

Bride Abduction, Depression, and Labor Market Outcomes

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October 10, 2022

For presentation at the
Life in Kyrgyzstan annual conference
Bishkek, Kyrgyz Republic

Outline of Paper

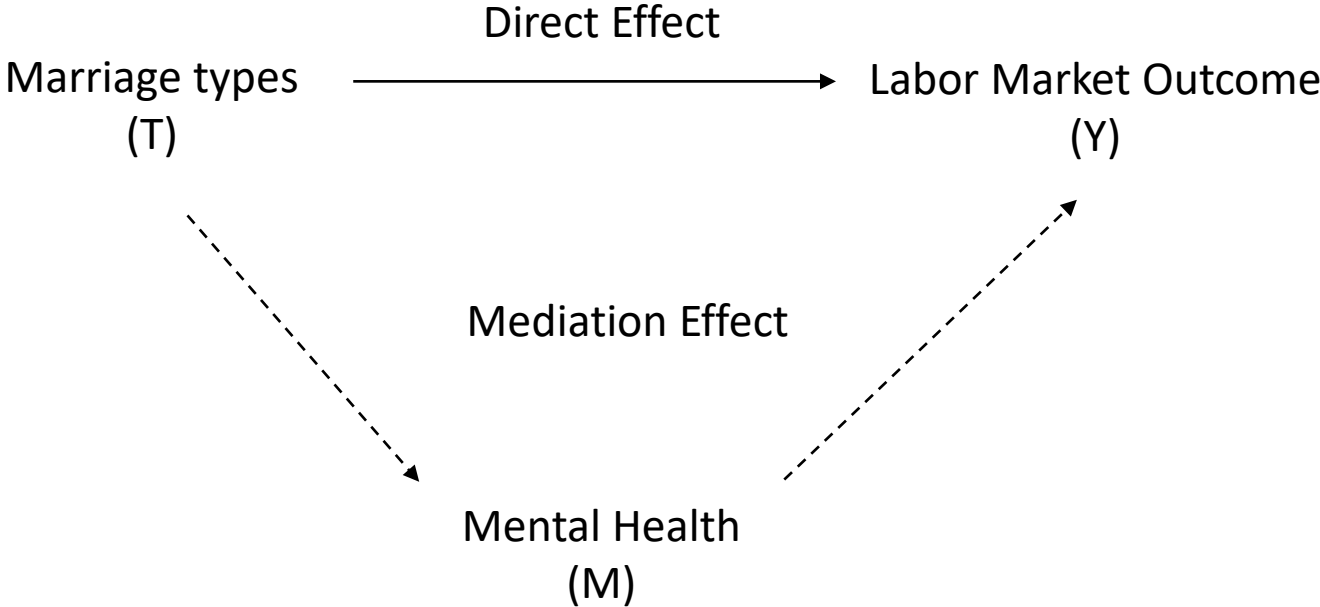
- Marriage types affect mental health conditions
- Mental health conditions affect Kyrgyz women's labor market outcomes, as measured the probability of being a contributing family work
- Marriage types directly affect the labor market outcomes
- The mental health channel explains 33% of all treatment effects of marriage types on labor market outcomes

Related Literature

- Bride capture: Becker, Mirkasimov and Steiner (2017)
- Mental health and labor market outcomes: Layard (2013)
- Multi-valued treatment effects: Dahl (2002), Heckman, Urzua, Vytlacil (2008)
- Mediation effects: Baron and Kenny (1986), Keele and Yamamoto (2010)

Framework

Mediation effect with multi-valued treatment



Framework

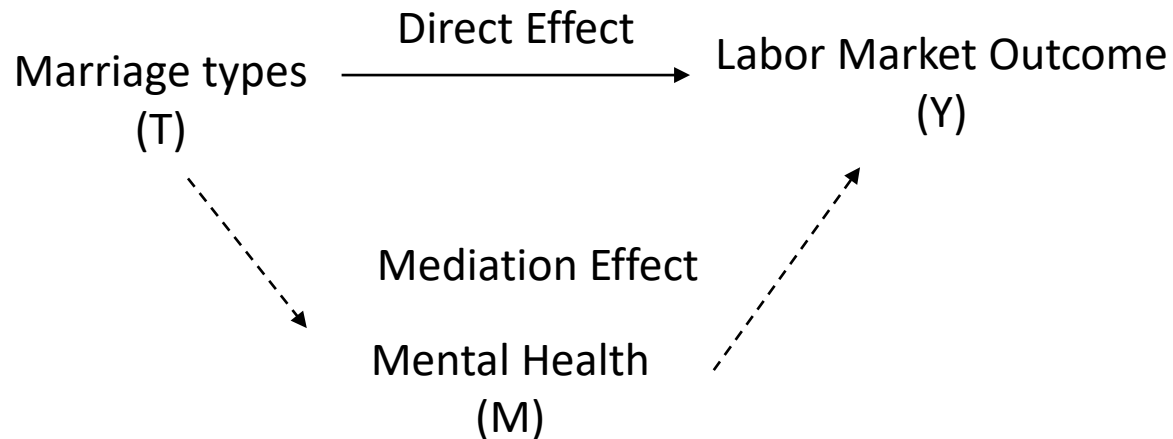
Mediation effect with multi-valued treatment

- Total causal effect (usual treatment effect)

$$\tau_i = Y_i(t, M_i(t)) - Y_i(0, M_i(0))$$

- Average causal mediation effect (ACME)

$$\bar{\delta}(t, t') = \mathbb{E}[Y_i(t, M_i(t')) - Y_i(t, M_i(0))]$$



Framework

- The ACME can be identified and estimated using the following system of equations

$$Y_i = \alpha_1 + \sum_{t=1}^T \beta_{1t} T_{it} + \epsilon_{i1}$$

$$M_i = \alpha_2 + \sum_{t=1}^T \beta_{2t} T_{it} + \epsilon_{i2}$$

$$Y_i = \alpha_3 + \sum_{t=1}^T \beta_{3t} T_{it} + \gamma M_i + \epsilon_{i3}$$

where

- β_{1t} is the treatment effect of treatment t
- $\beta_{2t} \cdot \gamma$ is the mediation effect of treatment t

Main outcome variables

Mental Health

We define

- Depression as answering at least 1 yes to Questions 1 to 3 and 6 to 9
- Severe depression as answering at least 1 yes to Questions 1 to 3 and 6 to 9 at level 2 or level 3

I247	Over the past 2 weeks, how often have you been bothered by any of the following problems?	Not At all	Several Days	More Than Half the Days	Nearly Every Day
	1. Little interest or pleasure in doing things	0	1	2	3
	2. Feeling down, depressed or hopeless	0	1	2	3
	3. Trouble falling asleep, staying asleep, or sleeping too much	0	1	2	3
	4. Feeling tired or having little energy	0	1	2	3
	5. Poor appetite or overeating	0	1	2	3
	6. Feeling bad about yourself - or that you're a failure or have let yourself or your family down	0	1	2	3
	7. Trouble concentrating on things, such as reading newspaper or watching TV	0	1	2	3
	8. Moving or speaking so slowly that other people could have noticed. Or, the opposite - being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
	9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Main outcome variables

Labor Market Outcome

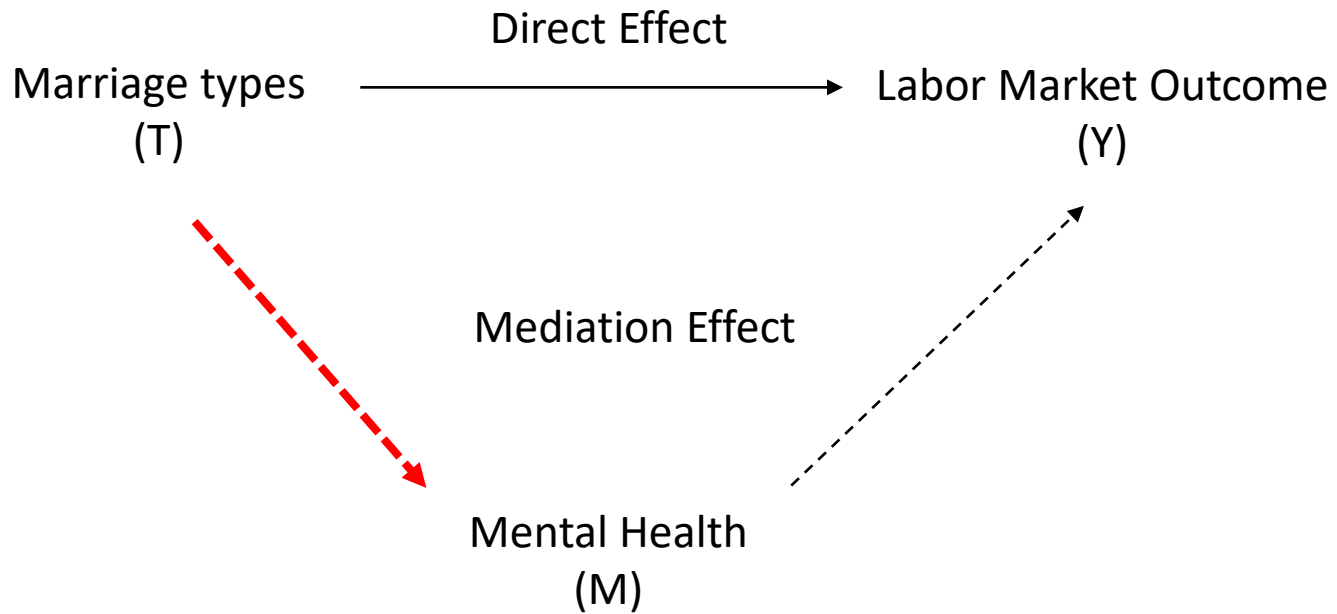
I312	In this work, what is your wage status? Are you ...?	Employer	---> 3.B.1.A.	1
		Own-account worker	---> 3.B.1.A.	2
		Wage employee	---> 3.B.1.B	3
		Contributing family worker	---> 3.B.1.A.	4
		Other	---> 3.B.1.C	5

Descriptive statistics of main variables

	Love Marriage	Arranged Marriage	Non- Consensual Bride Kidnapping	Consensual Bride Kidnapping	Total
	%	%	%	%	%
Has Depression					
No	51.18	51	40.03	42.55	47.87
Yes	48.82	49	59.97	57.45	52.13
Has Severe Depression					
No	90.35	88.15	77	77.09	85.33
Yes	9.65	11.85	23	22.91	14.67
Wage Status					
Employer	1.3	0.73	0.27	1.23	0.84
Own-account worker	25.93	32.32	46.9	31.9	33.32
Wage employee	62.22	48.79	33.96	38.65	48.84
Contributing family worker	7.96	17.07	17.52	26.99	15.42
Other	2.59	1.09	1.35	1.23	1.58

Framework

Mediation effect with multi-valued treatment



Marriage types and mental health

OLS Regression

	Has Depression		Has Severe Depression	
	Men	Women	Men	Women
Arranged marriage	0.060*	-0.018	0.026	-0.014
	(0.034)	(0.034)	(0.021)	(0.021)
Non-consensual bride kidnapping	0.135***	0.122***	0.104***	0.126***
	(0.042)	(0.039)	(0.030)	(0.031)
Consensual bride kidnapping	0.037	0.120**	0.084**	0.110***

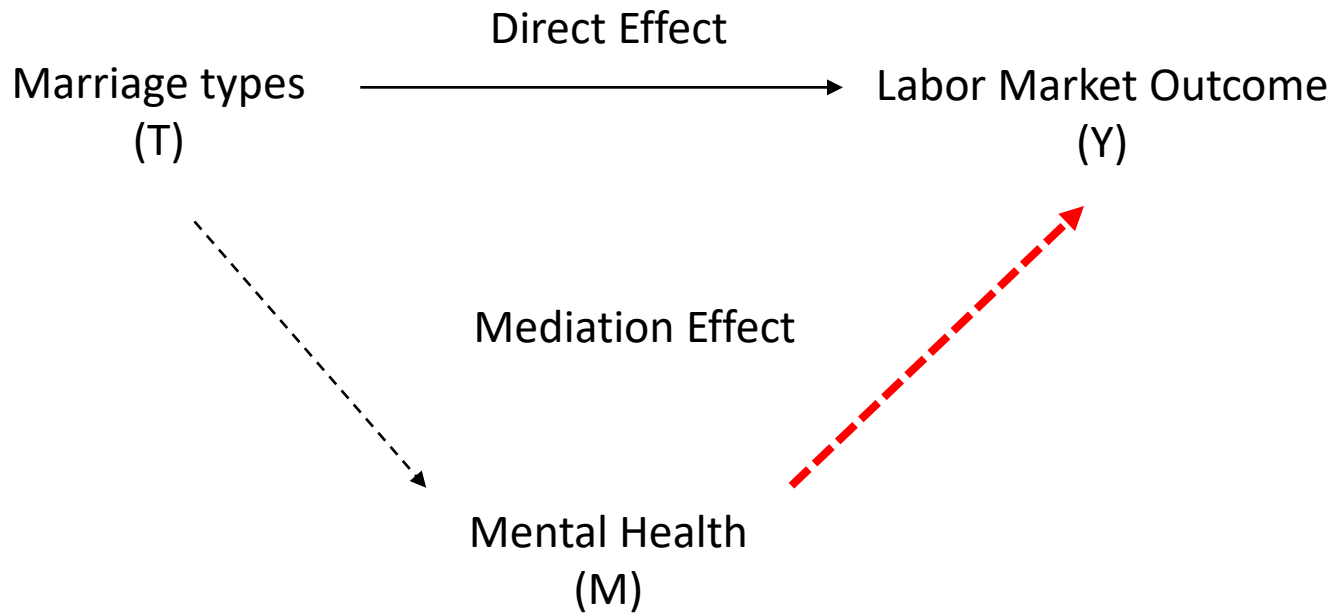
IV Regression

	Has Depression		Has Severe Depression	
	Men	Women	Men	Women
Arranged marriage	0.388**	0.048	0.197**	0.154*
	(0.158)	(0.141)	(0.100)	(0.091)
Non-consensual bride kidnapping	0.777***	0.718***	0.389***	0.540***
	(0.118)	(0.128)	(0.093)	(0.101)
Consensual bride kidnapping	0.488	0.520	0.047	0.311
	(0.397)	(0.370)	(0.337)	(0.332)

*Controls include age, education, spouse education and rural dummy

Framework

Mediation effect with multi-valued treatment

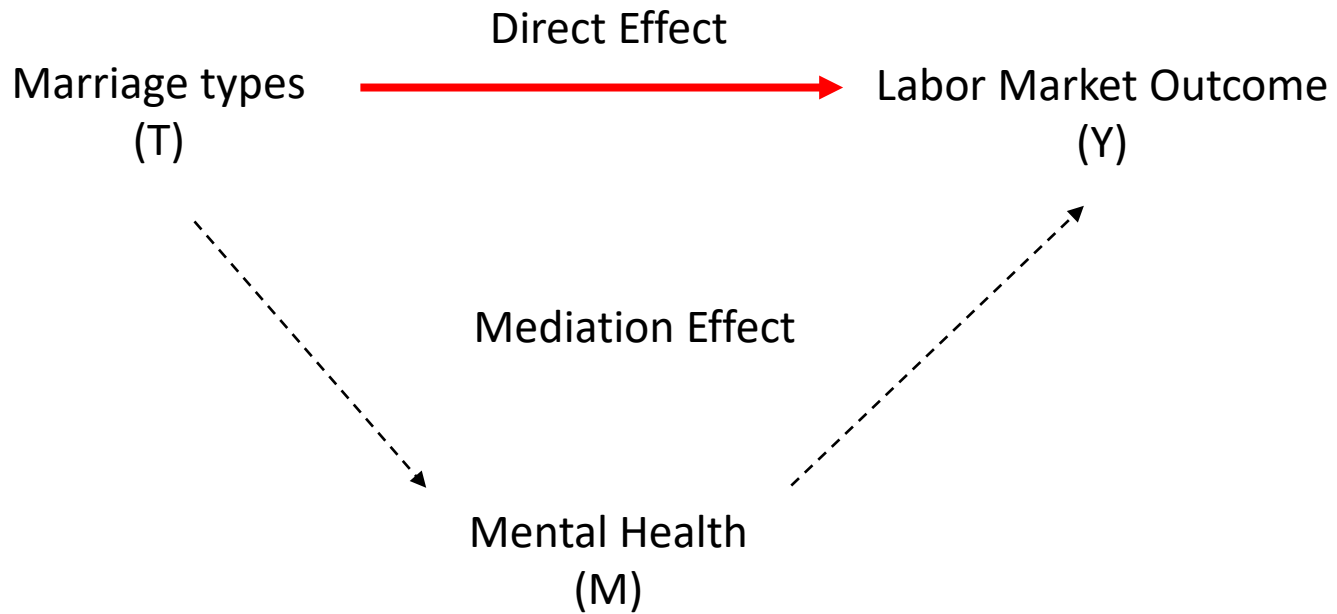


Mental health and probability of being family worker

	(1) Men	(2) Women	(3) Men	(4) Women
Has Depression	0.013 (0.014)	0.073*** (0.021)		
Has Severe Depression			0.016 (0.025)	0.100*** (0.036)
Arranged marriage	0.058 (0.058)	0.136* (0.077)	0.060 (0.055)	0.125* (0.075)
Non-consensual bride kidnapping	-0.004 (0.055)	0.111 (0.083)	0.001 (0.057)	0.109 (0.082)
Consensual bride kidnapping	0.115 (0.160)	-0.244 (0.225)	0.121 (0.162)	-0.237 (0.221)
Education	-0.008 (0.015)	-0.044** (0.019)	-0.007 (0.015)	-0.045** (0.019)
Spouse education	-0.031** (0.014)	-0.007 (0.023)	-0.031** (0.014)	-0.005 (0.023)
Age	-0.009 (0.007)	0.018*** (0.006)	-0.009 (0.007)	0.018*** (0.006)
Age sq.	0.000 (0.000)	-0.000*** (0.000)	0.000 (0.000)	-0.000*** (0.000)
Rural area	0.054*** (0.015)	0.125*** (0.020)	0.051*** (0.014)	0.118*** (0.020)
Constant	0.274** (0.138)	-0.299** (0.133)	0.280** (0.137)	-0.259** (0.128)
Observations	1,113	1,386	1,113	1,386
R-squared	0.032		0.032	

Framework

Mediation effect with multi-valued treatment



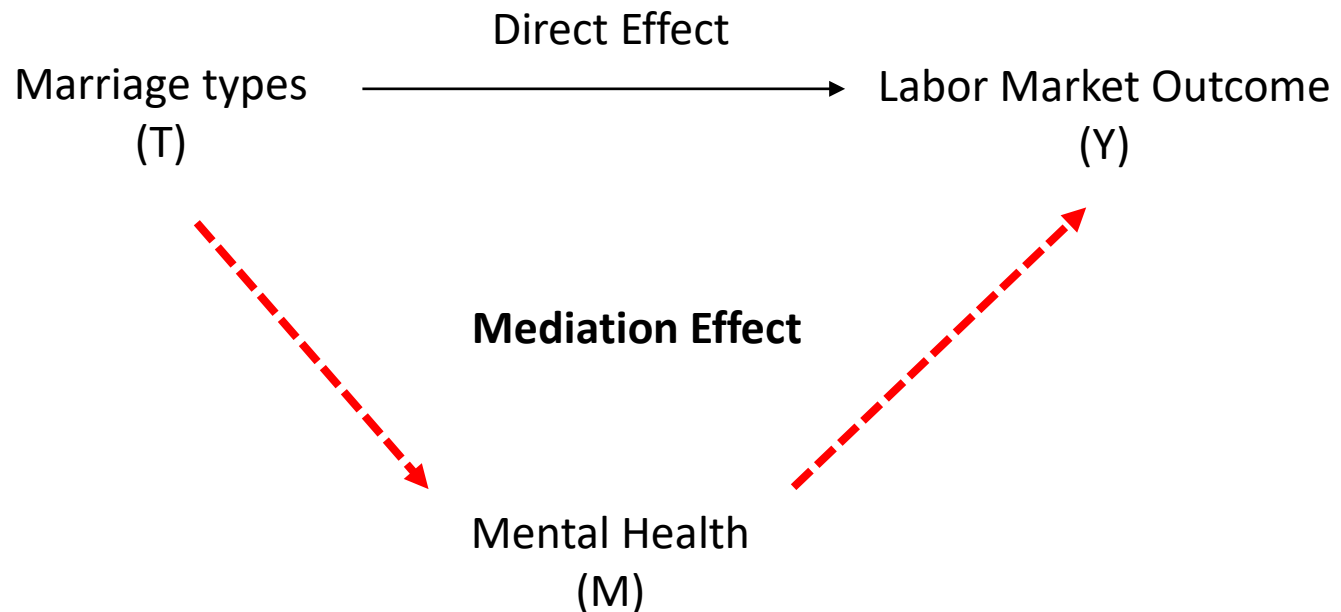
Direct effect: Marriage types and labor market outcome

	OLS		IV	
	Men	Women	Men	Women
Arranged marriage	0.018 (0.015)	0.054*** (0.019)	0.063 (0.057)	0.140* (0.077)
Non-consensual bride kidnapping	-0.015 (0.017)	0.037 (0.024)	0.007 (0.053)	0.163** (0.083)
Consensual bride kidnapping	0.036 (0.027)	0.132*** (0.038)	0.122 (0.161)	-0.206 (0.220)
Education	-0.013 (0.013)	-0.056*** (0.017)	-0.007 (0.015)	-0.041** (0.019)
Spouse education	-0.029*** (0.010)	-0.020 (0.019)	-0.031** (0.014)	-0.008 (0.023)
Age	-0.009 (0.006)	0.018*** (0.006)	-0.009 (0.007)	0.018*** (0.006)
Age sq.	0.000 (0.000)	-0.000*** (0.000)	0.000 (0.000)	-0.000*** (0.000)
Rural area	0.057*** (0.011)	0.116*** (0.015)	0.051*** (0.014)	0.110*** (0.019)
Constant	0.305** (0.124)	-0.183* (0.107)	0.279** (0.137)	-0.266** (0.131)
Observations	1,274	1,397	1,113	1,386
R-squared	0.034	0.063	0.031	

Framework

Mediation effect with multi-valued treatment

- What is the mediation effects?
- What is the mediation effects as a proportion of total effects?



Mediation effects and total causal effects

Men

	Has Depression			Has Severe Depression		
	Arranged	Non-consensual bride kidnapping	Consensual bride kidnapping	Arranged	Non-consensual bride kidnapping	Consensual bride kidnapping
Mediation Effects	0.0052	0.0104	0.0065	0.0031	0.0061	0.0007
	0.0177	0.033	0.0269	0.0058	0.0102	0.0101
As of Total Effects	8.20%	151.60%	5.30%	4.90%	89.40%	0.60%

Women

	Has Depression			Has Severe Depression		
	Arranged	Non-consensual bride kidnapping	Consensual bride kidnapping	Arranged	Non-consensual bride kidnapping	Consensual bride kidnapping
Mediation Effects	0.0035	0.0521	0.0378	0.0154	0.054	0.0311
	0.0115	0.0274	0.035	0.01	0.0162	0.0348
As of Total Effects	2.50%	32.00%	-18.40%	11.00%	33.10%	-15.10%

Extension: marriage types and work types

Women	(1) Employer	(2) Own-account worker	(3) Wage Employee	(4) Contributing family worker
Arranged marriage	1.125 (1.521)	2.134** (1.004)	2.299** (0.977)	2.566** (1.015)
Non-consensual bride kidnapping	-12.419*** (1.195)	1.192 (1.078)	1.195 (1.039)	1.769* (1.067)
Consensual bride kidnapping	-13.634*** (0.924)	-0.666 (0.850)	-0.271 (0.679)	0.834 (0.766)
Education	-1.318 (1.450)	-0.249 (0.672)	0.532 (0.616)	-1.131* (0.666)
Spouse education	-0.723 (2.666)	-0.215 (0.525)	-0.243 (0.468)	-0.785 (0.506)
Age	4.815** (2.102)	0.034 (0.221)	-0.026 (0.204)	-0.221 (0.213)
Age sq.	-0.061** (0.028)	-0.000 (0.003)	0.000 (0.003)	0.003 (0.003)
Rural area	-0.052 (1.188)	1.239** (0.541)	0.486 (0.493)	2.874*** (0.598)
Constant	-91.102** (41.413)	0.443 (5.060)	2.768 (4.810)	7.932 (4.945)
Observations	663	663	663	663

Conclusions

- We show that marriage types affect the labor market outcome of both men and women
 - Women who got married through bride capture are more likely to work as family worker compared with love marriage
- We show that marriage types affects mental health
 - Women who got married through bride capture are more likely to have mild and severe mental health issues
- We show that the mental health channel explains 33% of the total treatment effect of bride capture on women's probability of being a contributing family worker