Promoting Adolescent Engagement, Knowledge and Health (PAnKH) in Rajasthan, India

Medium term follow-up, Report

ICRW INTERNATIONAL CENTER FOR RESEARCH ON WOMEN

IFS

The British Academy

Promoting Adolescent Engagement, Knowledge and Health (PAnKH) in Rajasthan, India

Medium term follow-up Report

Institute for Fiscal Studies (London, UK)

Alison Andrew

Sonya Krutikova

Andrea Smurra (andrea.smurra@ifs.org.uk)

International Center for Research on Women (Delhi, India)

Hemlata Verma

Pranita Achyut

Ronak Soni

Contents

Introduction

Women in developing countries continue to be disempowered, facing multiple constraints which prevent them from investing in their human capital and breaking the cycle of dependence on men. These include high youth unemployment, low wages, as well as early marriage and child-bearing (World Bank, 2007; Jayachandran, 2015). India is a particularly salient case. Norms and attitudes centred on the primacy of men as decision makers and on women as holding a family's honour create environments where it is difficult for young women to pursue their education, where many marry early and where they are unequipped with the skills and knowledge needed to make choices that are optimal for their future.

There is some encouraging evidence suggesting that interventions which jump-start women's human capital through building up different skills may have the potential to set them on a better trajectory (e.g. Case & Paxon, 2013; Adhvaryu et al, 2016). Consistently with this, the Indian government has shown a growing interest in adolescent groups with a number of policies and programmes initiated over the last two decades. The focus of these has gradually broadened from girls' physical health and school attendance, to include life-skills, empowerment and knowledge of sexual and reproductive health. The aim is to target the barriers that adolescent girls face to securing better economic and psychosocial outcomes.[1]

Much of the evidence that exists on the potential of interventions in adolescence to improve key outcomes such as schooling and marriage focuses on programmes that either relax financial resource constraints such as cash transfers (Baird et al, 2011; Duflo et al, 2015; Buchmann et al, 2017), focus on specific vocational skills training only (e.g. Field et al, 2010), or are very "bundled" and include life-skills training and empowerment alongside a number of other components such as vocational skills training, cash transfers, microfinance initiatives etc. (e.g. Buchmann et al, 2017; Adoho et al 2015). From a theoretical perspective, it is unclear how such programmes might impact targeted outcomes, including marriage and education, in contexts where girls are particularly disempowered due to restrictive norms that limit their mobility and leave them with little say over these crucial choices.

Researchers at ICRW, PRADAN and IFS teamed up to design and evaluate a programme – PAnKH – with the aim of addressing these barriers and provide a blueprint for scalable and cost-effective programmes targeting adolescent girls' education, early marriage, life skills and physical and mental health. PAnKH's objectives are similar to those of the major existing government programmes such

---

[1] These include programmes such as Beti Bachao Beti Padao (BBBP) and Rashtriya Kishor Swasthya Karyakarm (RKSK). Detailed descriptions can be found in the companion Implementation and Cost Effectiveness Analysis report

as SABLA[2] and RKSK, as is its community-based approach focused on engaging adolescent girls through group activities and Life Skills training. However, two important features set this intervention apart from its predecessors. First, PAnKH utilises para-professional mentors.[3] Second, and perhaps most importantly, a key component of PAnKH's model is the direct engagement of participants' wider community.

Community engagement is one of the pillars of PAnKH's theory of change. While many interventions sought to lift the material constraints on young women's choices over education, employment and marriage, outcomes in these domains are also driven by a complex set of expectations and social norms. In rural Rajasthan, the setting of this study, restrictive norms affect young women's agency, mobility and their ability to spend time outside the home (Andrew et al., 2023). These constraints, in turn, limit young women's ability to pursue an education outside of the village or seek paid employment, increasing the likelihood of early marriage. Even if such norms are held by families and internalised by young women, they are ultimately enforced by the broader community. As PAnKH group activities and Life Skills training encouraged young women to challenge prevailing social norms, creating an enabling environment within their communities was seen as potentially crucial to the programme's success.[4]

PAnKH was rolled out in 125 villages across Dholpur district, Rajasthan, between August 2016 and September 2017. In order to evaluate the programme's effectiveness, we designed a cluster randomised controlled trial (RCT) with three arms: (i) one in which only the activities directly targeting the girls (group education and sports sessions) were implemented,[5] (ii) one in which these were complemented by community engagement activities, and (iii) one in which none of the PAnKH programme components were implemented (the control group). We collected data in all three arms before and after the implementation of the programme[6] to evaluate and compare impacts of the "girl only" and "integrated" models of the PAnKH programme on key outcomes including marriage, education, life-skills, mental health and gender attitudes.

Analysing data collected two years after the program was first implemented, in 2018, Andrew et al. (2023) found that the intervention had significant short-term impacts. PAnKH increased young women's enrolment rates – both in school and post-secondary education - and, through this channel,

---

[2] Rajiv Gandhi Scheme for Empowerment of Adolescent Girls

[3] Mentors received a competitive salary for their work, were chosen to be slightly older than peer educators in government programmes (19 to 25 years rather than, e.g., 15 to 18 in RKSK), and received intensive training (28 days in total) together with frequent supervision and support

[4] This dimension of PAnKH is related to the approach of BBBP, but follows a more structured approach. Engagement primarily took the form of community 'Call for Action' events run by the adolescent girls and their mentors every two to three weeks. In these events girls and mentors presented the topics they had been covering in the groups to the community, facilitated a wider discussion and sought support and action from them on these issues. This gave these events a natural structure which closely followed the curriculum of the girls' groups.

[5] PAnKH group activities were open to all girls living in the community between the ages of 12 and 19

[6] 2016 and 2018 respectively.

delayed the transition into marriage. This is true in both *girls only* and *integrated* treatment arms, where impacts on these outcomes are similar. However, community engagement proved to be an important component of the intervention. Young women from the *integrated* treatment arm report significantly less stringent gender norms and lower incidence of violent sanctions, regardless of whether they attended PAnKH initiatives. This indicates that involving communities and their leaders engendered broader shifts in norms. In the wake of more progressive norms about their role in society, young women display also significantly reduced symptoms of depression and anxiety.

Were these short-term impacts sufficient to permanently shift young women's trajectories, resulting in sustained improvements in socio-economic empowerment over the medium-term? On the one hand, PAnKH encouraged women to stay in school longer, develop aspirations and delay marriage. These effects could prove transformative over the medium-term if they fundamentally alter young women's employment prospects, the transition into married life or their role within the household. On the other hand, several factors could result in impacts fading away over time. First, it is unclear whether higher human capital will translate into better employment opportunities as labour market structure, households' demands on young women's time and persistent social norm may still impair female labour force participation. Second, the short-term impacts were observed in a population that was still largely nubile when data was collected[7] and it is theoretically unclear whether impacts will persist once more study participants marry. Patrilocal traditions require young women to move to the marital household, away from their natal households and communities. This transition is potentially sufficient to erode gains in terms of socio-economic empowerment as young women might not have the leverage and support required to negotiate better outcomes with the marital family. While it is encouraging to see young women in treated communities delaying marriage due to more prolonged schooling,[8] mapping these effects to long term marital outcomes is crucial for the understanding of PAnKH's effectiveness and the broader constraints faced by young women in India.

In order to investigate these empirical questions, in 2022 we tracked the study sample to measure young women's outcomes five years after PAnKH's implementation. In addition, we collected data from respondents' caregivers, husbands and community leaders, offering a detailed and broad picture of young women's trajectories and the constraints they might face. We complement this evidence with extensive consultations of beneficiaries and focus group discussions in study communities. The present document describes these efforts, together with preliminary qualitative and quantitative findings.

---

[7] At endline in 2018, control group marriage rates were 18.1% for young women aged 17-19, and 5.6% for those aged 14-16.

[8] Andrew and Adams-Prassl (2023) show that young women's schooling has tangible returns in this domain, leading them to marrying more educated and wealthier husbands. Whether this translates into broader gains to young women's socio-economic empowerment and decision-making within the household remain an open question.

The data collection effort was successful in the ambitious goal of tracking a large sample of young women, despite marriage driving significant migration flows. Of the original sample of 5,878 young women, 5,328 were included in this round of data collection.[9] Of these, 59% (3,.123) were not residing in the original location by the time of the survey and had to be found in new communities. 4,348 young women consented to taking the interview and completed it in full. This corresponds to 82% of the targeted sample, and 74% of the total study population interviewed in 2016. Furthermore, we are able to gather information of marital status and school attainments for an additional 1,023 young women who either were not able to answer the survey or moved outside of the enumeration areas by interviewing their mothers/primary caregivers. This means that our analysis can rely on a sample size of 5,371 women (91% of the total study sample) for several of the key outcomes that we set out to investigate (e.g. education level and marital status).

Overall, programme impacts are detectable across several domains for the older cohort of girls (those who were age 17-19 at endline of the original study and 21-23 at the time of this follow-up study). This is also the cohort from which we saw strongest short-run effects. We did not detect short-run effects on the younger cohort (age 15-17 at endline of original study and 18-20 at the time of this follow-up study) and we do not see longer-run effects. This suggests that timing of adolescent girl programmes is of the essence; the older girls were closer to key transition points, including finishing schooling and getting married, than the younger girls at the time of the programme.

The specific domains for which we see impacts include improvements in educational outcomes evident for the older girls in the study. Detailed time-allocation data show that 5 years after the programme ended, young women from treatment communities continue to spend significantly more time on educational activities and significantly less time on domestic chores than those from the control communities. Women in the treatment groups also continue to be less likely to be married 5 years later, at the time of the follow-up survey. And those who are married have more educated husbands with higher earnings than married women in the control group.

Unlike the marriage and education effects, we do not see persistence in the strong mental health improvements that we found in the short-term. This is consistent with the interpretation that the mental health effects came from improvements in the wider community environment (which we proposed in the short-run evaluation). By the time of the 5-year follow-up, most young women had gotten married and were thus living in new communities which had not been targeted by the programme.

There is a strong new impact on young women's work aspirations: a significantly higher proportion of young women in the treatment groups aspires to work, do so on a full-time basis, and outside the

---

[9] These are respondents for whom we were able to collect updated contact details, and were living within a 45km radium from any of the original study clusters.

home. However, at this point in time, we do not see the aspirations translating into higher labour force participation rates. There are several potential explanations for this. Young women's mobility is most restricted during the first years of marriage and especially around the birth of the first child. It may be that work aspirations can only translate into outcomes after this period. Alternatively, it is possible that these are "unrealistic" aspirations which will remain unmet. This raises an important question of whether this program and programs like this one – which do not target the wider environment which shapes the opportunities that young women have - had the unintended consequence of raising aspirations to an unrealistic level.

In addition to the insights generated by these key findings, this project makes a substantive methodological contribution. A key feature of this study was embedding qualitative participatory research within a large quantitative study. This was done through intensive engagement with a Youth Advisory Group (YAG), focus group work, and in-depth one-to-one qualitative interviews with young women across 30 study communities. Evaluations are often characterises by externally imposed definitions of success. Our aim was for these young women to shape the study so that it speaks to the reality that this group faces along with their priorities and perceptions of what the key issues are. Combining qualitative and quantitative methods we developed a quantitative tool which will allow us to establish whether the program was effective at improving the combination of life outcomes that the young women themselves identify as key to their well-being. This is an important contribution to methodology of evaluation implementation which has the potential to influence the way that quantitative evaluations are conducted more widely.

Beyond establishing medium-run effects of the norms change programme and identifying insights relevant for future programme design, over the longer term this project represents a significant contribution to broader understanding of the trajectories of young women through adolescence and into adulthood in contexts, such as Rajasthan, characterised by highly restrictive gender, limited opportunities for women, and very significant gender inequality in outcomes.

The PAnKH Programme

The primary aims of the PAnKH Programme were to delay age at marriage, increase school retention, foster the development of life skills, improve mental health and promote positive gender attitudes of adolescent girls in India. Moreover, additional goals included the creation of a supportive family and community environment that contributed to girl's development.

Programme Components

The key components of the programme included:

Group Education Activities with adolescent girls age 12-17 (GEA): These consisted of a total of around 30 sessions and 48 activities, each activity lasting about 45-60 minutes. These were facilitated by "mentors" selected from amongst young women living in the targeted communities and trained to follow a curriculum developed by PRADAN and ICRW. The curriculum was divided into three segments: basic, intermediate and advanced comprising 11, 12 and 5-8 sessions, respectively (see Appendix D for a sample session). Mentors applied a variety of strategies in leading the sessions that involved interactive games, role-play and group discussions. Advanced curriculum was taught in separate sessions for older and younger, as well as, married and unmarried girls so that discussion of more sensitive topics related to the female body, sexual and reproductive health and family planning could be tailored appropriately. Moreover, the programme designed a Pankh Diary. This tool was created to summarize the positive massages of the programme and allow the girls to review them beyond the programme sessions.

Sports Activities with adolescent girls age 12-17: Building on ICRW experience of implementing Parivartan Girl Sport programme,[10] as well as evidence from developed countries that sports activities can improve academic performance and school attendance among adolescents (Stevenson, 2010) a core component of work with the girls included weekly sports sessions of 60 minutes. These often took place on the same day as the education sessions – girls played a traditional sport called *Kabaddi*, while mentors initiated discussion of key issues covered in the education sessions.

Kabaddi tournament: Kabaddi sport tournaments were held during the project period providing an opportunity for girls from different villages to come together and interact with each other as well as other community members.

---

[10] Parivartan Girl Sports programme is an intervention targeting adolescent girls age 12-16 years with the aim of improving their self-esteem, self-efficacy and aspirations for education: http://strive.lshtm.ac.uk/resources/parivartan-girls-programme-tools

Call for Action Events: these consisted of events for the whole community at the end of each module of the GEA sessions. Girl invited their families and other members of the community and presented the material they had covered during the education sessions, discussing topics related to education, school drop-out, early marriage, social norms and gender oriented violence with members of the community.

In addition to this set of activities, the original design also included (i) activities with mothers and fathers of adolescent girls, and (ii) education activities with men and boys. There were some serious obstacles encountered in initial attempts to implement these4 so it was decided to concentrate on the sub-set of core elements described above and focus on executing those well.

Programme Theory of Change

We propose a theory of change which outlines the main channels through which the PAnKH programme may affect marriage, education, life skills, mental health and gender attitudes. It is guided by our overarching hypothesis that adolescent girls will be able to make critical choices relating to marriage, education, health and livelihood only if they have the right information, understanding and skills to navigate their contexts, are free from fear and violence, are valued by society, and live in a supportive environment both within and outside home. We identify five specific potential mechanisms for programme effects. These include (i) improvement in knowledge; (ii) changes in attitudes; (iii) increased social support; (iv) enhanced life skills and mental health; and (v) creation of enabling environments within the household and community.

We now discuss the role and importance of each mechanism in turn:

Improved Knowledge: Lack of knowledge is likely to be a key constraint in adolescent decision-making, as evidenced, for example, by widespread health campaigns targeting adolescents about the danger of risky behaviours. We expect lack of knowledge about sexual and reproductive health and relationships to be a particularly salient constraint in the study context, where these issues are considered taboo and inappropriate to discuss. Providing adolescents with accurate information related to education (e.g. benefits of educations, rights in school), marriage (e.g. legal age of marriage, relationships in a marriage) and sexual and reproductive health (e.g. information about menstruation and contraception) through the PAnKH programme may shift girls' perceptions of costs and benefits of different decisions related to these areas.

Changes in Attitudes: By introducing new ideas and concepts around gender, education, marriage and sexual and reproductive health, as well as encouraging girls to critically engage with entrenched norms, the programme altering girls' attitudes to key life decisions. Having a clearer conception of some of the prevailing norms and attitudes in negotiation and decision making within the household may help girls to overcome the barriers these attitudes and norms form. For example, by promoting a pro-active attitude to involvement in decision-making within marriage (along with strategies to do so) the programme may

increase the amount of say girls have about use of contraception (a taboo issue which men usually have final say on).

Increased Social Support: Peers and the wider social setting are a particularly important influence in decision-making and wellbeing in adolescence (Knoll et al, 2015). By bringing together adolescent girls in a safe environment, the programme will encourage the formation of new networks and friendships, which will increase the social support and information available to the girls. These networks may also change girls' perceptions of 'norms' in the community and influence attitudes. Programme influence on the norms and attitudes of the other members of the community (mothers, men & boys, wider community) may further enhance the support available to girls in their homes and within the community.

Enhanced Life Skills and Mental Health: Adolescence is increasingly recognised as a critical stage for the formation of life skills (such as self-efficacy, self-esteem, peer-relations and socio-emotional skills) and mental health which are crucial for lifelong wellbeing (Kia-Keating et al. 2011), educational attainment, skills and socio-economic outcomes (Heckman et al. 2006). The PAnKH curriculum targets these critical domains through sports, activities and discussion within the education sessions, along with the promotion of role-models, which encourage girls to feel positive about themselves and support the idea that girls like them have the abilities to succeed in various challenging situations and to affect change. Previous studies have found that interventions with similar components – sports (Ekeland et al. 2005; Dishman et al. 2004) and group based reflective discussions and other games and activities (see Morton and Montgomery (2013) for a review) – had impacts on self-efficacy, self-esteem and other measures of life skills and mental health.

Creation of Enabling Environments within the Household and Community: The outcomes of adolescent girls in our study environment are affected by many factors outside of their direct control. Attitudes, norms and practices in the family and wider community are key. These are targeted by the programme through engagement not just with the girls but with members of their households and the wider community. By working with these groups to consider and question traditional gender norms within the community and in the natal and marital home the programme may make the environment in which the girls live more receptive to their needs, open to their input and safer for them, enabling and supporting them in making the best life choices for them.

Partners

In addition to the partners listed in the proposal, namely the PI and Co-Is from IFS and ICRW, the project team has included a third partner, the survey firm IPSOS. The firm was chosen via a competitive process that involved bids from 4 different organisations. The selection criteria included a thorough understanding of the technical and logistical challenges of the project, the submission of an adequate COVID-19 protocol, and a proved track record of success in managing large field-operations. Working in close partnership with ICRW and IFS staff, IPSOS has been tasked with: recruitment and training of enumerators; design and management of field operations; survey collection and quality assurance.

Finally, we relied on inputs and feedback from the Project Advisory Group (PAG). This committee was formed by ICRW with the objective of gathering insights from organisation with a proven track record of policy and research work with our target population of young women in rural India. The PAG met in September 2021 to provide guidance on the research methodology, specific survey modules and field plans. In particular, the group proved instrumental in developing survey modules aimed at capturing COVID-19 impacts and coping strategies.

The PAG included experts from the following organisations:

- American Jewish World Service – AJWS
- Girls Not Brides
- DASRA
- UNFPA
- IPE Global
- Educate Girls
- UNWOMEN.

Youth involvement and Questionnaire Development

The Youth Advisory Group

The Youth Advisory Group was formed in November 2021 with the objective of maintaining an high degree of participation of study participants in the design and planning of data collection activities. It was formed by 15 young from the 3 treatment arms, 3 peer mentors responsible for the delivery of PANKH activities, and one field facilitator who had been involved in the roll-out of the intervention.

Extensive consultations with the YAG took place at three critical phases of the project. Preliminary consultations took place in November 2021 in order to inform the design of the survey instruments. Discussions focused on participants' perceptions of the PANKH's potential impact pathways, as well as on key outcomes and constraints that matter most for the study population. Alongside the qualitative evidence discussed below, these consultations fed directly into the development of more complex and nuanced survey modules, such as those on time use, decision-making, mobility and aspirations.

A second consultation took place in June 2022, with the YAG asked to participate in survey piloting and further fine-tuning of the instruments. YAG inputs proved particularly useful with respect to the new experimental tasks and activities that were added to the survey. These included, for example, interactive tasks aimed at measuring women's bargaining power within the household and the allocation of domestic duties.

Finally, a third consultations took place in March 2023. The research team presented preliminary findings on PANKH's medium term impacts, engaging YAG members in conversations about potential pathways for the effects shown, as well as collecting feedback on additional outcomes that should be included in the analysis.

Focus group discussions and in-depth interviews

ICRW, with support from Manjari Foundation, carried out focus group discussions (FDGs) in 30 communities across the three treatment arms. Both married and unmarried women were invited and trained facilitators moderate the sessions. In addition, the team carried out 10 in-depth interviews with married women from study communities.

Interviews and groups discussions began with activities asking participants to characterise the features of an empowered woman. Discussions organically moved to activities exploring how different aspects of young women's life – education, employment, marriage, expectations and traditions, etc. – contribute or hamper the path of young women towards empowerment and self-fulfilment.

Respondents characterised an empowered young woman as someone who is "powerful", has voice over the decisions that affect her, "moves forward" and "lives life as per her wishes". Such a person is often described as happy, stressing the link that participants see between empowerment and personal fulfilment.

Education and employment featured prominently in the discussions, both as personal goals and as pathways towards achieving greater independence. Women that pursue an education are seen as happy and allowed greater mobility, underpinned by stronger support from their family and community.

Constraints to mobility are one of the main barriers to schooling, with families' fear of young women being harassed clashing with their desire to stay in school. These perspectives motivated the development of a survey module aimed at carefully measure young women's mobility, and the perceptions held by women, husbands, caregivers and community leaders about the potential risks connected with young women presence in public spaces.

The relationship between empowerment and marriage appears to be more complex. The image of an empowered woman is not in principle at odds with marriage, as participants did recognise empowered women as having a central role within the family. Yet, some dimension of the transition into marriage, rather than marriage per se, represent clear obstacles towards achieving empowerment and ultimately happiness.

Respondents identified the lack of agency over the marriage decision as a key point of discontent. Marriage timing in particular was seen as particularly challenging, with early marriage interrupting young women's education, reducing their employment potential and voice within the marital household. Avoiding this outcome emerged as the most important concern: "*We are happy because we did not get married before 18*". Exercising the right to choose one's partner was also deemed frequently as an important aspect of feeling empowered. Agency in this domain, seldom exercised, is seen as instrumental for young women to marry into more supportive households, who could support their education and employment aspirations even after marriage. These discussions motivated the development of a new survey module where we experimentally evaluate the importance that young women give to various aspects of the marital environment.

Finally, discussion explored young women's employment aspirations and prospects. The ability to join the labour force is seen as valuable regardless of specific occupations, as it represents an avenue out of the confines of the home and domestic duties. Low educational attainments and barriers to mobility represent some of the key constraints highlighted during discussions. These constraints appear to have

been internalised, with respondents often expressing the desire to learn trades, such as tailoring, that can be performed both outside or within the home, and with flexible working hours. These perspectives informed not only an extensive survey module on job aspirations for young women, but also a community questionnaire aimed at measuring availability of employment opportunity for young women.

Data collection

The data collection effort comprised two phases.

The first was a tracking exercise where enumerators visited the last known residence of the 5,878 study participants. The objective of this exercise was to confirm the place of residence for the target population and, if they moved, to record their new contact details together with changes to their marital status or other potential reasons for migrating.

The exercise took place between the 15th of May and 5th of June 2022. Over this period, enumerators attempted to visit 5,624 households[11]. Field teams were successful in locating 5,576 addresses (99.1%) and completed 5,434 (96.6%) tracking interviews.

The information collected during the tracking exercise was used to plan field activities for phase two, the main data collection. The target population was defined as follows:

- Every tracked caregiver for the sample of young women enrolled in the study at baseline in 2016, either a parent or a legal guardian.
- Every woman in the study population that resides in one of the original 90 study clusters, and all the women that moved to a location within a 45km radius from any of the 90 study clusters.
- Every husband of female respondents that were in the target sample, married and cohabiting with her spouse.
- A community leader from each of original 90 study clusters, as well as one leader from each Panchayat where at least one target woman moved to.

Field operations were split across 7 teams, each comprising a supervisor, 5 female enumerators and 2 male enumerators. Supervisors worked in conjunction with IPSOS project managers to locate communities and respondents. This effort leveraged the direct involvement and contextual knowledge of ICRW staff and former mentors. Supervisors were also tasked with engaging local stakeholders, such as community leaders, when visiting a community for the first time. This effort was aimed at introducing local leaders to the objective and scope of the data collection activities, allaying concerns and ensuring the safety of both respondents and field staff. This was in addition to having gathered all the necessary authorization form Province and State authorities.

---

[11]The number of target households for the tracking exercise is lower than the number of study participants because some of them resided in the same household during our last wave of data collection in 2018. This is the case for sisters or relatives living in the same household, and for women marrying into the same household as other study participants.

Male enumerators administered surveys to community leaders, mostly men, and husbands, while female enumerators interviewed women and caregivers.

In addition, ICRW hired three independent monitors, two women and a man, to randomly join survey teams and ensure (i) adhere to the survey protocol, and (ii) compliance with safeguarding measures. Further details on safeguarding measures are provided in the dedicated section below.

Tracking and Survey Completion

Table 1 summarises the size of the target population for the main data collection effort.

Of the original 5,878 study participants, 5,328 were included in this round of data collection. These were women for whom we had tracking information and, based on this information, were believed to reside in one of the original 90 clusters or within a 45km radius from any study location. In addition, 4,590 caregivers and 2,773 were included in this survey round. Community leaders were interviewed in each of the 90 study clusters, as well as in the 204 new panchayats participants had moved to.

Data collection took place between the 13th of July and the 1st of December 2022.

4,348 young women consented to taking the interview and completed it in full. This corresponds to 82% of the targeted sample, and 74% of the total study population interviewed in 2016.
However, the caregivers' survey included a module focused on key outcomes for the young women and man that were in their care. Through this source, we are able to gather information of marital status and school attainments for an additional 1,023 young women who either were not able to answer the survey or moved outside of the enumeration areas. This means that our analysis can rely on a sample size of 5,371 women (91% of the total study sample) for many of the key outcomes central to our research questions, while more granular and detailed data is available for 4,348 women (74% of the total study sample).

4,430 caregivers gave consent and completed the survey in full, corresponding to 97% of the target sample.

Completion rates are somewhat lower for husbands, with 946 surveys completed out of a target population of 2,773 respondents. This lower completion rate, 34%, is driven by two factors.

First, some of the locations where study participants moved to upon marriage could not be visited. This was either due to incomplete/incorrect tracking information, or because they were later found to be outside of the enumeration area, i.e. beyond the 45km radius from the original 90 study clusters. This meant that both female study participants and their husbands could not be interviewed in these areas.

Second, 89.6% of these men are employed, often outside of their village or in a different District. While attempts were made at visiting their households outside of working hours, tracking these men remained

challenging. However, each married woman in our sample was asked questions about key characteristics of their spouse, including age, employment and school attainment. Therefore, while we have detailed information for a subset of the husband sample, key characteristics can be analysed for most of them employing data from the women's survey.

In terms of quality assurance, ICRW implemented a randomised backcheck strategy that targeted 10% of collected surveys. These brief phone interviews, carried out by independent monitors, sought to confirm (i) directly that the interview took place, and (ii) the accuracy of the information collected by asking respondents to confirm their answers to a limited number of questions. These checks were carried out alongside direct observation of field operations by three independent monitors hired by ICRW, who joined survey teams at random to ensure compliance with survey and ethical protocols.

Evidence on research questions

Education

In 2018, 2 years after the intervention, participation in the PAnKH program led to significantly higher enrolment rates. The impacts were concentrated among older women – those aged 15-17 at baseline - for whom gender norms are in greatest conflict with continuing their education and who are at the greatest risk of dropping out. For these young women, we estimate that the groups increased the probability that they were still in school or post-secondary education at endline by 6.1 p.p. (p = 0.009) in the Girl Groups only arm and 4.7 p.p. (p = 0.025) in the Girl Groups and Community Campaigns arm (Andrew et al., 2023).

Table 2 explores PAnKH's ITT effects 6 years after implementation using data from the medium-term follow-up. We begin the discussion from panel B, which focuses on young women aged 15-17 at baseline (21-23 years old at medium-term follow-up). Point estimates are all positive, in line with endline results. The probability of being enrolled in any form of education is 2.9pp higher (p=0.188) in treated communities (Panel B, column 1). However, we cannot reject the null hypothesis that, over the medium term, the initial impacts that PAnKH had on education have faded.

The specific circumstances faced by these young women, however, call for a careful interpretation of these results. The COVID-19 crisis might have limited young women's choices in terms of schooling, whether due to final hardship or mobility restrictions, putting in place barriers that were hard to overcome even in villages where PAnKH indeed shifted restrictive norms. Further analysis of the data in underway with the aim of shedding light on how lockdowns might have interacted with the trajectories of PAnKH participants.

Table 3 explores these patterns further by looking at time use. Panel B shows a significant increase in the time spent in school or studying during an average day. Interesting, this is offset by lower time spent on household chores and caring for household members.

Panel A of Tables 2 and 3 repeat the analysis for young women aged 12-14 at baseline (18-20 years old at medium-run follow-up), showing no significant treatment effect for this group. This is in line with the null effects measured in 2018.

Marriage

Table 4 explores the impact of PAnKH on marital outcomes. Analysis of 2018 data (Andrew et al.,2023) showed that the program significantly impacted marriage rates for the older cohort, those aged 15-17 at baseline, two years after the start of the intervention. Looking at marriages,[12] PAnKH had an impact of -5.5pp against a control group average of 30%. Strikingly, these impacts persist in 2022, with marriage rates 4.6pp lower in PANKH villages, 6% of the control group average (Panel B, column 1).

Two interesting perspectives completement this result. First the effect's magnitude for marriage rates exceeds the effect for enrolment. We can thus exclude that lower marriage rates in PAnKH villages are mechanically driven by young women being still enrolled in school. This, in turn, suggests that the program shifted some fundamental aspect of young women's trajectory into marital life. Further, in-depth analysis of these patterns will seek to shed light on the mechanism and mediators behind the observed delay in marriages.

The second point worth noting is about those young women in treatment village that did get married since the intervention began. Keeping the focus on the older cohort, columns 3 through 8 show ITT estimates on husbands' characteristics. The results highlight how young women in PAnKH villages married to husbands with higher educational attainment, who are more likely to work and, conditional on being employment, have higher earnings. Understanding the mechanism behind this result represents a promising avenue for future research.

---

[12] The outcome variable in this case incudes all forms of marriages, whether celebrated in the past or confirmed for a future date.

Tables

Table 1: Target sample and completed interviews.

Respondent type	Target Population	Completed Surveys
Women	5,327	4,348
Caregivers	4,590	4,430
Husbands	2,773	946
Community Leaders	294	294

Table 2: PAnKH impacts: Education

Panel A	Age 18-20					
	Enrolled (any)		Completed grade 12		Studied past grade 12	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat: Any	-0.030		-0.004		-0.019	
	(0.025)		(0.027)		(0.022)	
	{0.233}		{0.881}		{0.372}	
Treat: Girls only		-0.019		-0.006		-0.018
		(0.032)		(0.033)		(0.027)
		{0.550}		{0.856}		{0.506}
Treat: Integrated		-0.041		-0.002		-0.021
		(0.029)		(0.032)		(0.027)
		{0.154}		{0.945}		{0.442}
Sample avg. | control	0.378	0.378	0.419	0.419	0.257	0.257
test: girl==integrated		{0.507}		{0.915}		{0.923}
N	2711	2711	2708	2708	2565	2565

Panel B	Age 21-23					
	Enrolled (any)		Completed grade 12		Studied past grade 12	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat: Any	0.029		0.021		0.021	
	(0.022)		(0.027)		(0.024)	
	{0.188}		{0.440}		{0.374}	
Treat: Girls only		0.028		0.010		0.017
		(0.027)		(0.029)		(0.026)
		{0.302}		{0.740}		{0.509}
Treat: Integrated		0.031		0.031		0.025
		(0.025)		(0.031)		(0.027)
		{0.219}		{0.322}		{0.363}
Sample avg. | control	0.187	0.187	0.420	0.420	0.218	0.218
test: girl==integrated		{0.914}		{0.442}		{0.749}
N	2452	2452	2452	2452	2452	2452

Note: ***, ** and * denote significance at the 1%, 5%, and 10% levels. All outcomes are dummy variables, and the table presents average marginal effects from logit estimates. Standard errors are reported in parenthesis and p-values in braces. All regression includes the control variables used in the short term impact study (Andrew et al. 2023). For each outcome, we estimate both aggregate effects and impacts split by treatment arm. For the latter, the bottom of the table reports p-values from statistical tests of equality of effects across treatment arms.

Table 3: PAnKH impacts: Time Use

Panel A	Age 18-20									
	Chores		Work		Commute		Education		Time outside the home	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treat: Any	-0.060		0.192		-0.030		-0.056		0.126	
	(0.122)		(0.117)		(0.043)		(0.154)		(0.167)	
	{0.625}		{0.104}		{0.492}		{0.715}		{0.455}	
Treat: Girls only		-0.196		0.286**		0.012		0.008		0.302
		(0.140)		(0.132)		(0.046)		(0.182)		(0.196)
		{0.165}		{0.033}		{0.792}		{0.964}		{0.126}
Treat: Integrated		0.072		0.101		-0.070		-0.119		-0.044
		(0.132)		(0.135)		(0.047)		(0.171)		(0.177)
		{0.586}		{0.456}		{0.137}		{0.489}		{0.803}
Sample avg. | control	5.128	5.128	1.917	1.917	0.371	0.371	1.767	1.767	1.922	1.922
test: girl==integrated		{0.040}		{0.165}		{0.025}		{0.460}		{0.043}
N	2342	2342	2342	2342	2342	2342	2342	2342	2342	2342

Panel B	Age 21-23									
	Chores		Work		Commute		Education		Time outside the home	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treat: Any	-0.341**		0.107		0.055*		0.216**		0.140	
	(0.132)		(0.124)		(0.029)		(0.102)		(0.132)	
	{0.012}		{0.391}		{0.059}		{0.037}		{0.291}	
Treat: Girls only		-0.452***		0.182		0.079***		0.280***		0.145
		(0.145)		(0.146)		(0.030)		(0.102)		(0.141)
		{0.003}		{0.216}		{0.010}		{0.007}		{0.308}
Treat: Integrated		-0.244		0.042		0.034		0.159		0.136
		(0.156)		(0.148)		(0.036)		(0.133)		(0.166)
		{0.122}		{0.777}		{0.345}		{0.236}		{0.414}
Sample avg. | control	5.128	5.128	1.917	1.917	0.371	0.371	1.767	1.767	1.922	1.922
test: girl==integrated		{0.169}		{0.373}		{0.186}		{0.348}		{0.958}
N	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976

Note: ***, ** and * denote significance at the 1%, 5%, and 10% levels. The outcome variables are the number of hours spent on each activity on an average day. Chores include both home services and care for others. Work includes both working on own land/business, as well as working for others. "Time outside the home" is the total number of hours, each day, spent outside of the home, regardless of the specific activity carried out. The table reports OLS estimates. Standard errors are reported in parenthesis and p-values in braces. All regression includes the control variables used in the short term impact study (Andrew et al. 2023). For each outcome, we estimate both aggregate effects and impacts split by treatment arm. For the latter, the bottom of the table reports p-values from statistical tests of equality of effects across treatment arms.

Table 4: PAnKH impacts: Marriage

Panel A	Age 18-20							
	Married		**Husband education: at least grade 12**		**Husband worked past 12 months**		**Husband's earnings (log)**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treat: Any	-0.003		0.016		0.011		-0.036	
	(0.022)		(0.037)		(0.021)		(0.065)	
	{0.880}		{0.661}		{0.591}		{0.581}	
Treat: Girls only		-0.009		0.003		0.034		-0.091
		(0.027)		(0.040)		(0.024)		(0.069)
		{0.743}		{0.933}		{0.150}		{0.189}
Treat: Integrated		0.002		0.028		-0.008		0.018
		(0.025)		(0.042)		(0.023)		(0.081)
		{0.922}		{0.509}		{0.722}		{0.820}
**Sample avg.	control**	0.473	0.473	0.370	0.370	0.881	0.881	6.43	6.43
test: girl==integrated		{0.692}		{0.518}		{0.054}		{0.161}
N	2656	2656	972	972	975	975	692	692

Panel B	Age 21-23							
	Married		**Husband education: at least grade 12**		**Husband worked past 12 months**		**Husband's earnings (log)**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treat: Any	-0.046**		0.055**		0.025		0.134**	
	(0.021)		(0.027)		(0.020)		(0.061)	
	{0.034}		{0.041}		{0.211}		{0.032}	
Treat: Girls only		-0.033		0.046		0.042*		0.107*
		(0.026)		(0.033)		(0.023)		(0.059)
		{0.209}		{0.166}		{0.060}		{0.074}
Treat: Integrated		-0.057**		0.064**		0.010		0.160**
		(0.024)		(0.030)		(0.023)		(0.078)
		{0.020}		{0.030}		{0.678}		{0.043}
**Sample avg.	control**	0.748	0.748	0.415	0.415	0.881	0.881	6.31	6.31
test: girl==integrated		{0.372}		{0.557}		{0.054}		{0.161}
N	2378	2378	1355	1355	1365	1365	977	977

Note: ***, ** and * denote significance at the 1%, 5%, and 10% levels. All outcomes are dummy variables, and the table presents average marginal effects from logit estimates. The only exception is Husband's earnings, measured in logs, for which the table reports OLS estimates. Standard errors are reported in parenthesis and p-values in braces. All regression includes the control variables used in the short term impact study (Andrew et al. 2023). For each outcome, we estimate both aggregate effects and impacts split by treatment arm. For the latter, the bottom of the table reports p-values from statistical tests of equality of effects across treatment arms.

Table 5: PAnKH impacts: Employment and Aspirations

Panel A	Age 18-20							
	Work: last 12 months		Wants to work		Wants to work full time		Wants to work out of village	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treat: Any	-0.028		-0.011		0.007		0.027	
	(0.021)		(0.024)		(0.026)		(0.023)	
	{0.178}		{0.635}		{0.785}		{0.229}	
Treat: Girls only		-0.012		-0.007		0.009		0.044
		(0.023)		(0.030)		(0.030)		(0.029)
		{0.609}		{0.819}		{0.755}		{0.131}
Treat: Integrated		-0.044**		-0.015		0.005		0.012
		(0.022)		(0.028)		(0.031)		(0.027)
		{0.049}		{0.577}		{0.876}		{0.667}
Sample avg. | control	0.170	0.170	0.717	0.717	0.427	0.427	0.276	0.276
test: girl==integrated		{0.105}		{0.796}		{0.884}		{0.323}
N	2342	2342	2069	2069	2067	2067	2013	2013

Panel B	Age 21-23							
	Work: last 12 months		Wants to work		Wants to work full time		Wants to work out of village	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treat: Any	0.010		0.081***		0.102***		0.060***	
	(0.022)		(0.022)		(0.027)		(0.018)	
	{0.648}		{0.000}		{0.000}		{0.001}	
Treat: Girls only		0.031		0.077***		0.105***		0.048**
		(0.025)		(0.028)		(0.030)		(0.020)
		{0.206}		{0.006}		{0.001}		{0.016}
Treat: Integrated		-0.009		0.086***		0.099***		0.070***
		(0.024)		(0.027)		(0.031)		(0.023)
		{0.707}		{0.001}		{0.002}		{0.002}
Sample avg. | control	0.151	0.151	0.616	0.616	0.354	0.354	0.193	0.193
test: girl==integrated		{0.079}		{0.769}		{0.849}		{0.334}
N	1976	1976	1697	1697	1697	1697	1697	1697

Notes: ***, ** and * denote significance at the 1%, 5%, and 10% levels. All outcomes are dummy variables, and the table presents average marginal effects from logit estimates. All regression includes the control variables used in the short term impact study (Andrew et al. 2023). For each outcome, we estimate both aggregate effects and impacts split by treatment arm. For the latter, the bottom of the table reports p-values from statistical tests of equality of effects across treatment arms.

Table 6: PAnKH impacts: Wellbeing and Norms

Panel A

Panel A										Age 18-20
	Wellbeing: depression		Wellbeing: anxiety		Wellbeing: all dimensions		Perceptions of (higher->safer)		Gender norms (higher->more equal)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treat: Any	0.016		0.015		0.020		0.090		0.071	
	(0.051)		(0.049)		(0.049)		(0.067)		(0.059)	
	{0.762}		{0.764}		{0.687}		{0.179}		{0.232}	
Treat: Girls only		-0.003		0.002		0.009		0.129*		0.113
		(0.066)		(0.057)		(0.060)		(0.073)		(0.070)
		{0.965}		{0.967}		{0.885}		{0.079}		{0.110}
Treat: Integrated		0.033		0.027		0.030		0.053		0.031
		(0.056)		(0.057)		(0.055)		(0.073)		(0.065)
		{0.551}		{0.643}		{0.585}		{0.474}		{0.629}
Sample avg. | control test: girl==integrated	0	0	0	0	0	0	0	0	0	0
		{0.587}		{0.689}		{0.730}		{0.212}		{0.220}
N	2341	2341	2341	2341	2341	2341	2209	2209	2261	2261

Panel B

Panel B										Age 21-23
	Wellbeing: depression		Wellbeing: anxiety		Wellbeing: all dimensions		Perceptions of (higher->safer)		Gender norms (higher->more equal)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treat: Any	0.031		0.008		0.023		0.084		0.032	
	(0.052)		(0.061)		(0.058)		(0.051)		(0.059)	
	{0.556}		{0.892}		{0.686}		{0.102}		{0.595}	
Treat: Girls only		0.022		0.009		0.024		0.087		0.044
		(0.066)		(0.073)		(0.071)		(0.053)		(0.064)
		{0.743}		{0.897}		{0.742}		{0.104}		{0.489}
Treat: Integrated		0.038		0.007		0.023		0.082		0.020
		(0.058)		(0.067)		(0.063)		(0.063)		(0.068)
		{0.510}		{0.914}		{0.713}		{0.192}		{0.766}
Sample avg. | control test: girl==integrated	0	0	0	0	0	0	0	0	0	0
		{0.812}		{0.976}		{0.996}		{0.931}		{0.693}
N	1974	1974	1974	1974	1974	1974	1855	1855	1898	1898

Notes: ***, ** and * denote significance at the 1%, 5%, and 10% levels. All outcomes indices summarising answers to each underlying survey module. Each index is standardised with respect to the control group mean and standard deviation, so that coefficients can be interpreted as effect sizes with respect to the control group. The table reports OLS estimates. All regression includes the control variables used in the short term impact study (Andrew et al. 2023). For each outcome, we estimate both aggregate effects and impacts split by treatment arm. For the latter, the bottom of the table reports p-values from statistical tests of equality of effects across treatment arms.

Appendix

Timeline

- Nov 2020:Submission for ethical approval to (i) University College London (UCL) Research Ethics Committee (REC), and (ii) SIGMA in India.
- Feb 2021 : Ethical approval received from UCL REC
- March 2021: Ethical approval received from SIGMA
- September 2021: Project Advisory Group (PAG) formed and held first meeting
- September 2021: Online meeting with Manjari foundation to discuss how COVID was affecting adolescent girls in Dhaulpur. This fed into our design of the surveys
- November 2021: Youth Advisory Group (YAG) formed, and held first meeting with 19 members.
- November 2021: Qualitative data collection, including focus group discussions and in-depth interviews.
- November 2021: Call for bids from survey firms posted. Four proposals evaluated as part of the process and IPSOS was selected as the implementing partner.
- Dec 2021-Mar 2022: Transcripts from focus groups and in depth interviews analysed using the constant comparison method by ICRW researchers and findings incorporated into instrument choice.
- Jan-May 2022: Designing of survey instruments
- May 2022: Presentation of research methodology and survey instruments at the Household Economics WIP seminar series, Oxford University
- May-June 2022: Tracking data collection
- June 2022: Meeting with YAG to review and pilot survey instruments
- June 2022: Selection of independent survey monitors to join ICRW team.
- June 2022: Official authorization and permission letters gathered from District Authorities in Dhaulpur, Agra, Karauli, and Morena.
- July 2022: Recruitment and training of enumerators
- July-Dec 2022: Main data collection
- March 2023: Meeting with YAG in Dhaulpur to discuss preliminary findings and gather their perspectives to inform further analysis.
- March 2023: Online stakeholder dissemination workshop.

Dissemination

- YAG event
- Stakehoder dissemination event
    - Doosra Dashak, (Foundation for Education and Development): A Rajasthan based organisation working on empowering adolescent and youth through education.
    - Vaagdhara: A Rajasthan based organisation working on agriculture and livelihood enhancement with farmers.

o Subhadra Kaul, Independent Consultant.

o Ravi Verma, Director, ICRW Asia

o Pranita Achyut, Director of Research and Program, ICRW

o Ronak Soni, Technical Specialist (Program and Monitoring)

o Savita Kumari, Consultant, PAnKH Follow up study.

o Abhishek Gautam, Associate Director Research – Gender and Health.

o Radhika Uppal, Technical Specialist (Women Economic Empowerment)

o Sandeepa Fanda, Project and Grant manager

o Anurag Paul, Communication Coordinator,

o Falak Raza, Technical Specialist- Gender, Health And Research Ethics

o Surashree Shome, Senior Technical Specialist

The four seminars.

Ravi Verma and Pranita Achyut shared insights and learnings from the PAnKH and other adolescent programs in a roundtable organized by the Packard Foundation: June 30, 2022. Roundtable on the Reproductive Health and Rights Landscape in India. The David and Lucile Packard Foundation.

References

Adhvaryu, A., Kala, N., & Nyshadham, A., 2018. The Skills to Pay the Bills: Returns to On the job Soft Skills Training. Cambridge, MA.

Adoho, F., Chakravarty, S., Korkoyah, D. T., Lundberg, M., & Tasneem, A., 2014. The Impact of an Adolescent Girls Employment Program: The EPAG Project in Liberia (Policy Research Working Paper No. 6832).

Andrew, A., Krutikova, S., Smarelli, G., & Verma, H., 2023. Gender Norms, violence and Adolescent Girls' Trajectories: Evidence from a Field Experiment in India.

Baird, S., McIntosh, C., & Özler, B., 2011. Cash or condition? Evidence from a cash transfer experiment. Quarterly Journal of Economics, 126, 1709–1753.

Barry, M. M., Clarke, A. M., Jenkins, R., & Patel, V., 2013. A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. BMC Public Health, 13, 835.

Buchmann, N., Field, E., Glennerster, R., Nazneen, S., Pimkina, S., & Sen, I., 2017. Power vs Money: Alternative Approaches to Reducing Child Marriage in Bangladesh, a Randomized Control Trial.

Case, B. A., & Paxson, C., 2013. HIV Risk and Adolescent Behaviors in Africa. American Economic Review: Papers and Proceedings, 103. doi:10.1257/aer.103.3.433

Dishman, R.K., Motl,R.W., Saunders, R., Felton, G., Ward, D.S., Dowda, M., & Pate, R.R., 2004. Self-efficacy partially mediates the effect of a school-based physical-activity intervention among adolescent girls. Preventive Medicine 38(5), pp. 628–636.

Duflo, E., Dupas, P., & Kremer, M., 2015. Education, HIV, and early fertility: Experimental evidence from Kenya. American Economic Review, 105, 2757–2797.

Ekeland, E. Heian, F., Hagen, K. and Coren, E., 2005. Can exercise improve self esteem in children and young people? A systematic review of randomised controlled trials. British Journal of Sports Medicine, pp. 792–799.

Eldreth, D., Hardin, M. G., Pavletic, N., & Ernst, M. (2013). Adolescent Transformations of Behavioral and Neural Processes as Potential Targets for Prevention. Prevention Science, 14, 257–266.

Field, E., Jayachandran, S., & Pande, R., 2010, Do Traditional Institutions Constrain Female Entrepreneurial Investment? A Field Experiment on Business Training in India. American Economic Review Papers and Proceedings.

Fuhrmann, D., Knoll, L.J., & Blakemore, S., 2015. Adolescence as a Sensitive Period of Brain Development. Trends in Cognitive Science, 19, 558-566.

Jayachandran, S., 2015. The Roots of Gender Inequality in Developing Countries. Annual Review of Economics, 7, 63-88.

Heckman, J. J., & Rubinstein, Y., 2001. The benefits of skill: The importance of noncognitive skills: Lessons from the GED testing program. American Economic Review, 91, 145–154.

Heckman, J. J., Stixrud, J., & Urzua, S., 2006. The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior. Journal of Labor Economics, 24, 411–482.

Kia-Keating, M., Dowdy, E., Morgan, M. L., & Noam, G. G., 2011. Protecting and promoting: An integrative conceptual model for healthy development of adolescents. Journal of Adolescent Health, 48, 220–228.

Knoll, L.J., L. Magis-Weinberg, M. Speekenbrink, & Blakemore. S.J., 2015. Social Influence on Risk Perception During Adolescence. Journal of Psychological Science, 26(5), pp.583-592

Leventhal, K. S., Gillham, J., DeMaria, L., Andrew, G., Peabody, J., & Leventhal, S., 2015. Building psychosocial assets and wellbeing among adolescent girls: A randomized controlled trial. Journal of Adolescence, 45, 284–295.

Morton, M.H. and Montgomery, P. 2013. Youth Empowerment Programmes for Improving Adolescents' Self-Efficacy and Self-Esteem: A Systematic Review. Research on Social Work Practice 23(1), pp. 22–33.

Stevenson, B., 2010. Beyond the Classroom: Using Title IX to Measure the Return to High School Sports. The Review of Economics and Statistics, 92(2):248-301