

# Pigs for Peace: Livestock Microfinance in DR Congo

Emerging Global Leaders Institutes

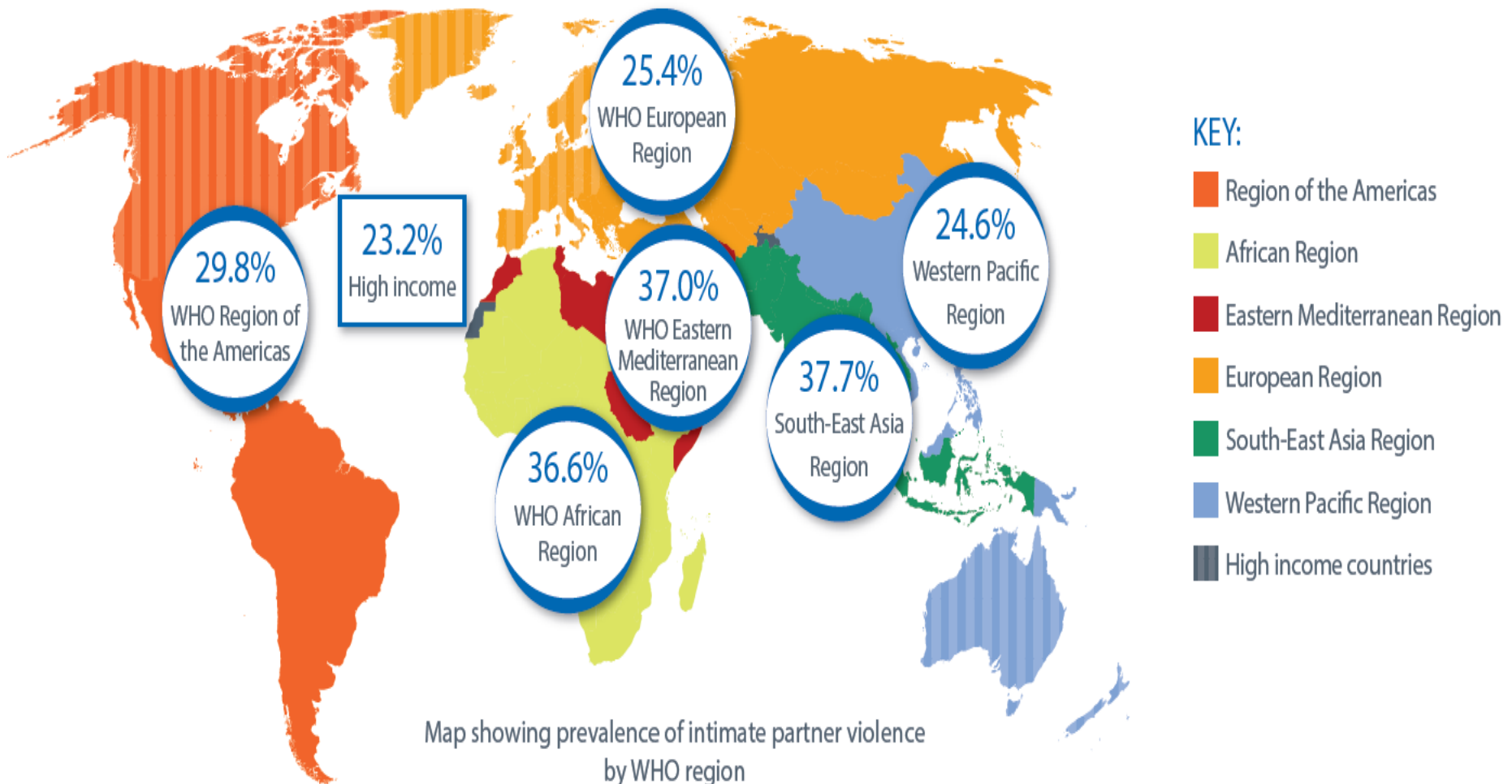
**Nancy Glass, PhD, MPH, RN**

*Professor, Johns Hopkins School of Nursing  
Associate Dean for Research, Johns Hopkins School of Nursing  
Associate Director, Johns Hopkins Center for Global Health*

## PREVALENCE →

# 1 in 3 women

throughout the world will experience physical and/or sexual violence by a partner or sexual violence by a non-partner




# HEALTH IMPACT: Women exposed to intimate partner violence are →


## Mental Health

**TWICE**   
as likely to experience depression

**ALMOST  
TWICE**   
as likely to have alcohol use disorders

## Sexual and Reproductive Health

**16%**   
more likely to have a low  
birth-weight baby

**1.5** **TIMES**   
more likely to acquire HIV and 1.5 times  
more likely to contract syphilis infection,  
chlamydia or gonorrhoea

## Death and Injury

**42%**   
of women who have experienced  
physical or sexual violence at the  
hands of a partner have experienced  
injuries as a result

**38%**   
of all murders of women globally were  
reported as being committed by their  
intimate partners

Can we - as health care providers, advocates, researchers - be a positive influence in women & children's lives who are living with violence?

Violated/abused women/girls are able to safely disclose

Provide essential health and social services

Provide support interventions (first line support, economic empowerment, safety action plans) and referrals

Increased safety and better health and social outcomes for women, children and communities



# **Pigs for Peace (PFP):**

**Livestock Microfinance  
Program for  
Empowerment of  
Vulnerable Rural  
Families**

**Collaboration: PAIDEK  
microfinance and Johns  
Hopkins School of Nursing**

**[nglass1@jhu.edu](mailto:nglass1@jhu.edu)  
[www.pigsforpeace.org](http://www.pigsforpeace.org)**



# Context of Eastern DRC

- Prolonged conflict
- Long-term humanitarian aid
- Extreme poverty (living on less than \$2 day)
- Limited infrastructure, including health and social services
- Looting/stealing of essential tools, and animals on rural farms
- GBV and other human rights violations



# Community Driven Solutions

Rural villagers express a desire:

- Economic stability – productive assets (livestock/animals)
- Programs that engage men and women in economic activities
- Rebuild families and communities after trauma experiences
- Improve family health and future opportunities
- Sustainable programs



***“Stigma is less when you have money to care for your children and family”***



- Subsistence farming and animal husbandry are traditional means to obtain wealth and social status in rural areas
- Livestock act as a household savings account for economic opportunities and crises





- Livestock signify productivity, social status and can influence positive perception of self and family well-being and future
- Caring for livestock is not a full time job; participants can engage in other forms of work to support household

# Pigs for Peace (PFP): Pigs as Productive Asset

- Pigs can be bred, raised and sold by rural women and men
- Consume a wide variety of food found in area
- Do not need much space
- Compost can be used for farming
- Can be bred twice in a year; produce 4 – 14 piglets/birth
- A 2-4 month old piglet can be sold for \$25-\$40





# PFP Microfinance Model



- Establish village led microfinance association
- Participants commit to attend monthly meetings and training, build pigpen, feed and care for pig
- Participants given female pig loan
- Collaboration on male pig for breeding
- On-going mentorship and vet services

- Participant repays loan with 2 piglets when pig gives birth
- Remaining piglets and original pig loan (productive asset) are for the participant
- Repayment piglets are given to new members in the same community



**Does Livestock  
Microfinance (Pigs  
for Peace) improve  
economic and  
health outcomes  
and reduce intimate  
partner violence in  
a post-conflict  
setting?**

“I will care for this pig like  
my child, as it is my future”



# Productive assets are important for economics, health and gender equity

- A recent large-scale evaluation of the Graduation program model in 6 countries (Ethiopia, Peru, Pakistan, Ghana, Honduras, and India) found that a time-limited big push, grant of productive asset with support, led to a sustained increase in consumption and income for participating households in all countries (Banerjee et al., 2015).
- As families have more livestock/animal assets, the impact of traumatic events on mental health decreases\*
- Livestock assets have an effect on mental health beyond other measures of wealth (savings, perceived wealth, durable housing, regular work)\*

*\*Glass et al (2014), Livestock/Animal Assets Buffer the Impact of Conflict-Related Traumatic Events on Mental Health Symptoms for Rural Women. PLoS One*



# PFP Impact Evaluation



- 10 villages of Walungu Territory, South Kivu Province
- Includes adult men and women (16 years and older)
- 60-100 participants per village
  - 30 receive 1<sup>st</sup> pig loan
  - Delayed control groups to receive loan repayment pigs
- Baseline interview with 4 follow-up interviews over 45 months.
- Main study outcomes measured at 18 months post baseline.

# Participant Characteristics

	Control	Intervention	p-value
Participants (n=831)	523	308	
Percent Female	86.0%	81.5%	.081
Age			.218
15-19	1.7%	1.3%	
20-24	13.4%	12.0%	
25-34	27.7%	26.9%	
35-44	23.1%	17.5%	
45-60	27.9%	33.4%	
61+	6.4%	8.8%	
Marital Status			.501
Married	75.0%	72.7%	
Divorced/ Separated	3.3%	4.2%	
Widowed	18.4%	20.1%	
Abandoned	1.7%	0.6%	
Never married	1.5%	1.3%	



# Participant Characteristics

	Control	Intervention	p-value
Schooling			.312
None	64.7%	59.7%	
Did not complete primary	16.6%	15.9%	
Primary completed	16.4%	21.1%	
Secondary completed	2.3%	3.2%	
Mean number of adults living in the home (range)	2.27 (0-10)	2.41 (0-10)	.218
Mean number of children living in the home (range)	3.38 (0-11)	3.53 (0-9)	.530
Have a non-durable roof	58.8%	58.1%	.852
Have non-durable walls	89.5%	88.3%	.407



# Productive Assets

- Surveyed 9 vendors in 5 different village markets in South Kivu province on the market price for a cow, goat, lamb, pig, chicken, rabbit, and guinea pig.
- Computed total livestock asset for each household by multiplying the average market price for an animal by the number of animals owned.
- Used quartiles of productive asset value in analyses
  - Skewed distribution

Livestock/Animal	Value in US dollars
Cow	450
Pig	70
Goat	50
Poultry	10
Rabbit	8
Guinea Pig	1

Quartile	Mean Productive Asset	Range
1	.11	0-2
2	11.85	3-38
3	73.26	39-125
4	599.43	126-9500

# Who/Where Participants Have Loan/Credit

Who	Percent of total sample
Friend/neighbor	36.1%
Hospital/Health Center	6.7%
Relative	4.7%
Shop/store	2.7%
Rotating credit	0.9%
Microcredit	0.5%
NGO	0.3%

Amount owed varied from \$10 to \$800

# Residualized Change Analysis

- Examined intervention and control groups for significant difference in the amount of change from baseline to 18 months, controlling for baseline score
- Analyses accounted for the clustering of participants within villages



# 18-Month Retention

	Intervention	Control
Baseline	308	523
18-months	259	457
% retained	84.1%	87.4%

# Participants in intervention reported increase in productive assets (animals)

	Control		Intervention	
	Baseline	12-months	Baseline	12-month
\$0-\$25	51.7%	55.6%	47.6%	40.8%
\$26 or more	48.3%	44.4%	52.4%	59.2%

The two groups are not significantly different at baseline (p=.246)

At 18 months, the intervention group has significantly more participants with productive assets (livestock/animals) of \$26 or more than the control group (p<.001)

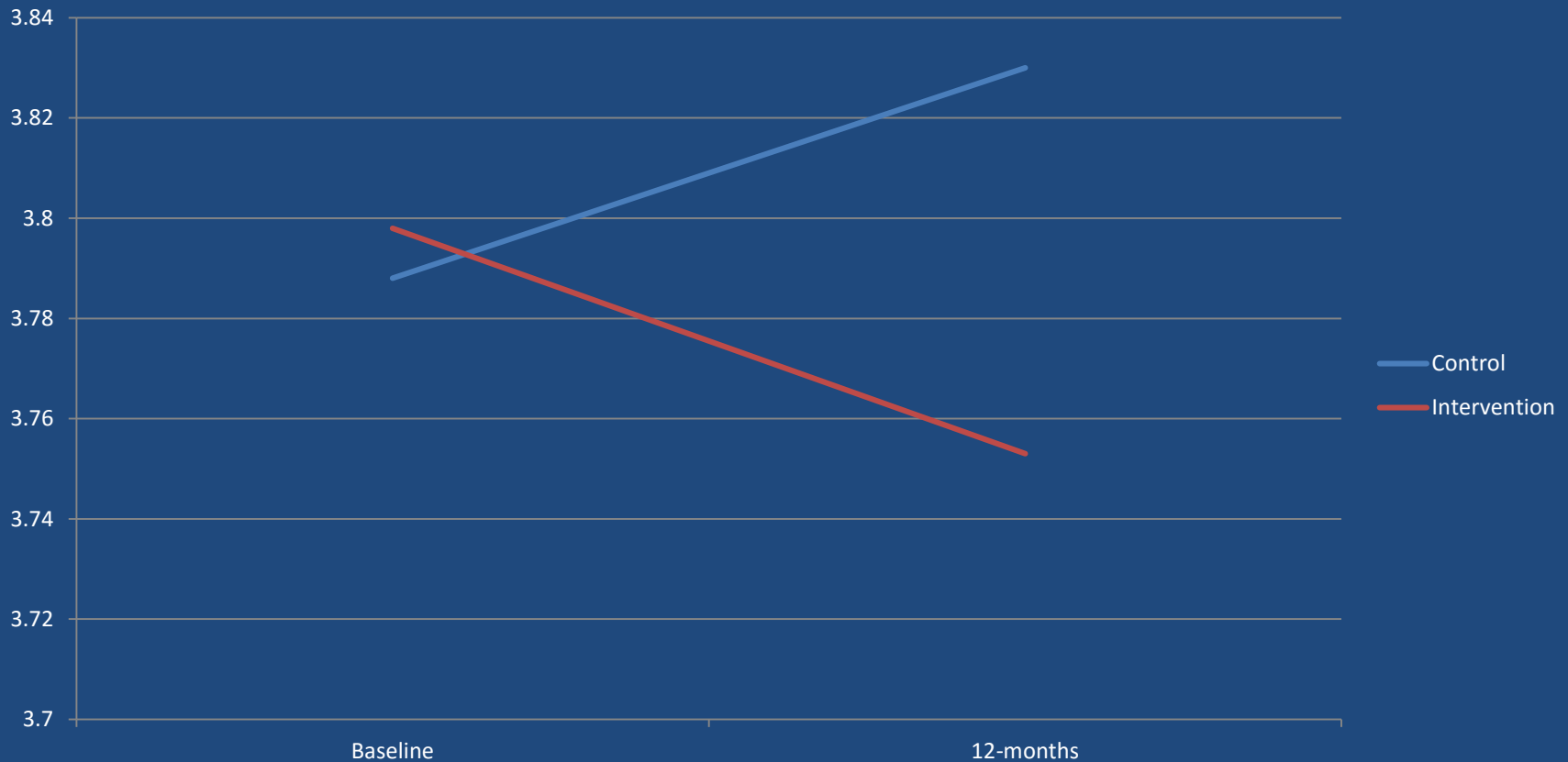
# Participants in intervention report fewer cash and non-cash loans/credit

	Control		Intervention	
	Baseline	18-months	Baseline	18-month
No loans	67.2%	84.5%	61.0%	90.7%
One or more loans	32.8%	15.5%	39.0%	9.3%

The two groups are not significantly different at baseline (p=.073)

At 18 months, the intervention group has significantly fewer participants with loans/credit than the control group (p=.018)

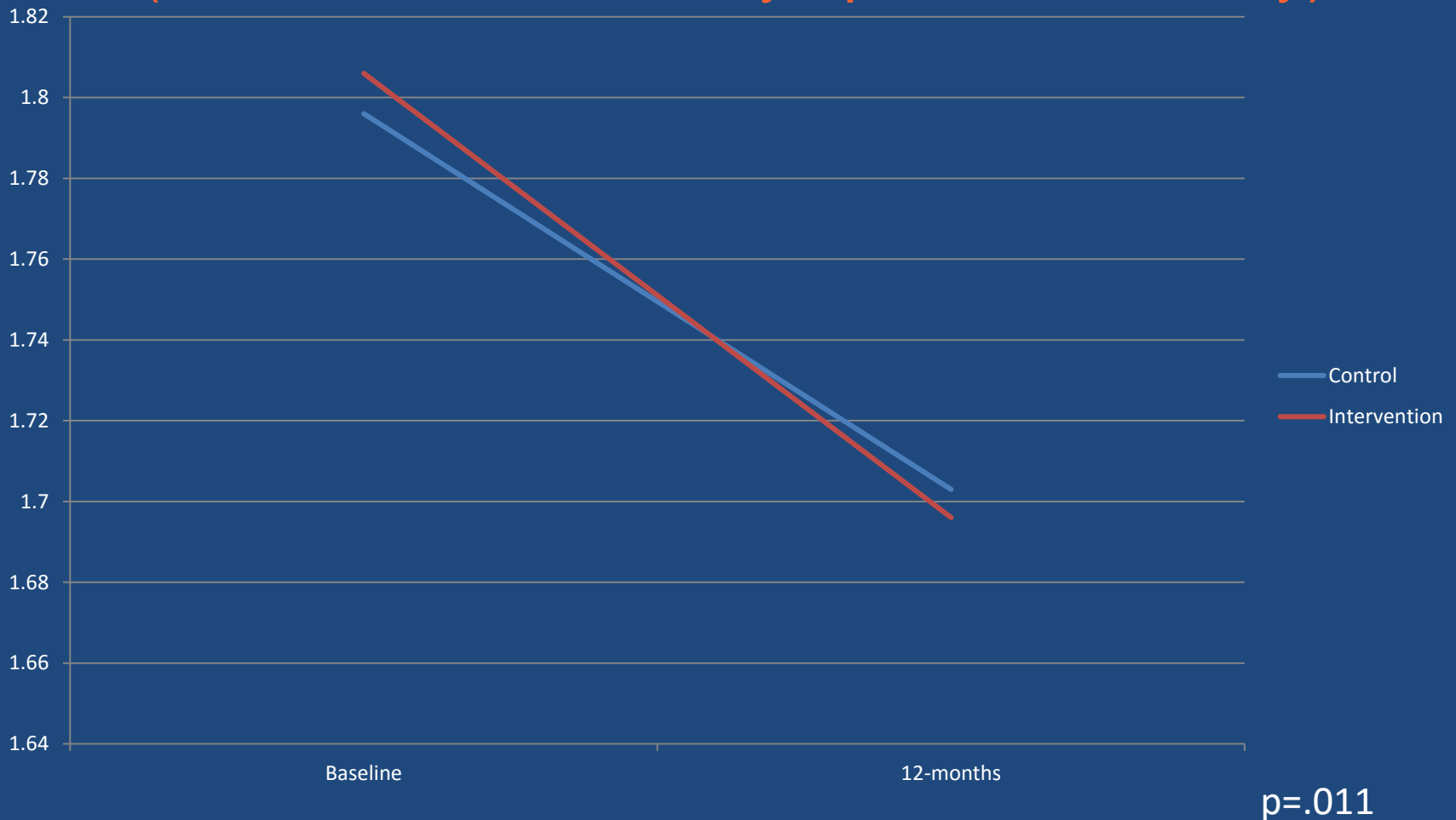
# Participants in intervention (PFP) have improved general health (higher scores poorer health)



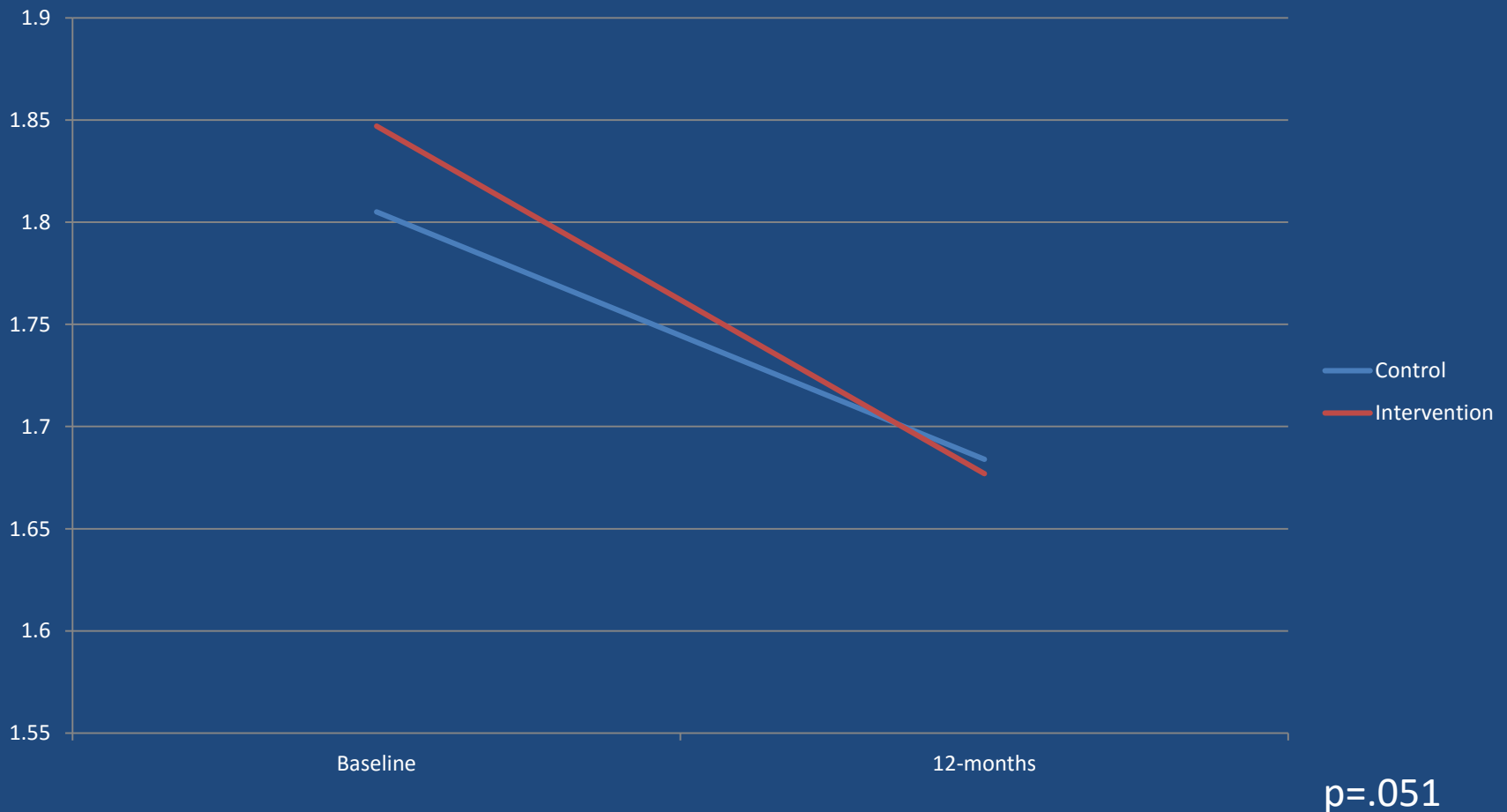
p=.048



# Participants in intervention (PFP) report reduced anxiety (lower scores, fewer symptoms of anxiety)



# Participants in intervention (PFP) report reduced depression (lower scores, fewer/less frequent symptoms of depression)

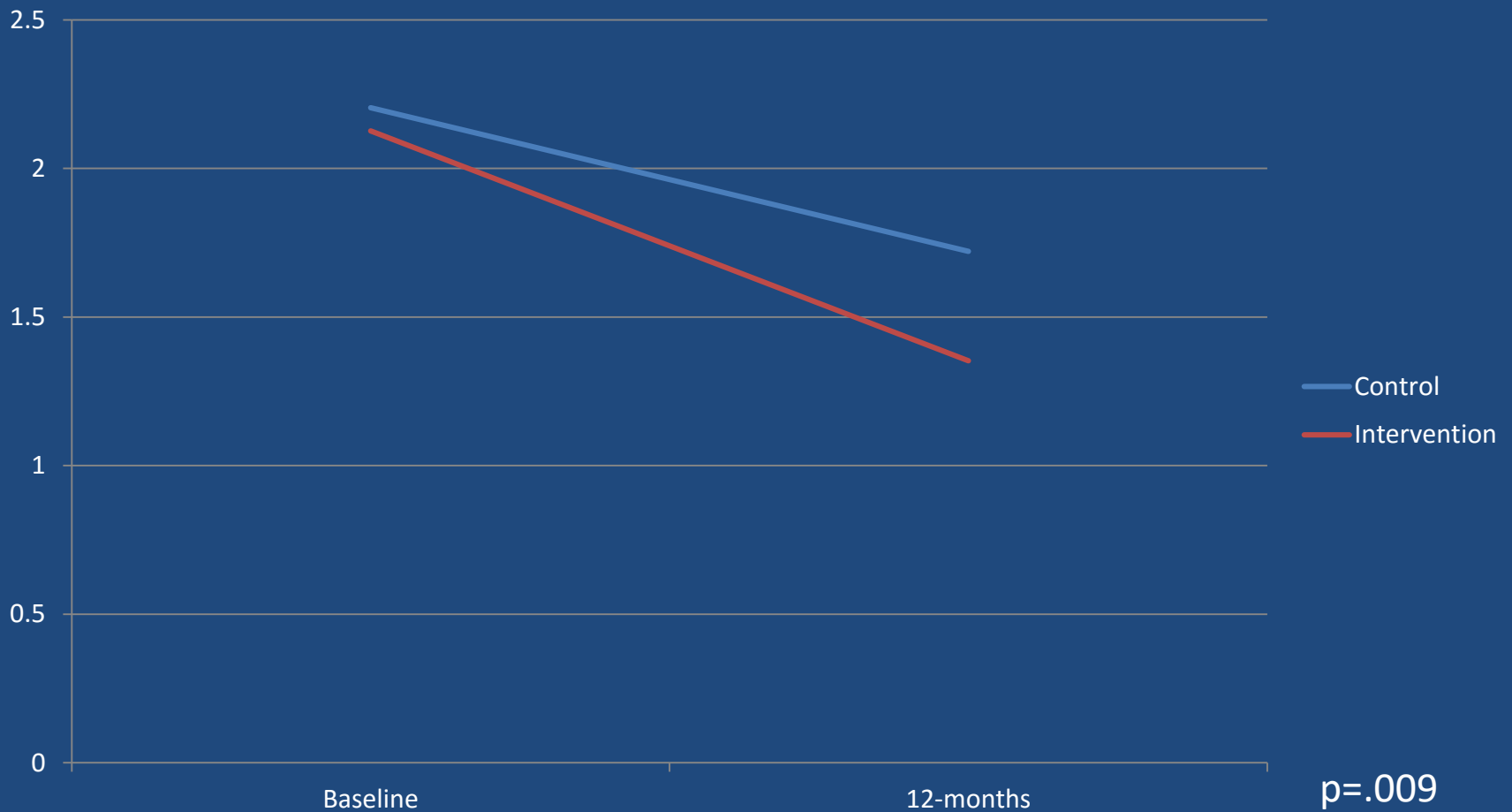


## Fewer participants in intervention (PFP) reported symptoms of PTSD at 18 months

	<b>Baseline</b>	<b>18-months</b>
Control	29.8%	12.9%
Intervention	25.3%	6.6%
p-value	.163	.008

At baseline there is no difference between the control and intervention groups in the percent of participants who reported symptoms consistent with PTSD

# Married/partnered women in intervention (PFP) report less intimate partner violence over 18-months



## *Qualitative Interviews with participants who report IPV*

*“It is a serious problem when a woman is scared of her husband because they can never build a future together. She will always suffer from internal (emotional) injuries and even if she is well fed or clothed, when her husband is mean, nothing can move forward. She is always in bad health. The whole family is affected.”*

*– Female PFP participant*

# Summary of Findings

- At 18 months, intervention group (PFP) was different than control group
  - Increased Productive Assets (animal wealth)
  - Reduced Loans/Credit
  - Improved General Health
  - Reduced Symptoms of Anxiety
  - Reduced Symptoms of PTSD
  - Reduced Intimate Partner Violence (controlling behaviors and psychological abuse)



# Photovoice Project: "RISE UP"



"From the first pregnancy, my pig had 9 piglets. I returned 2 to the project and sold some of the piglets. I used the money to send my children to school and some money I saved. From the second pig pregnancy, I sold some of the piglets to buy my land and saved some of the money, too".

***Now I am someone respected in the village. I am in good health. I am a "big" person. I have matured, life has evolved for me and my family.***

***When given something, take care and work hard. You will be respected like me. -MB***

# Implications



- Pigs for Peace livestock microfinance (productive assets) provides “push” to improve health, reduce IPV, and increase economic stability
- Sustainable development goals (SDGs): reduce poverty, quality education, health and well-being, gender equity, partnerships to achieve goals
  - Pigs for Peace brings vulnerable families together to create a sustainable model that can be combined with other health, peace building, education, equity and livelihood initiatives



# Implications



- What about children? ***Rabbits for Resilience (RFR)***, animal microfinance with young adolescents, 10-15 year olds (2013-2017)
  - Impact of RFR microfinance on youth health, education, family/social relationships, coping skills, and hope/plans for the future
  - Comparative effectiveness - households with adults (PFP)/youth (RFR) microfinance vs. households with adults microfinance (PFP) only, vs. households with youth microfinance (RFR) only

# Adaptation and Scale-Up

- Regional Scale-up (700 families on the waitlist) – collaboration to adapt in diverse territories
- Additional impact on gender equity – add social norms (primary/secondary violence/alcohol prevention) with PFP/RFR microfinance
- Additional impact on trauma/mental health – add peer counseling (CBT) with high risk women/men and youth with PFP/RFR microfinance
- Additional impact on economic stability/growth – cooperative/mentored butcher shop as well as collaboration with traditional microfinance (savings/loans)