interventionists to address at the root cause, nonetheless, conflict profoundly impacts the effectiveness of interventions and the ability to adequately assess outcomes⁴⁸. We expected to see in our results that women living in regions of lower conflict severity were more likely to be literate than their counterparts in regions of high conflict severity, and we observed this. However, a surprising finding in the study was the enormous impact that ethnicity had on the odds of being literate. Women from the Tajik minority in particular had significantly higher odds of being literate than their Pashtun counterparts, which may be rationalized by the cultural and geographical differences that these groups have. Trani and colleagues had similar findings in a study on access to educational facilities. Children who were ethnic minorities were substantially more likely to have access to school than Pashtun counterparts²⁷. Future studies should explore and unpack the potential reasons that ethnic minorities have much more favorable odds of education-related outcomes, and interventionists making targeting decisions may wish to deliberately target Pashtun areas of the country where literacy rates remain lower, or consider remote management techniques to increase education programming in conflict-affected areas of the country⁴⁹.

Community-based education can address many barriers to literacy, including physical and geographical barriers, lack of female teachers, lack of school supplies such as textbooks or buildings, and even early marriage through funded community engagement activities. As women's education remains threatened throughout the country, community-based education may emerge as a promising model for reaching conflict-affected communities and optimizing community partnerships to promote empowered decision-making for females in households. Such education initiatives must prioritize the quality of learning and measure literacy outcomes for women rather than years of education, as literacy is more widely associated with future opportunities for women^{17,26}.

Limitations

A limitation of secondary analysis is that potential protective factors that we would like to explore are not present in the AfDHS survey. For example, we would be interested in learning the types of schools and classrooms that women in the survey had access to. Given the literature on the heavy presence of humanitarian agencies supporting education in Afghanistan, a survey item asking whether or not a respondent had attended a government-run or humanitarian-run school could help explain more of the variation that we see in literacy rates. Further, given what we understand regarding the effects of internal displacement on education, it would be beneficial to have access to this data as well. The generalizability of the study findings is additionally limited by access to cross-sectional data rather than longitudinal data and by specific contextual factors that we have accounted for in the analysis. As we restricted our analysis to women in Afghanistan between the ages of 15 and 29, women who are older in the sample were more likely in school many years before the data was collected in 2015. In addition, the conflict severity index is relevant only to 2015. Afghanistan is a unique socio-political and cultural context, and the factors that impact literacy odds may not be relevant outside of Afghanistan. Nonetheless, given the availability of DHS data from many other countries, future analyses could confirm this.

Conclusion

With the recent withdraw of U.S./NATO forces from Afghanistan in August 2021 and the subsequent overthrow of the government, the Taliban's new regime comes with heightened challenges to social services and human rights in the country, particularly for women. As Afghan and international stakeholders seek to maintain investments in girls' education throughout the country, it is valuable to consider protective factors against illiteracy and recognize how these factors could be harnessed within current and future interventions. For global social service agencies seeking to engage with complex social problems in conflict-affected zones such as Afghanistan, an understanding of existing protective factors can deepen their understanding of the contexts within which they work. Through collaborative partnerships with international donors and community-based organizations, global social service agencies can harness these protective factors to better meet the need of the most vulnerable and marginalized.

Abbreviations

CI: Confidence Interval

DHS: Demographic and Health Survey

EFA: Education for All

UNESCO: United Nations Educational, Scientific, and Cultural Organization

UNICEF: United Nations Children's Fund

US: United States

UKAID: United Kingdom Aid

USAID: United States Agency for International Development

Declarations

Ethics Approval and Consent to Participate

Not applicable.

Consent for Publication

Not applicable.

Availability of Data and Materials

Data used for this analysis is publicly available upon request through the DHS Afghanistan website⁴¹.

Competing Interests

The authors declare that they have no competing interests.

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Authors' Contributions

LB contributed to drafting the manuscript and conducting the analysis. EK contributed to drafting the manuscript and conducting the analysis. FS contributed to drafting the manuscript. QA contributed to drafting the manuscript.

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Figures

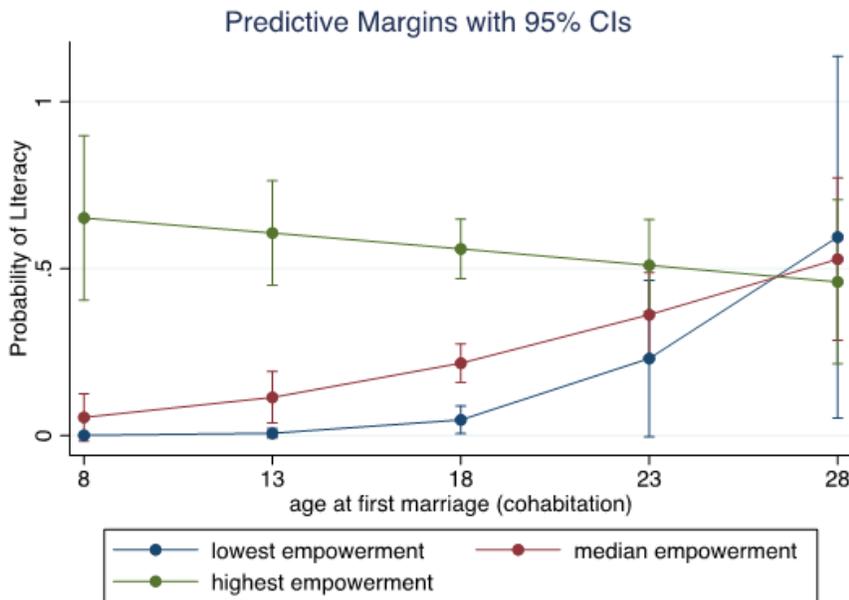


Figure 1

Predicted Probabilities and Moderation of Age of First Marriage on Women's Empowerment