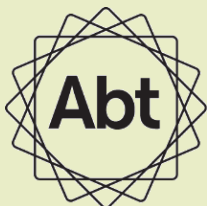# How Evidence-Based Medicine Affects Private Sector Doctors: A Randomized Experiment in Jordan

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Making Impact Evaluation Matter: Better Evidence for Effective Policies and Programmes

September 4, 2014

Outline

- Background
- Research Questions/Theory of Change
- Methods
- Results
- Discussion

Background

Health Care Provider Misconceptions and Bias Limit Access to Family Planning

- Tanzania (Spiezer et al., 2000), Ghana (Stanback and Twum-Baah, 2001), Bangladesh (Ugaz et al., 2012)

- Jordan is no exception
  - Use of modern family planning has remained stagnant over the past 10 years (42%)
  - High use of traditional family planning methods (19%)
  - Consumer and provider misconceptions and biases are a barrier (Bitar and Shahrouri 2008; Bagaeen et al. 2000; Abdelnour 2002; Halassa 2008)

SHOPS Jordan Focuses on Reducing Private Provider Misconceptions and Biases

- SHOPS Jordan focuses on the private sector
  - Serves 56 percent of contraceptive users
  - More female doctors in the private sector than the public sector

- USAID and SHOPS Jordan wanted to reduce private provider misconceptions and biases toward a wide variety of contraceptives

- SHOPS Jordan using Evidence-Based Medicine (EBM) to deal with this problem

Evidence-Based Medicine (EBM) as an Approach to Change Provider Behavior

- Encourages providers to use <u>scientific evidence</u> along with patient values and clinical experience in making clinical decisions

- Disseminate evidence through professional courses, workshops, and educational outreach visits

- EBM particularly appropriate method for private doctors

Existing Evidence on EBM

- Evidence from experimental evaluations of EBM with other health issues in high income countries is mixed (Dietrich et al., 1992; Katz et al., 200; Feldman et al., 2005; Murtagh et al., 2005, McDonald et al., 2005)

- No known rigorous impact evaluations of EBM with family planning in low or middle income countries

- Evaluation of EBM Combined Oral Contraception (COC) with a pre-post study design conducted by SHOPS showed promising results

- SHOPS wanted to conduct an impact evaluation of EBM with a stronger study design and with a more challenging method – DMPA, a three month hormonal contraceptive

Research Questions/ Theory of Change

Research Questions

- What is the impact of an EBM intervention in Jordan aimed to dispel private doctors' misconceptions and biases related to Depot Medroxyprogesterone Acetate (DMPA), a 3-month hormonal injectable contraceptive on:

  - **Knowledge** of DMPA and its side effects?

  - **Attitudes** toward and **confidence** in administering DMPA?

  - **Reported clinical practices** such as discussion and prescription of DMPA?

EBM Theory of Change: Reducing Misconceptions and Changing Practices

EBM: provide credible information about DMPA based on scientific facts

⬇

Improve knowledge of DMPA among providers

⬇

Reduce negative attitudes toward and improve confidence in administering DMPA

⬇

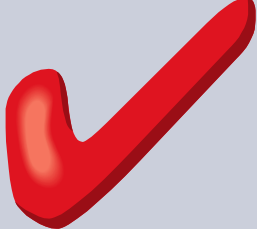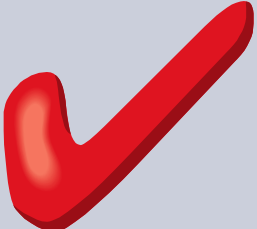Change professional practice related to DMPA

Methods

Study Design and Data Collection

- Sample: 267 private doctors in two urban areas of Jordan: Amman and Zarqa
- Random assignment into treatment (135) and control (132), stratified by area and sex of provider
- Baseline and endline surveys
- Overall survey response rates: 73% (baseline) and 85% (endline)

Dec 2011
Baseline survey

Jan 2013
Endline survey

Jan 2012
**DMPA EBM
intervention
begins**

June 2012
**DMPA EBM
intervention
ends**

EBM DMPA Intervention

Intervention	Treatment Group	Control Group
Invitation to a **roundtable seminar** discussing research evidence on DMPA	✔	
Participation in **two educational visits on DMPA** to reinforce seminar messages	✔	
Two repeat educational visits on **Combined Oral Contraceptives (COC)** to reinforce prior seminar messages		✔

Outcome measures and estimation strategy

- Main outcome measures:
  1. Knowledge Score
  2. Attitude Score
  3. Confidence Score
  4. Reported Practice Score

- All scores standardized to control group mean

- Intent to treat (ITT) estimates using OLS:

$$Y_i = \alpha_1 + \beta_1 T_i + \beta_2 X_i + \varepsilon_{1_i}$$

Sample Characteristics

- Treatment and control groups similar
- More than two thirds are female
- Experienced group: 24 years of clinical experience; 17 years of FP experience
- Some (11%) have dual practice (also work in the public sector)

Results

# Weak Compliance to EBM Intervention within the Treatment Group

	Treatment N=135	Control N=132
Attended EBM DMPA seminar	0.452	0.015
Received at least one educational visit on DMPA	0.852	0.000
Received both educational visits on DMPA	0.763	0.000
Attended seminar AND received both educational visits on DMPA	0.385	0.000

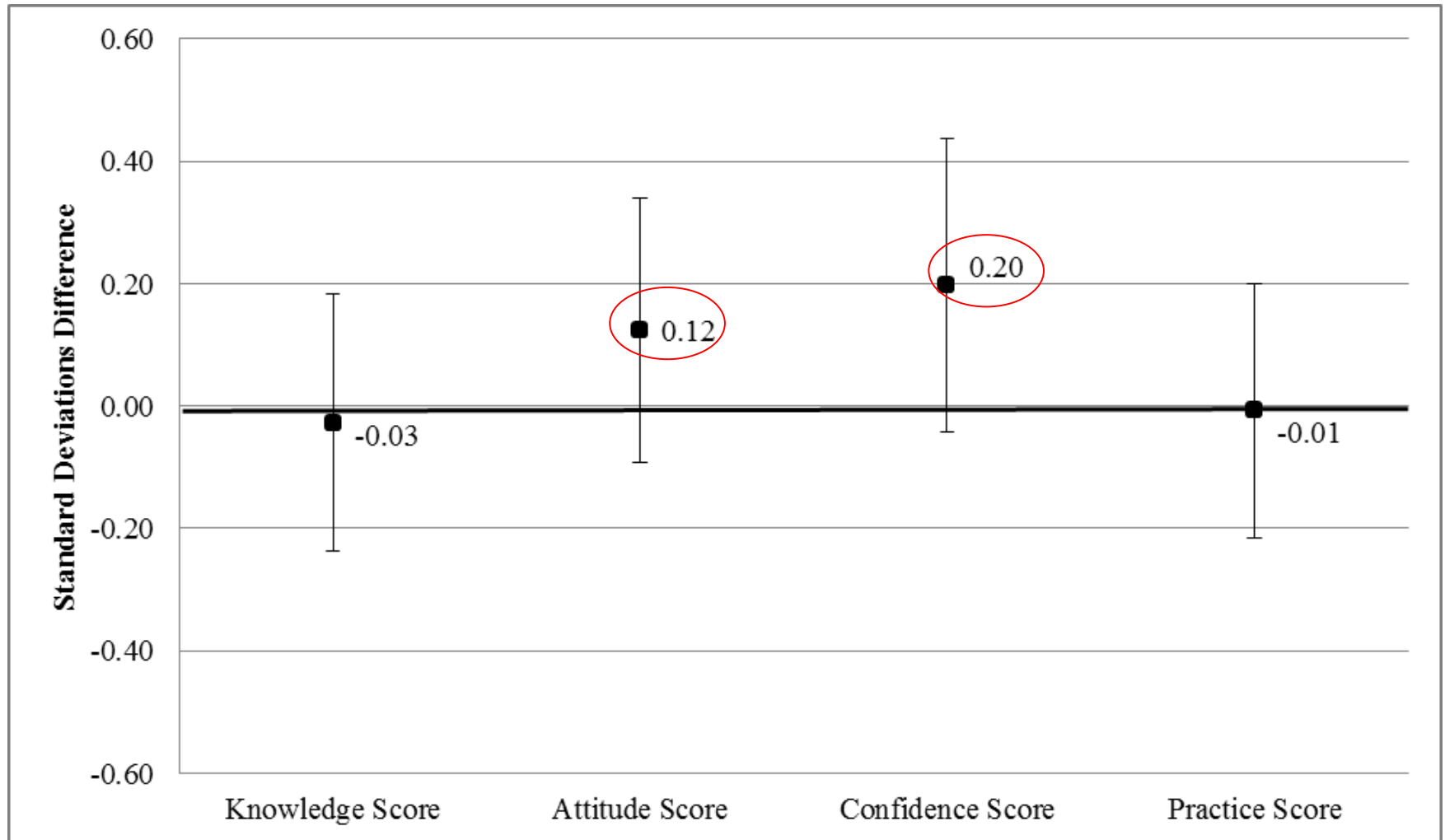# Impact of EBM Intervention on Provider Outcomes
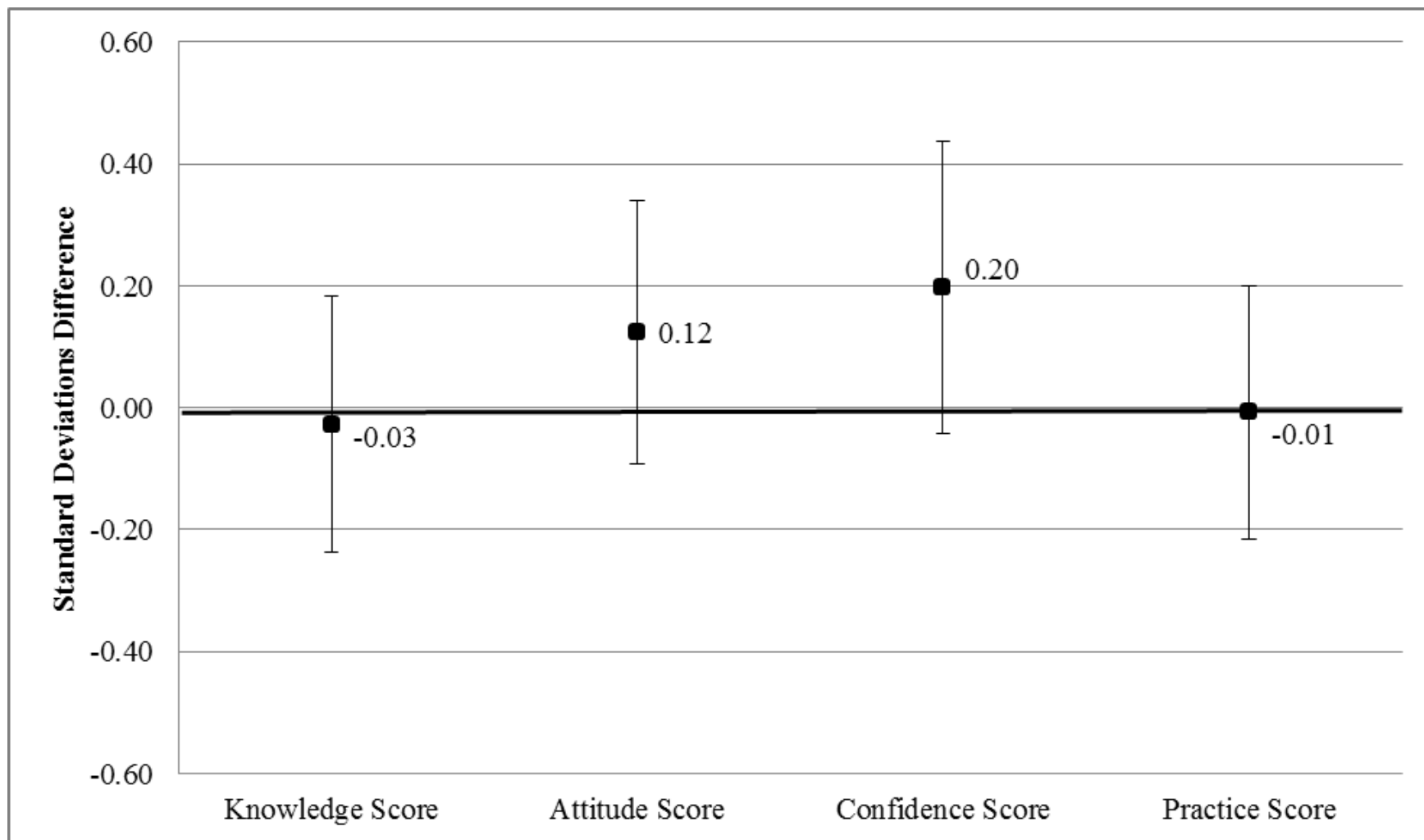
Lines represent 90% confidence intervals

Failure to Detect Impact on Knowledge and Practice
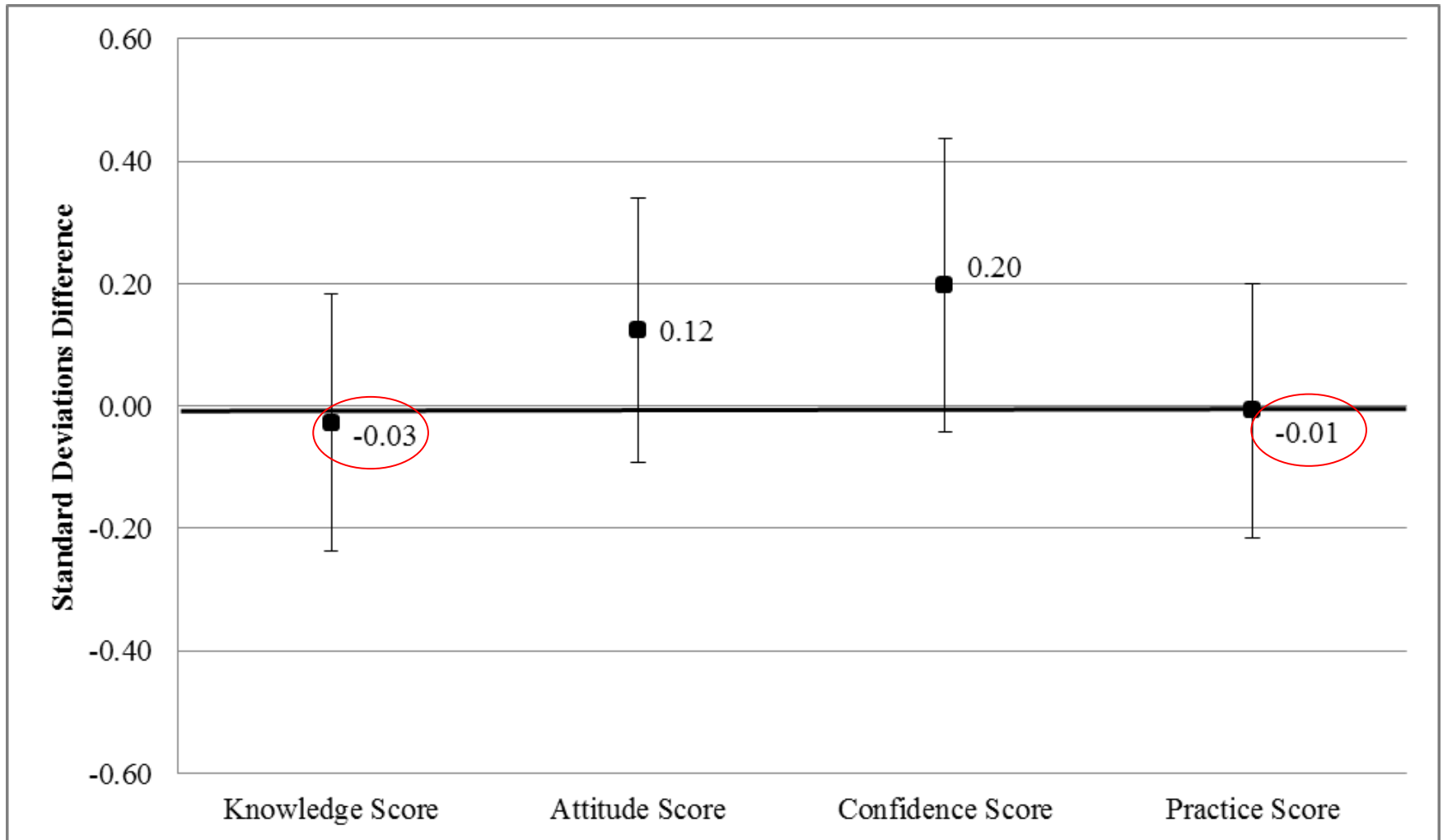
Lines represent 90% confidence intervals

Suggestive Evidence Related to Attitudes and Confidence

Discussion

Why No Impact?

- Deep-seated provider bias against DMPA may have reduced seminar attendance

- Weak intensity of intervention
  - Are 2-hr lectures + 15-min visits enough?

- Significant consumer bias regarding DMPA
  - Concerns with side effects

Study Limitations

- Self-reported measures

- Small sample size

Discussion

- Program staff disappointed with results – high level of enthusiasm for EBM program

- Was it the right decision to rigorously evaluate EBM in the context of DMPA?

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Substantial Bias Against Hormonal Methods in Jordan

- Among consumers…
  - Fears of side effects and other health concerns such as cancer and weight gain
  - Loss of fertility major concern

- But also among providers…
  - Need to "check for fertility"
  - Misconceptions related to side effects

EBM in Jordan

- The Jordan Evidence-Based Medicine/Reproductive Health (JEBMRH) Group
  - EBM 'champions'
  - Conduct the roundtable seminars for physicians
  - 12 active members

- SHOPS trained JEBMRH on the development of Critically Appraised Topics (CAT)
  - Nearly 90 CATs on pills, injectable contraceptives, and IUDs developed to date

Treatment and Control Groups are Similar

|	Treatment	Control	Diff	[S.E.]
Female [1]	0.68	0.69	-0.01	[0.06]
Average years of clinical experience	24.60	24.80	-0.20	[1.07]
Average years of clinical experience in FP	17.10	17.60	-0.50	[1.19]
Doctors with dual practice	0.14	0.09	0.05	[0.04]
Baseline Knowledge Score (standardized)	0.18	0.00	0.18	[0.15]
Baseline Attitude Score (standardized)	0.15	0.00	0.15	[0.15]
Baseline Practice Score (standardized)	-0.15	0.00	-0.15	[0.12]
Baseline Availability of DMPA stock at clinic	0.20	0.24	-0.03	[0.06]
# times discussed DMPA in past month	5.1	5.7	-0.64	[1.10]
# times prescribed DMPA in past month	2.0	2.4	-0.38	[0.53]

Providers who Attended the Seminar Were More Knowledgeable

	Attended seminar (A)	Did not attend seminar (B)	Difference (A) - (B)	
			Mean	SE
Baseline Knowledge Score [1]	0.474	0.000	0.474**	0.209
Baseline Attitude Score [1]	0.207	0.000	0.207	0.201
Baseline Practice Score [1]	0.102	0.000	0.102	0.210
Female	0.770	0.608	0.162**	0.079
Amman	0.836	0.784	0.052	0.068
Years of FP experience	17.0	17.3	-0.288	1.574
Sample range	46 -61	50-74		

Significant at 90% (*), 95% (**), 99% (***) confidence.

(1) For all scores, the group of providers who did not attend the seminar has a mean of zero and a standard deviation of one.

Fail to Detect Impact on Knowledge and Practices, but Suggestive Evidence Related to Attitude and Confidence
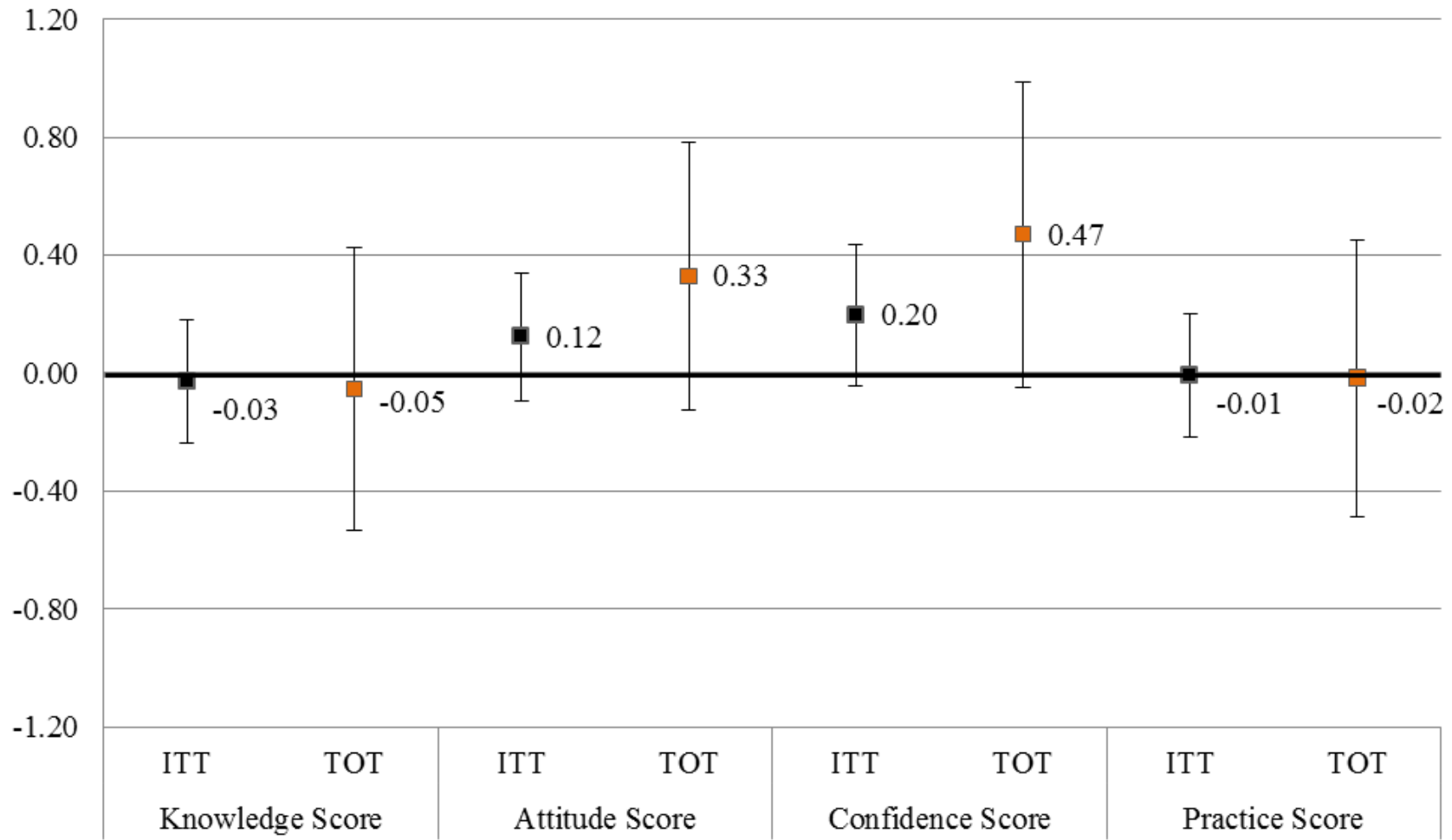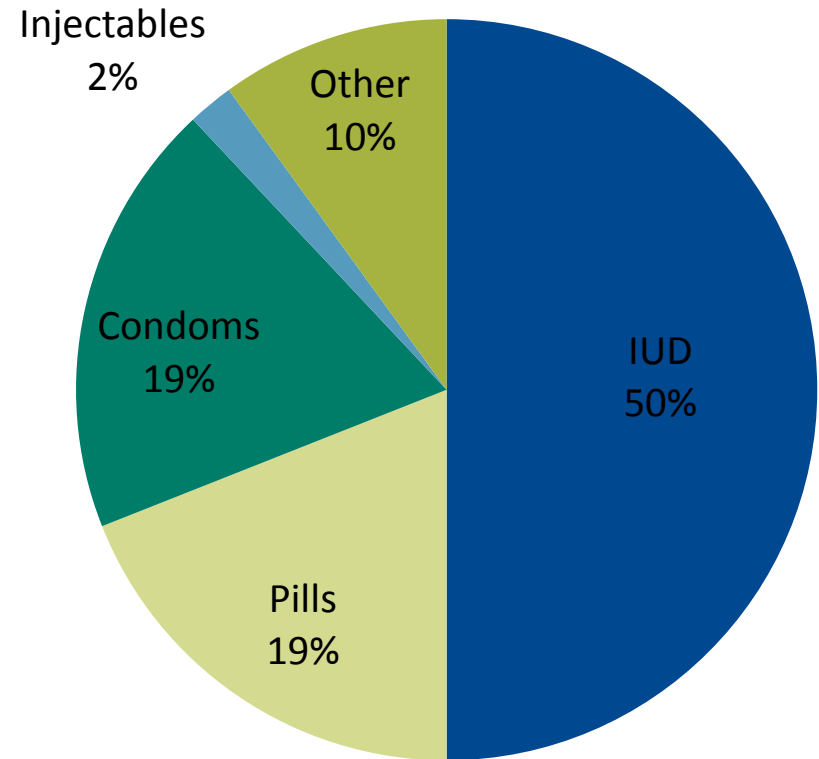

All lines represent 90% confidence intervals

Jordan: a Snapshot

- Fertility rate: 3.5
- Modern Contraceptive Prevalence Rate (CPR): 42%
- IUD most common method
- Less than 1% of women use injectables
- 19% use traditional methods
- Unmet need for FP
- Private sector important FP source

IUD: Most Common Modern Family Planning Method Used

- High reliance on IUD

- Use of hormonal methods such as pills and injectables still relatively low

Source: DHS 2012