



SPLASH/Zambia: School Outcomes Study Major Preliminary Results

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- Context
- Indicators tracked
- Methodology
- Findings for indicators tracked
- Gender analysis
- Confounder analysis
- Take away points
- Self criticism



SPLASH = Schools Promoting Learning Achievement through Sanitation and Hygiene

- 4-year USAID/Zambia-funded WinS project (2011-2015)
- To sustainably improve access to WASH in primary schools to improve learning outcomes
- Implemented through the MOE by FHI360 and CARE

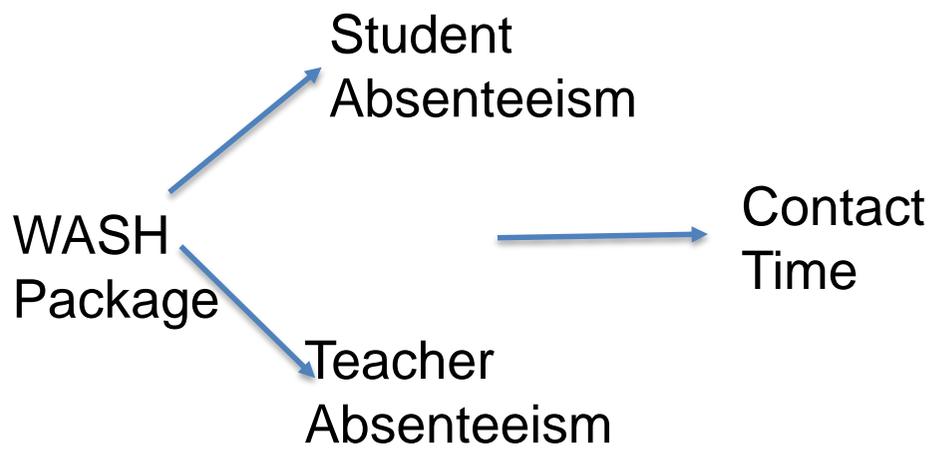
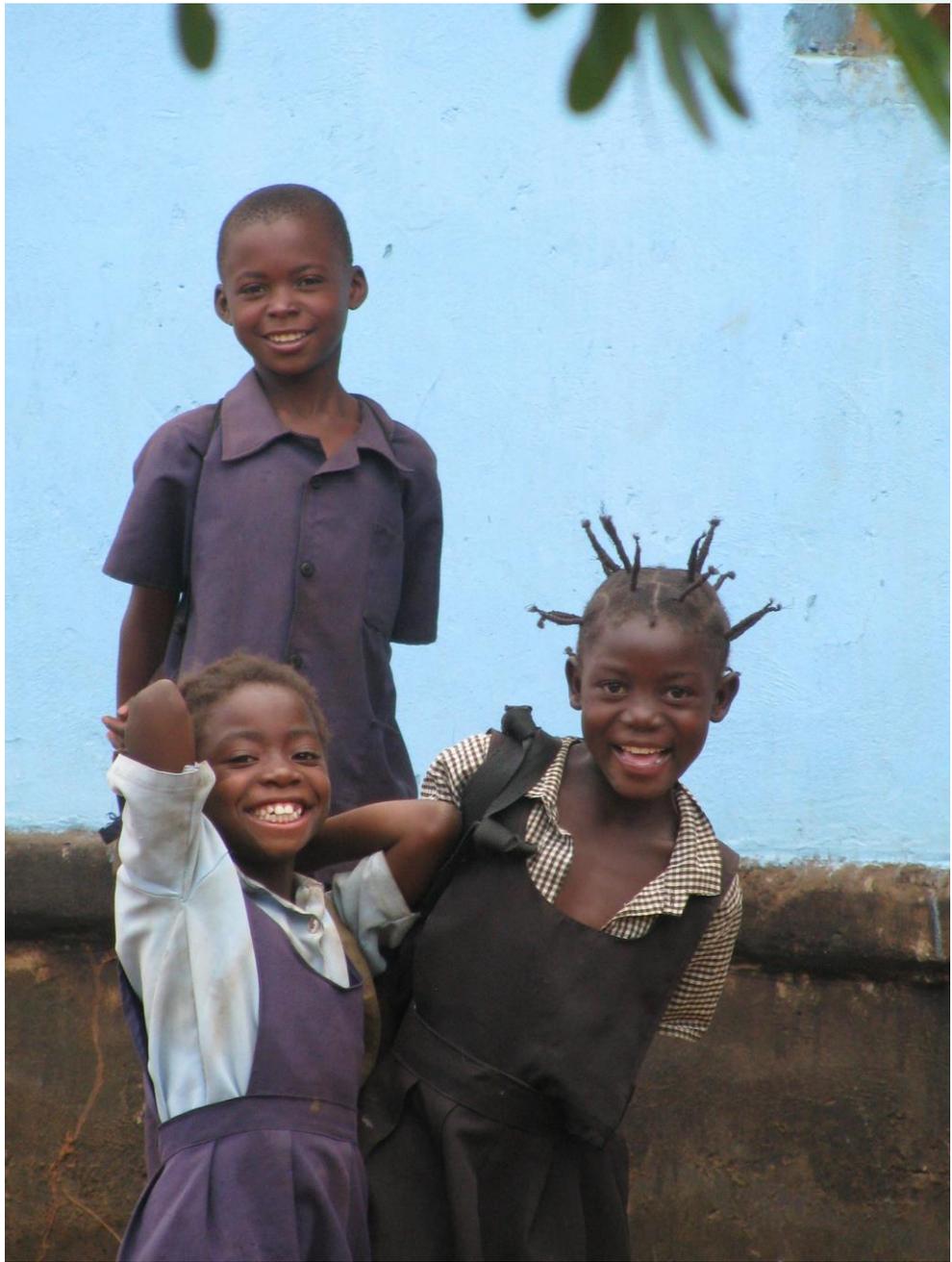




- 4 districts
- 410 primary schools (60% of total)

Methodology

- Repeated measures cluster design, school as unit of analysis
- 62 schools/study group, odd grades
- Random selection from two provinces matched on contextual variables (culture, economic activities, school feeding program)
- Inclusion of possible confounders (trained teachers, school expansion, school textbooks)
- Data collected from 9/2014 through 7/2015
- Instruments for: principals, tracking attendance, interviewing parents to understand reasons for absence
- Repeated measures analysis of variance, linear regression

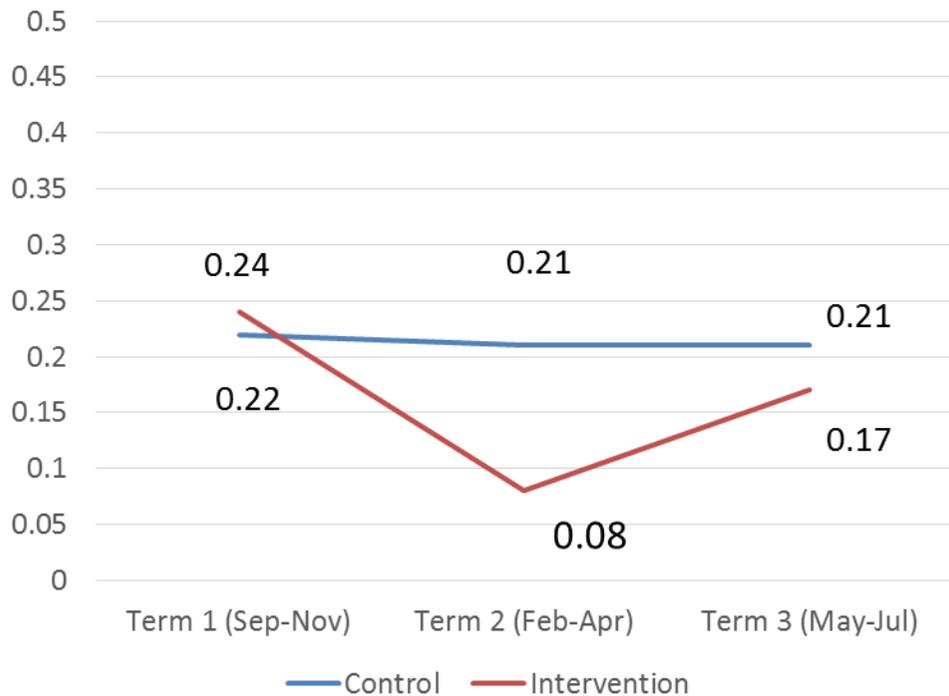


- Absenteeism
 - Student
 - Roll call
 - Absent at least once in the two weeks prior to school visit (2-week recall)
 - Teacher
- Teacher-student contact time



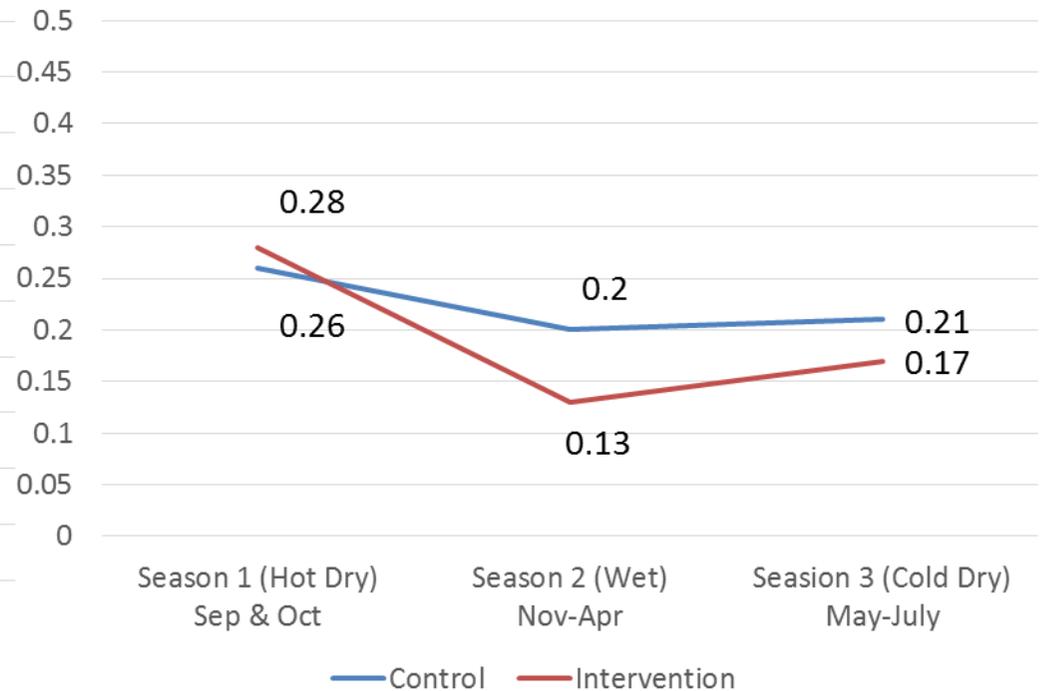
Roll Call Student Absenteeism

Roll Call Student Absenteeism
By Term



Factor	Test	p
Study Group	F = 18.3	p = .00
Time	Pillai's = .84 Wilks' Lambda = .16	p = .00 P = .00
Interaction	Pillai's = .18 Wilks' Lambda = .16	p = .00 p = .00

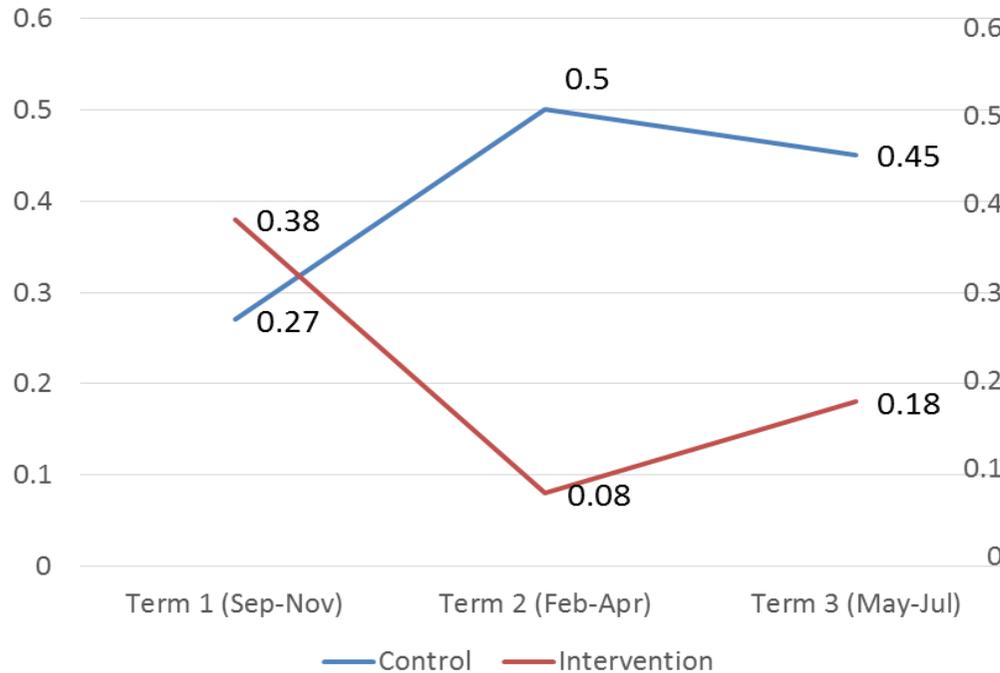
Roll Call Student Absenteeism
by Season



Factor	Test	p
Study Group	F = 3.53	p = .06 NS
Time	Pillai's = .29 Wilks' Lambda = .71	p = .00 p = .00
Interaction	Pillai's = .07 Wilks' Lambda = .92	p = .01 p = .01

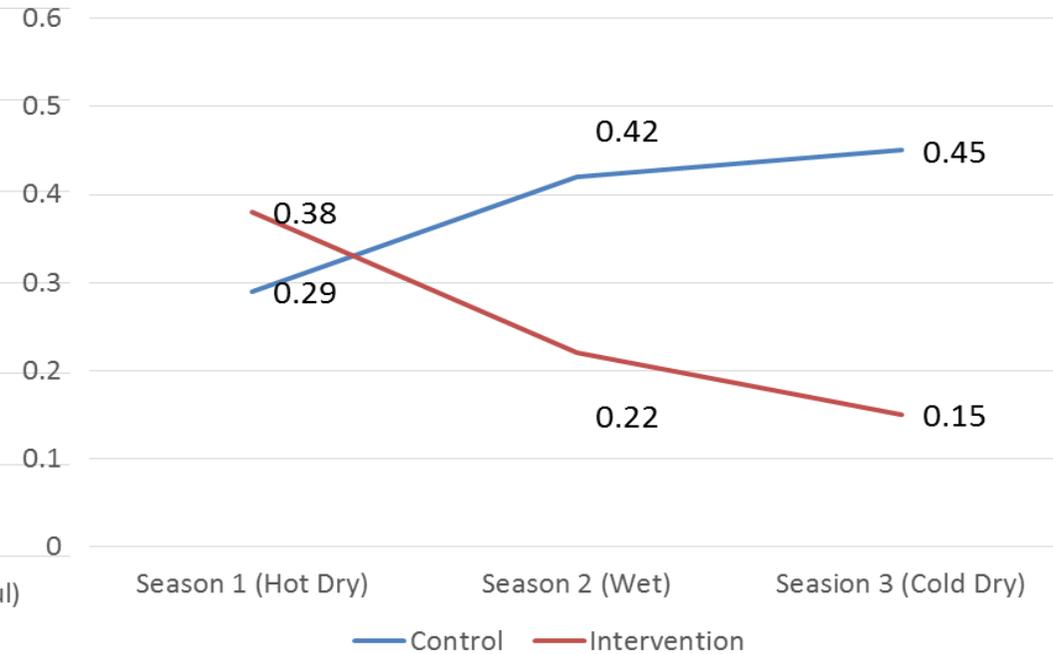
2-week Student Absenteeism

2-Week Student Absenteeism
By Term



Factor	Test	P
Study Group	F = 89.7	p = .00
Time	Pillai's = .03 Wilks' Lambda = .97	p = .19 NS p = .19 NS
Interaction	Pillai's = .19 Wilks' Lambda = .44	P = .00 P = .00

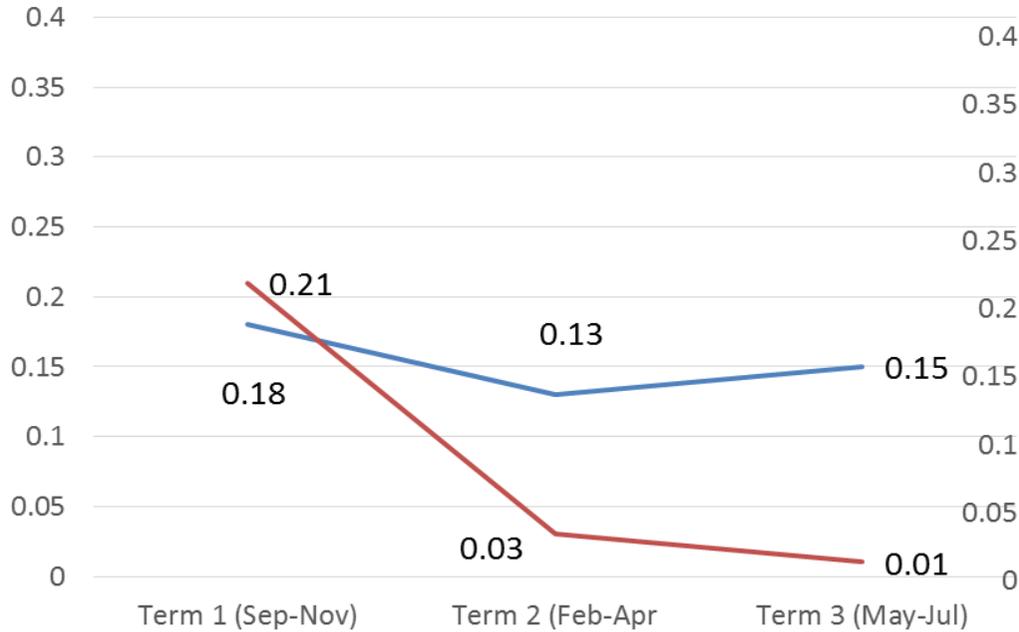
2-Week Student Absenteeism
by Season



Factor	Test	P
Study Group	F = 37.6	p = .00
Time	Pillai's = .03 Wilks' Lambda = .97	p = .16 P = .16
Interaction	Pillai's = .43 Wilks' Lambda = .57	p = .00 p = .00

Major Findings, Teacher Absenteeism

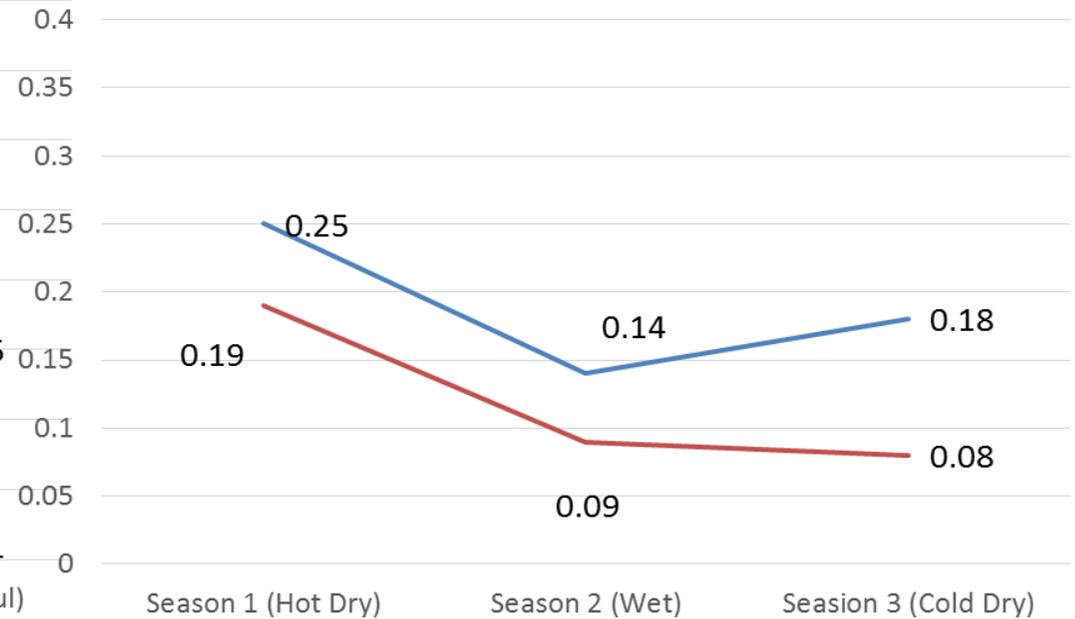
Teacher Absenteeism
By Term



— Control — Intervention

Factor	Test	p
Study Group	F = 10.8	p = .00
Time	Pillai's = .18 Wilks' Lambda = .82	p = .00 p = .00
Interaction	Pillai's = .10 Wilks' Lambda = .90	p = .00 P = .00

Teacher Absenteeism
by Season

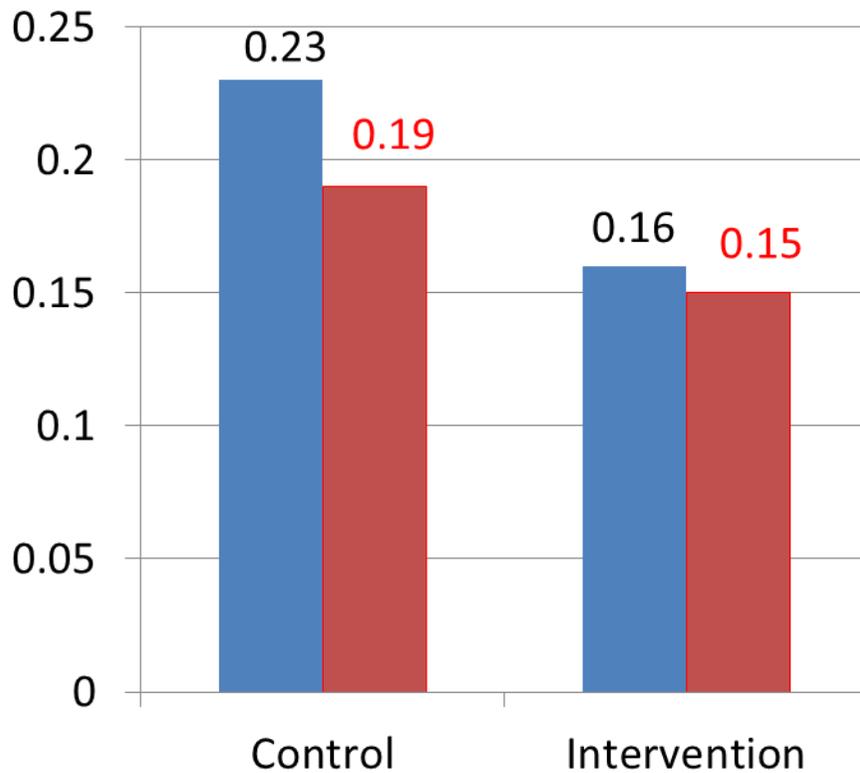


— Control — Intervention

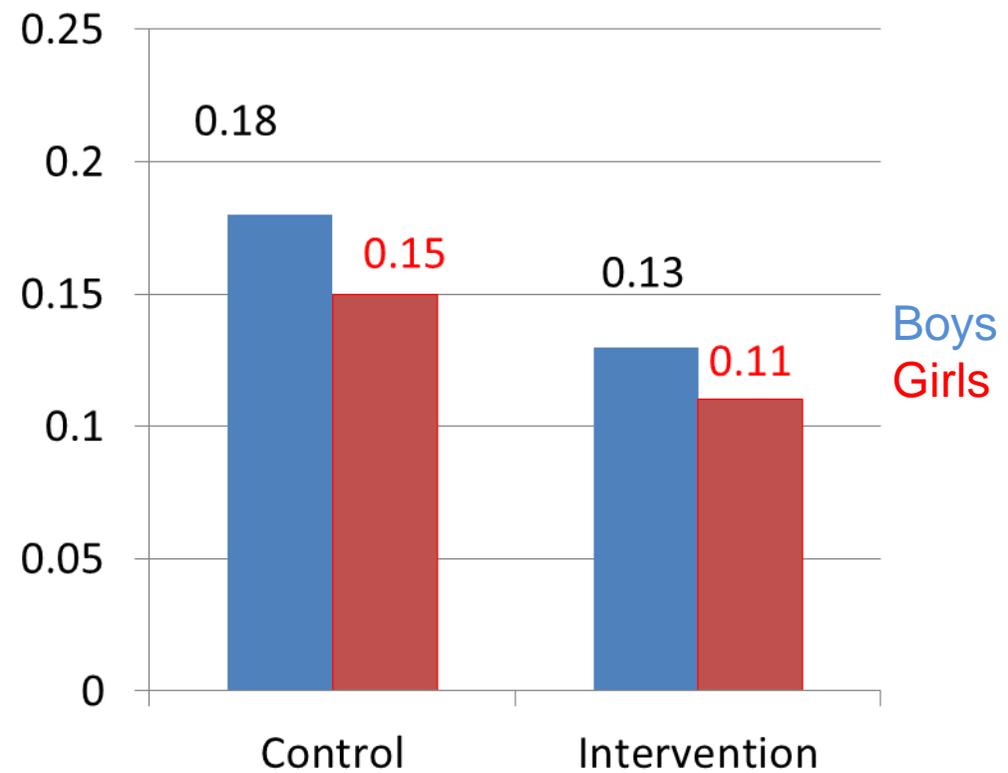
Factor	Test	p
Study Group	F = 13.27	p = .00
Time	Pillai's = .21 Wilks' Lambda = .79	p = .00 p = .00
Interaction	Pillai's = .07 Wilks' Lambda = .79	p = .01 p = .01

Major Findings, Gender Differences

3rd Term, Roll Call All Grades



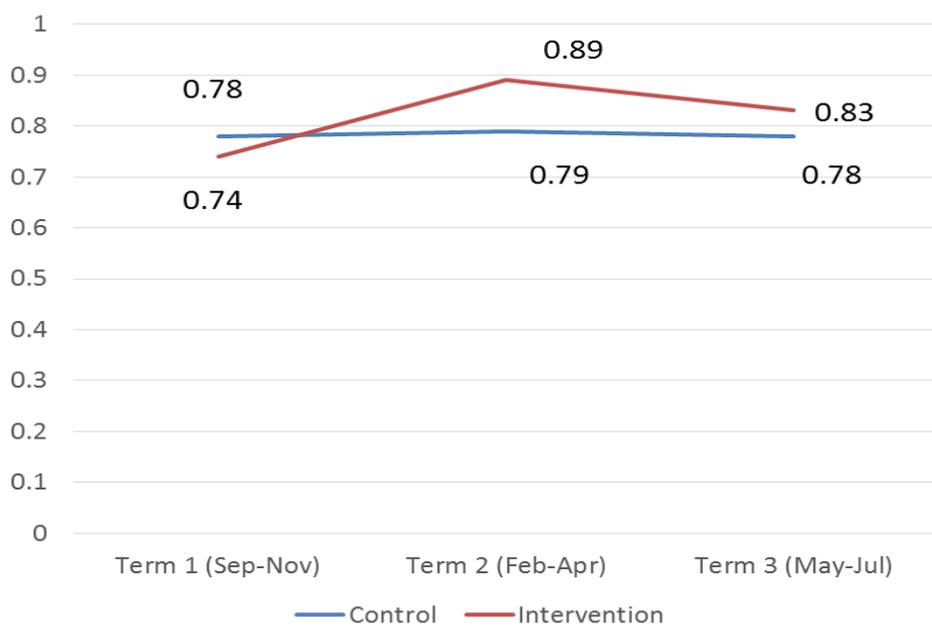
3rd Term, Roll 7th and 9th Grades



Differences between boys and girls across study groups not statistically significant

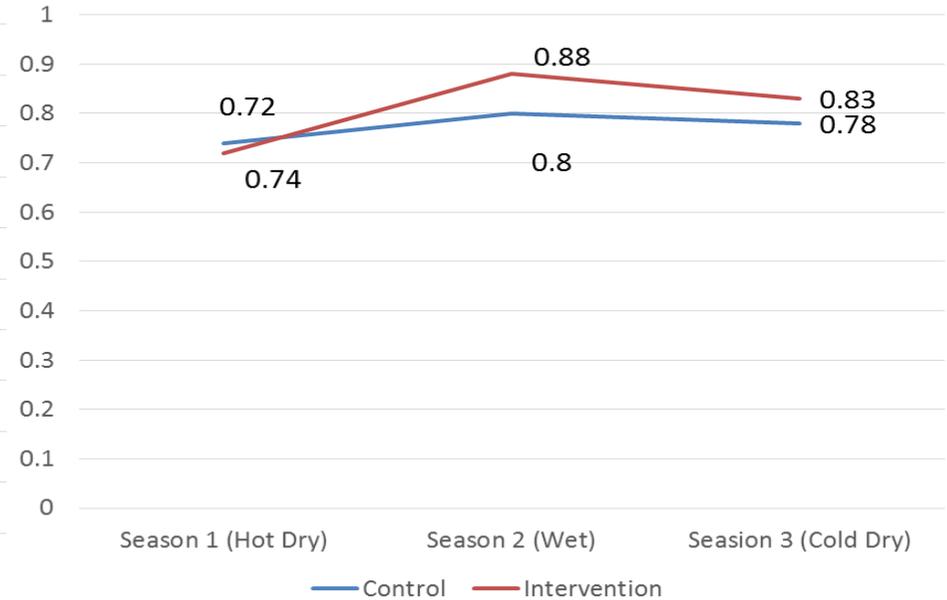
Major Findings, Student Teacher Contact Time

Student-Teacher Contact Time by Term



Factor	Test	p
Study Group	F = 5.3	p = .02
Time	Pillai's = .22 Wilks' Lambda = .78	p = .00 P = .00
Interaction	Pillai's = .21 Wilks' Lambda = .79	p = .00 p = .00

Student-Teacher Time by Season



Factor	Test	P
Study Group	F = 4.42	p = .00
Time	Pillai's = .39 Wilks' Lambda = .62	p = .00 p = .00
Interaction	Pillai's = .10 Wilks' Lambda = .57	p = .00 P = .00

Major Findings, Confounders

Confounders explored included:

- Presence of a school feeding program
- Presence of school improvement project other than WASH
- School type (public vs community schools)
- Multi-grade teaching
- School size (dichotomized into small and large)
- Location (urban and rural)

Major Findings of Linear Regression, Confounders

Predictors in Model R Square =.14, F Ratio 2.6 (p=.04)	Unstandardized Beta Weights
WASH Package (Intervention)	-7.96
Presence of school feeding program	-2.36
Presence of school improvement initiatives	1.31
Type of school (gov't-community)	2.86



- **GOOD NEWS!**
- Roll call and 2 week absenteeism are significantly different between intervention and control groups in expected direction in two terms/seasons
- Teacher absenteeism and contact time in the expected directions in all seasons, and in two of three schools terms
- Boys are girls equally influenced, including upper grades
- Weight of intervention higher than other potential confounders such as school feeding program and non-WASH school improvement initiatives
- Importance of long term tracking

Limitations and Next Steps

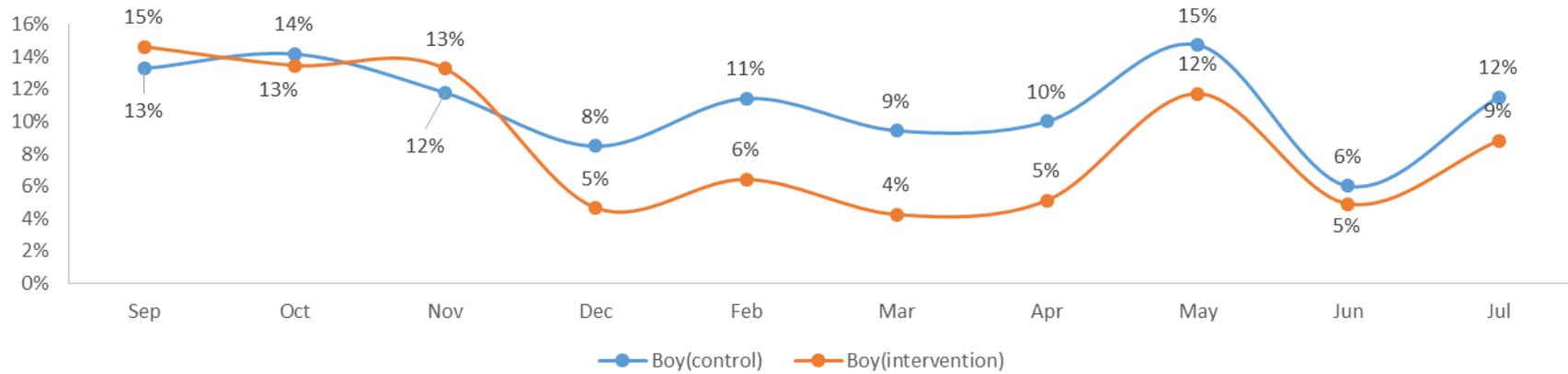
- Not a RCT
- Importance of WASH package elements not teased out
- Value imputation
- Enrolment?
- Official attendance registers?
- Reasons for teacher absenteeism?
- Reasons for student absenteeism pending



Thank you!
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Major Descriptive Findings, Gender Differences

De Facto Student Absenteeism Rates for Boys
by Month and Study Group



De Facto Student Absenteeism Rates for Girls
by Month and Study Group

