

# Comparing sexual behavior of virginity pledgers and similar non-pledgers

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## Abstract

This study evaluates whether virginity pledgers are less likely to have sex than similar non-pledgers. Using Add Health waves 1–3, wave 2 virginity pledgers (n=289) were matched with non-pledgers (n=645) using exact and nearest-neighbor matching on pre-pledge (wave 1) factors including religiosity and attitudes towards sex and birth control. Pledgers and matched non-pledgers did not differ in premarital sex, sexually transmitted diseases, age of first sex, and lifetime sexual partners, but pledgers had 0.1 fewer past-year partners. Pledgers were less likely to use birth control and condoms in the past year and birth control at last sex.

## Matched Sampling Motivation

Matched sampling compares pledgers with only similar non-pledgers.

Matching is necessary because pledgers are radically different from non-pledgers before pledging.

Matching ensures that outcome differences are not due to observable pre-pledge differences.

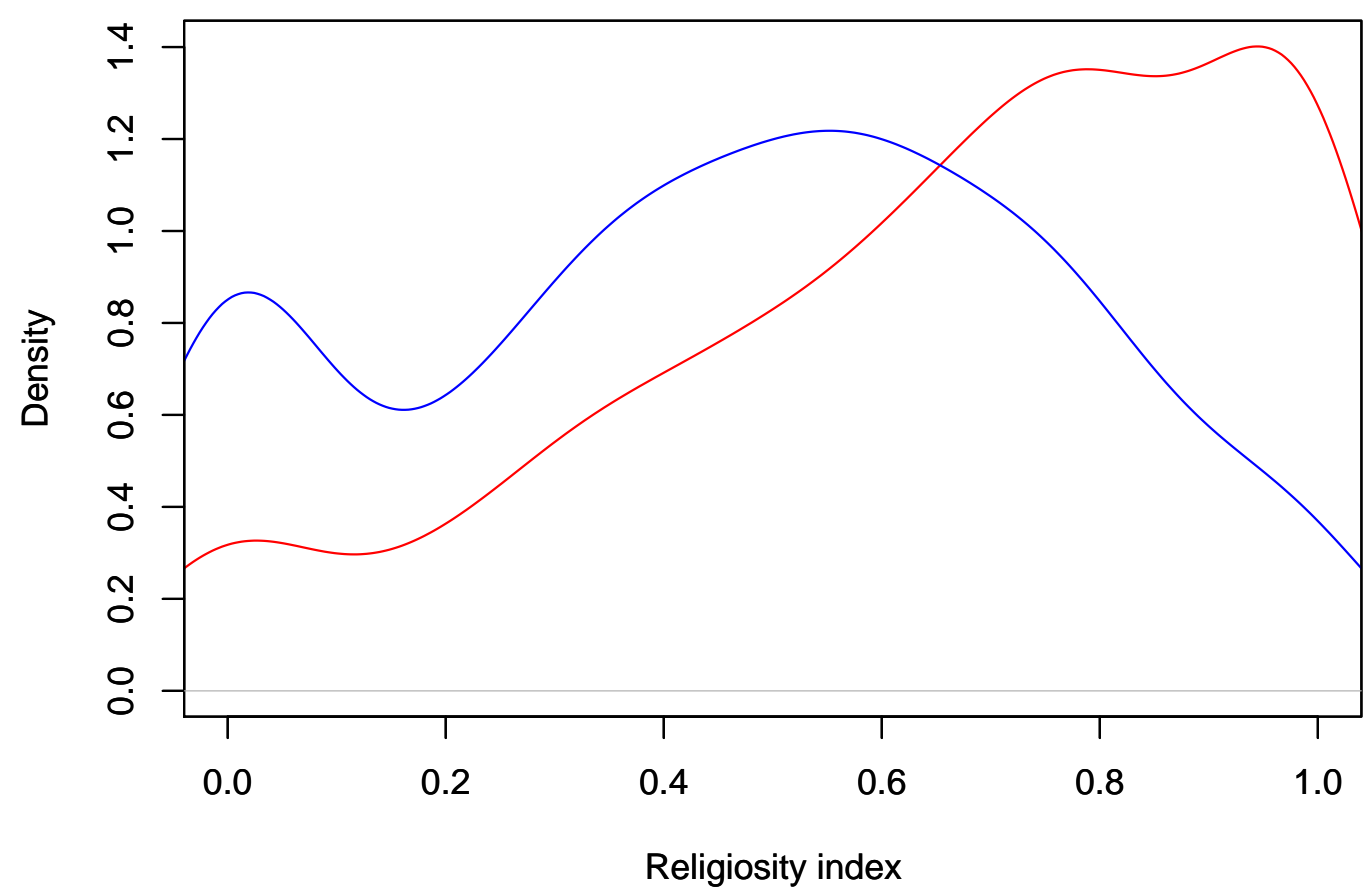


Figure 3: Religiosity: Example difference between pledgers (red) and non-pledgers (blue)

## Statistical Motivation

Matching does not make parametric assumptions, as regression does.

Regression is frequently insufficient to adjust fully for pre-existing differences.(4; 7; 9)

## Matched Sampling Procedure

1. Control for pre-pledge variables, measured in 1995.

- Exact match on:  
Attend church/youth group weekly.  
Feel guilty if had sex.
- Nearest-neighbor match on 3 “closest matches” according to distance measure.
- Matches preferentially chosen with similar predicted probability of pledging (i.e., propensity score calipers.)

2. Pledgers are those with new pledge in 1996.

3. Outcomes measured in 2001.

Used MatchIt package in R(5).

## Match Quality

After matching, we have:

289 pledgers taking the pledge at wave 2.

Matched set of 645 non-pledgers chosen from the 3151 non-pledgers.

## Pledgers vs. non-pledgers: pre- and post- matching

Pledgers and non-pledgers balance on 128 variables. Example items:

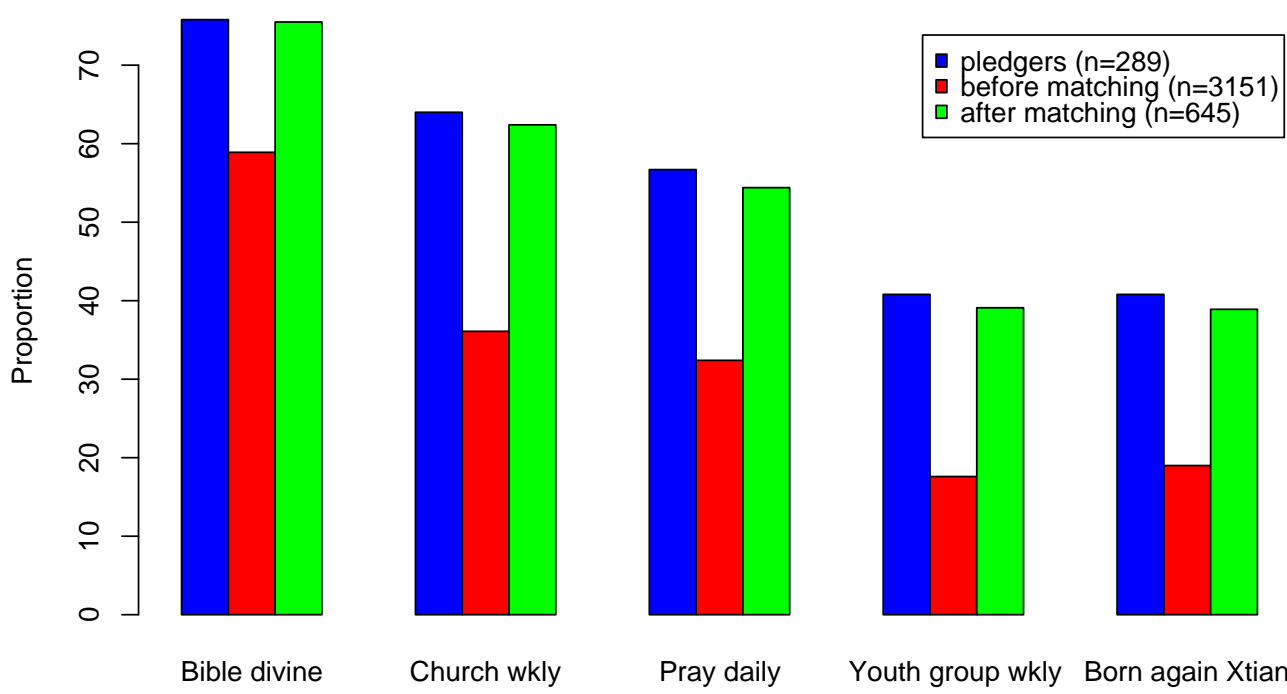


Figure 4: Religious involvement

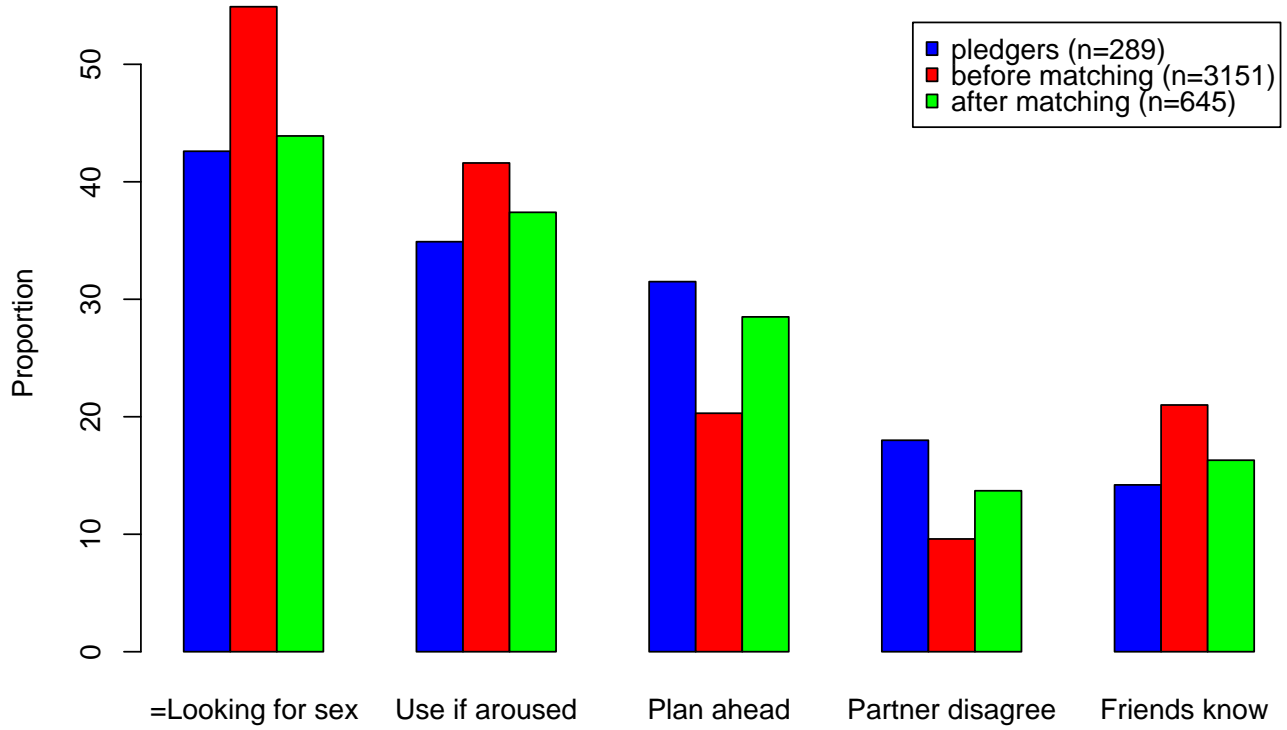


Figure 5: Birth control efficacy

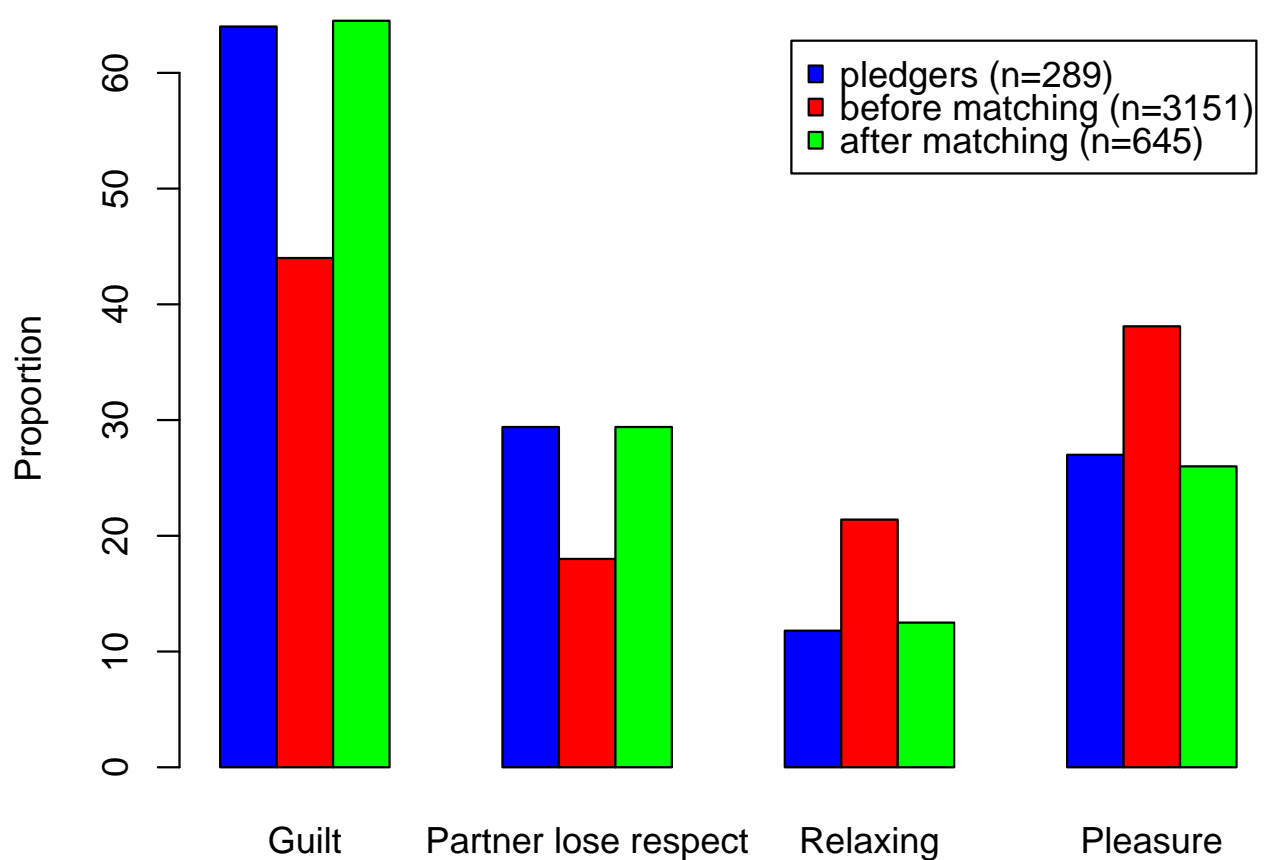


Figure 6: Sex expectations

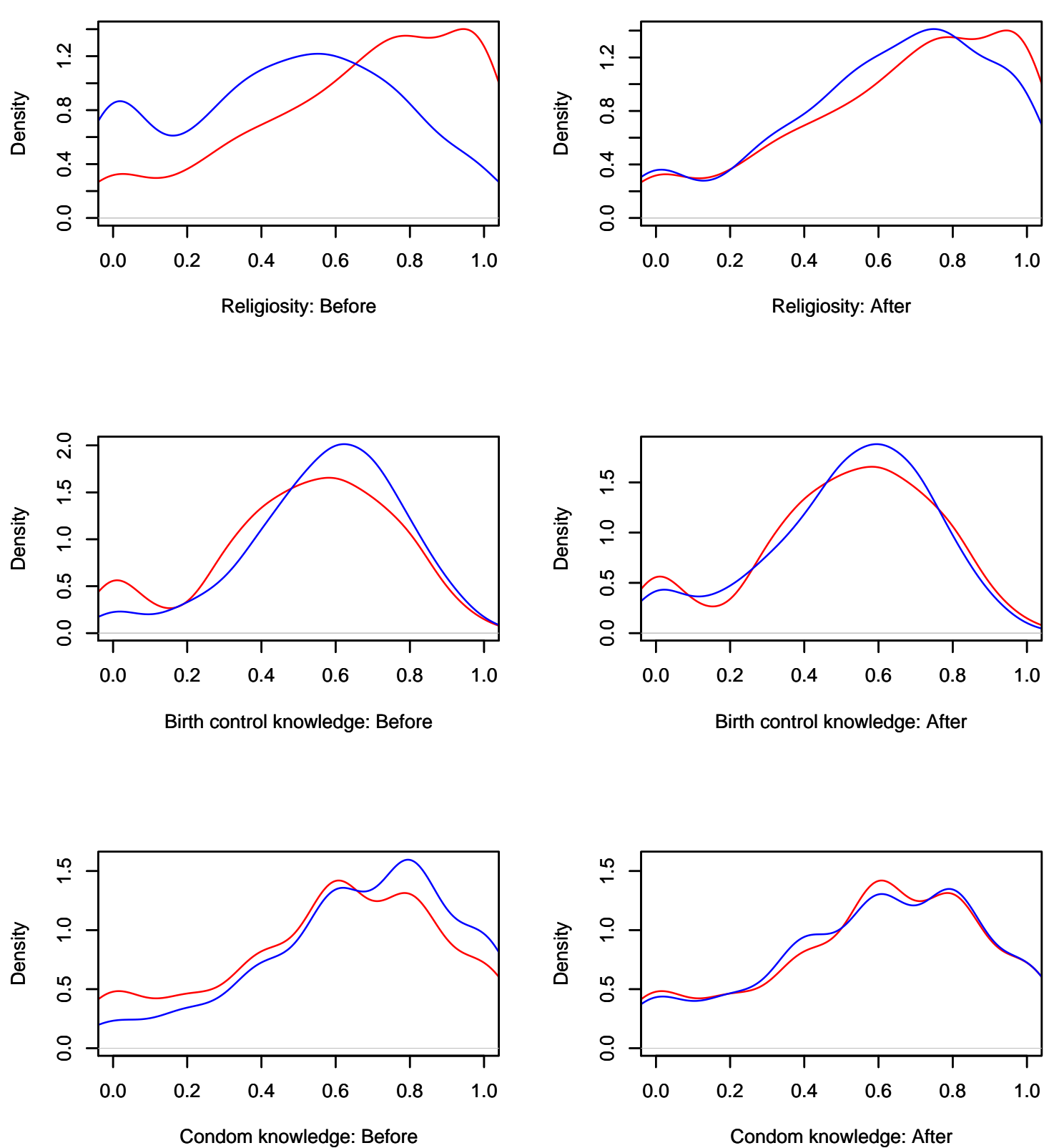


Figure 7: Religiosity and Birth control and condom knowledge: before and after matching. Pledgers (red) and non-pledgers (blue)

## Five years later. . .

84% of pledgers retracted their pledges.

Pledgers and matched non-pledgers did not differ in:

- Premarital vaginal sex.
- Giving or receiving anal sex.
- Giving or receiving oral sex.
- Age of first sex.
- Number of lifetime sexual partners.
- Positive tests for chlamydia, gonorrhea, or trichomoniasis.

Pledgers had an average of 0.1 fewer past year sexual partners.

Fewer pledgers used birth control and condoms in the past year.

Fewer pledgers used birth control at last sex.

Full results are under embargo through January 5, 2009.

## Comparison with previous work

	Previous studies	This study
Methods	Regression (Parametric)	Matching (Non-parametric)
Comparison group	All non-pledgers	Similar non-pledgers
Pre-pledge attitudes to sex	Similar to US teens'	More socially conservative
Post-pledge	Lower sex, b.c. use.	Same sex, less b.c.

## Conclusions

The sexual behavior of virginity pledgers does not differ from that of closely-matched non-pledgers.

Pledgers are less likely to protect themselves from pregnancy and STDs before marriage than matched non-pledgers.

Virginity pledges do not measure abstinence-only program success.

Federal government should require funded programs to provide only accurate birth control information, following the lead of several states.



Figure 1: 210,000 pledge cards on Capitol lawn 18 months after virginity pledge debut (J Veneman)

## Virginity Pledges

Abstinence-only sex education (AOSE) is funded at \$204 million/year in 2008.(6)

Abstinence programs encourage participants to make sexual abstinence pledges (“virginity pledges”) to formalize their commitment.

Abstinence programs may evaluate themselves according to the number of participants taking virginity pledges, rather than sexual behavior.(6)

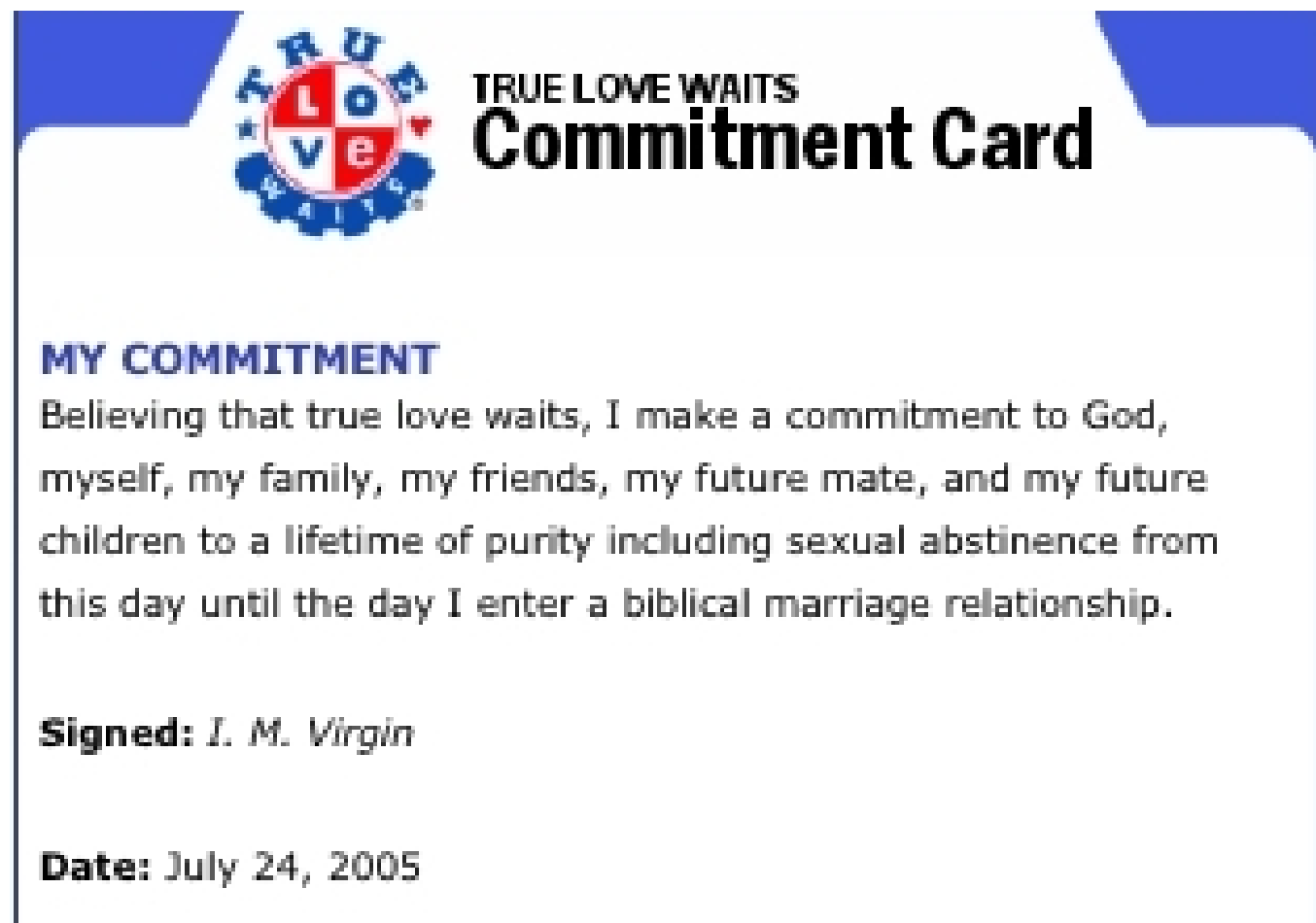


Figure 2: Example virginity pledge

## Past Research

Before pledging, pledgers are more religious, more negative towards sex and birth control, less sexually experienced than non-pledgers.(1)

Fewer pledgers than non-pledgers have sex after 1 and 5 years; no STD difference. (1; 2)

Formal virginity pledge not associated with less sex; promising self is.(3)

Pledgers may underreport past sexual activity.(8)

## Add Health Data

Nationally-representative longitudinal study of 11,000 adolescents age 12–18, interviewed in 1995, 1996, 2001.(10)

Over 100 potential covariates of virginity pledge and sexual intercourse identified using NIMH health behavior model, assembled into indices with factor analysis.

Subsample of interest: 3440 respondents who in 1995:

- Never took virginity pledge.
- Never had sex.
- Sex and birth control attitudes and knowledge known.

## References

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