Association of social integration and partner support with fecundability

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September 27, 2024
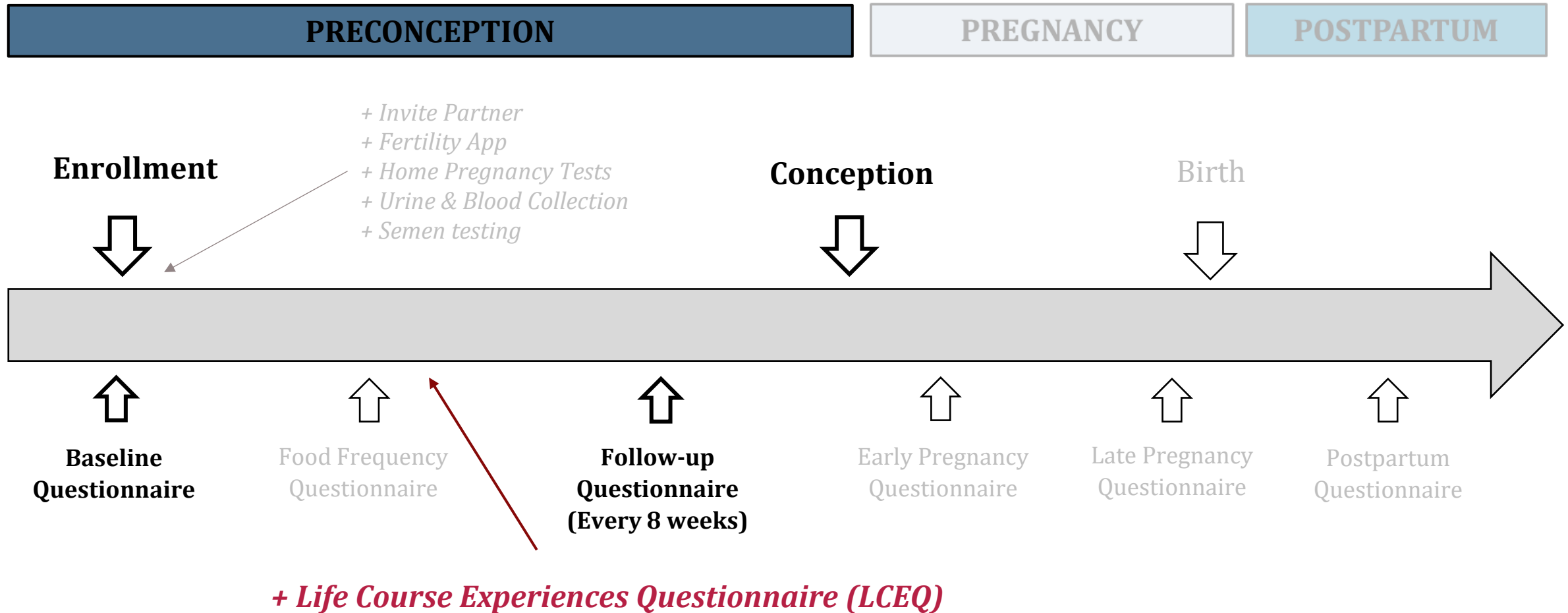
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Background

- About 50% of adults in the United States report experiencing loneliness.[1,2]

- Infertility affects 8-15% of reproductive-aged couples in the U.S. and has harmful consequences including poor mental health, economic hardship, and social stigma.[3,4]

- Partner support is associated with pregnancy outcomes, but the relationship of social connection and partner support with fecundability (per-menstrual cycle probability of conception) is not well known.

- **Study objective: To assess the effect of social integration and partner support on fecundability**

Study population

- Pregnancy Study Online (PRESTO): ongoing web-based prospective cohort study of pregnancy planners

- Eligible participants:
  - assigned female sex at birth
  - aged 21-45 years
  - residents of the United States or Canada
  - trying to conceive with one male partner
  - not using fertility treatment or contraception

- Data collection from 2013—2024

Preconception cohort study design
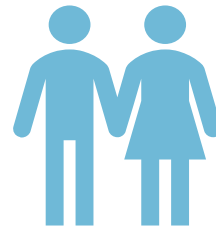
Exposure assessment
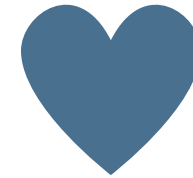
Partner support

Social integration

Adapted 8-item version of the Berkman-Syme Social Network Index (SNI)

Emotional support

"To what extent could you count on your partner to provide you with emotional support?"

Love and affection

"To what extent did your partner show you love and affection?"

Exposure time window: year before enrollment
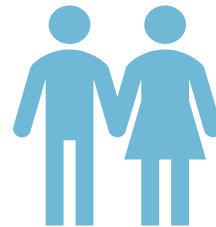
Exposure assessment

Partner support

Social integration

<5: socially isolated
≥5: socially integrated

Emotional support

"To what extent could
you count on your
partner to provide you
with emotional support?"

Love and affection

"To what extent did
your partner show
you love and
affection?"

Exposure time window: year before enrollment
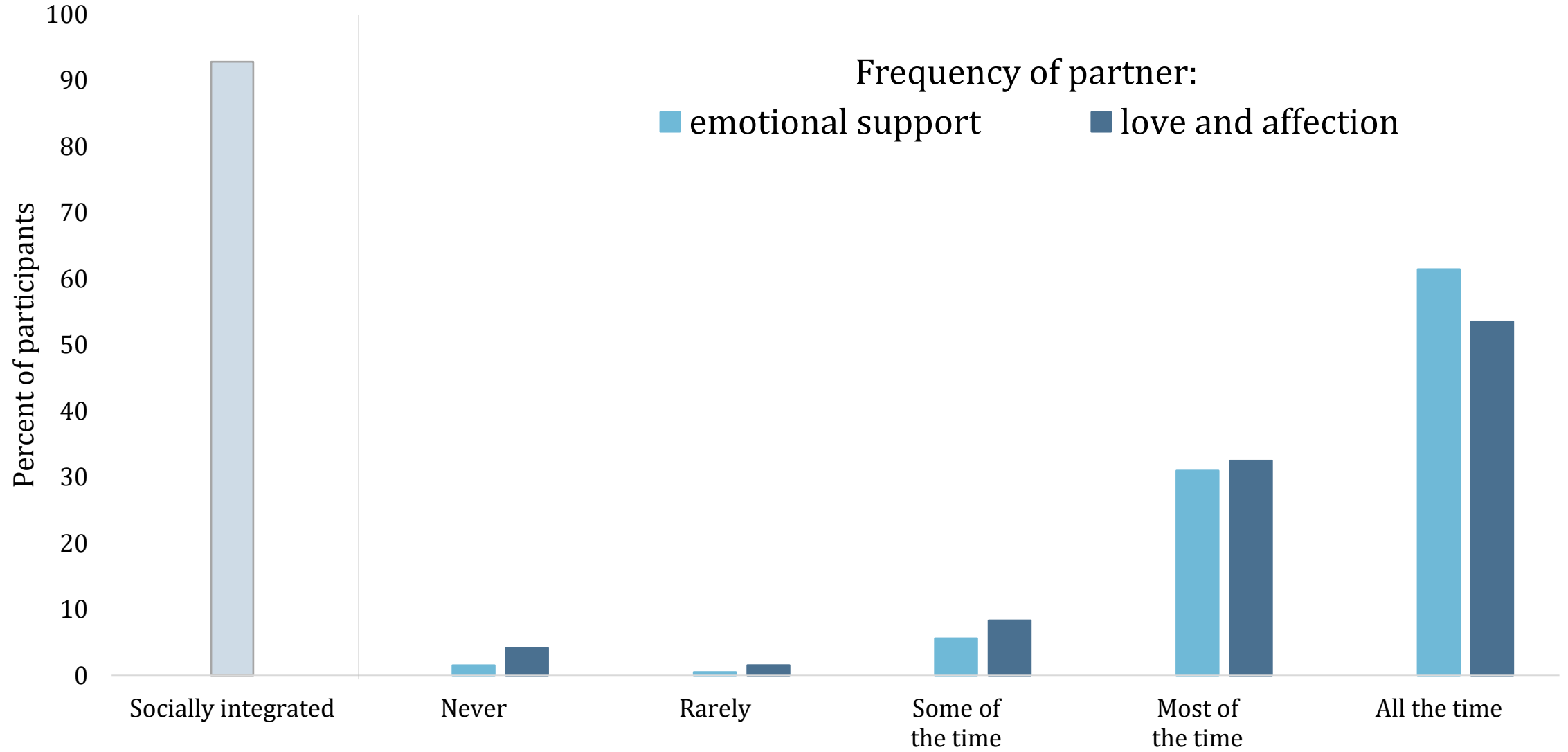
Outcome assessment

- Current pregnancy status and method of confirmation were ascertained from follow-up questionnaires
- Fecundability: per-menstrual cycle probability of conception and measured via time-to-pregnancy (TTP)

Statistical analysis

- Adjusted proportional probabilities regression models to compute fecundability ratios (FRs) and 95% confidence intervals (CIs).

- Inverse probability weighting to address potential selection bias from differential completion of the LCEQ

- Analyses limited to those who completed the LCEQ (N=7,484)

- Sensitivity analysis restricting to those who completed the LCEQ prospectively and who had <3 cycles of pregnancy attempt at study entry (n=2,926)

Results

Fecundability Ratio (95% CI)

Level of social integration
Low: social isolation — 1.00 (Reference)
High: social integration — 1.38 (1.21, 1.56)

Frequency of emotional support from partner
No emotional support — 1.00 (Reference)
Rarely — 1.36 (1.03, 1.81)
Some of the time — 1.20 (0.99, 1.45)
Most of the time — 1.46 (1.24, 1.72)
All the time — 1.53 (1.30, 1.80)

Frequency of love and affection from partner
No love and affection — 1.00 (Reference)
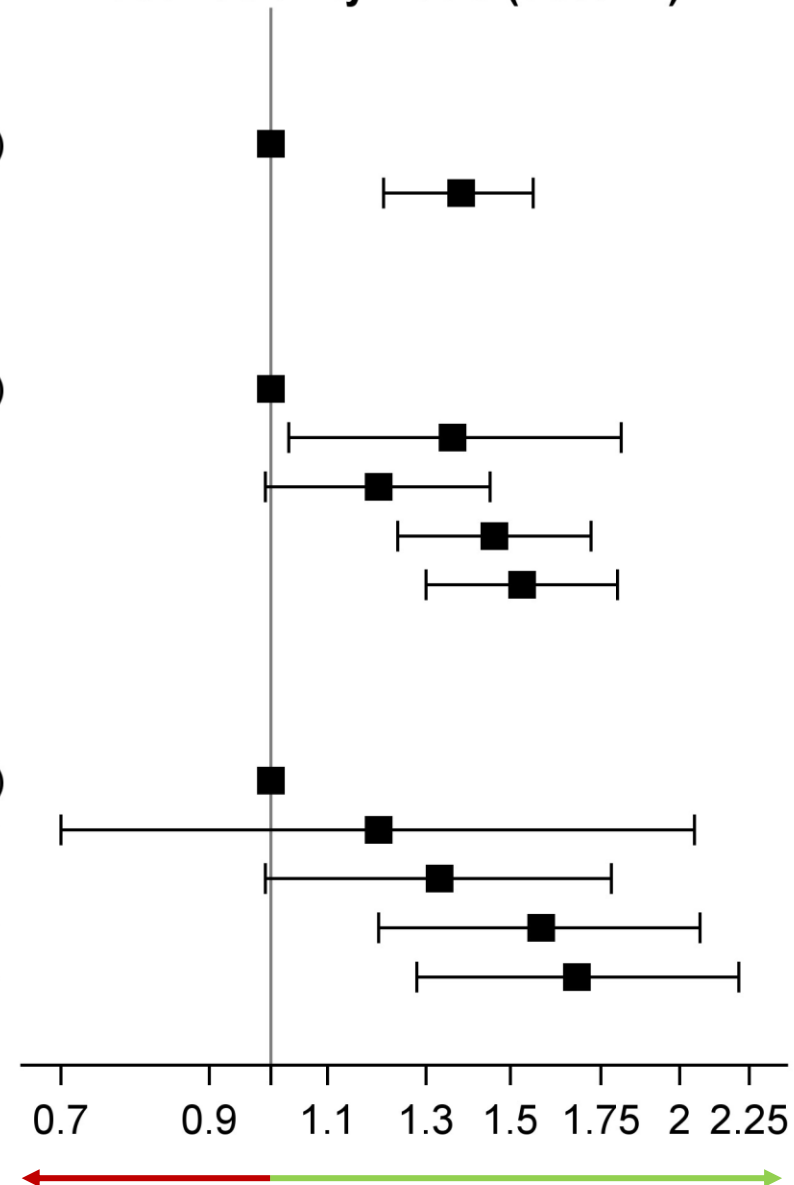Rarely — 1.20 (0.70, 2.05)
Some of the time — 1.33 (0.99, 1.78)
Most of the time — 1.58 (1.20, 2.07)
All the time — 1.68 (1.28, 2.21)

0.7   0.9   1.1   1.3   1.5   1.75   2   2.25

Sensitivity analysis

- 39%(n=2926) of participants had <3 cycles of attempt time at study entry and completed the LCEQ prospectively (within 30 days of invitation)

- When restricting to these participants:
  - The associations of social integration and frequency of emotional support from partner with fecundability **persisted** but were **attenuated**
  - The association between frequency of love and affection from partner with fecundability was **strengthened**

Conclusions

- Social integration and partner emotional support may have positive effects on fecundability

- Frequency of partner love and affection is positively monotonically associated with fecundability

- This work is ongoing

Acknowledgements

- PRESTO participants
- Co-Authors:
  - Collette N. Ncube
  - Sharonda M. Lovett
  - Julia C. Bond
  - Renée Boynton-Jarrett
  - Lauren A. Wise

Thank you!
Questions?
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References

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Appendix

Statistical adjustment

- Social integration model adjusted for age, number of siblings, lifecourse trauma, education, income, depression and anxiety diagnoses, wealth, parity, and history of infertility or miscarriage

- Partner models adjusted for age, lifecourse trauma, depression and anxiety diagnoses, parity, and history of infertility or miscarriage

Sensitvity analysis results

	FR (95% CI)
Level of social integration	
Low: social isolation	Reference
High: social integration	1.27 (1.02-1.59)
Frequency of partner love and affection	
Never	Reference
Rarely	2.31 (1.03-5.18)
Some of the time	1.90 (1.00-3.60)
Most of the time	1.95 (1.06-3.61)
All the time	2.15 (1.17-3.97)
Frequency of partner emotional support	
Never	Reference
Rarely	1.19 (0.75-1.89)
Some of the time	0.97 (0.68-1.38)
Most of the time	1.31 (0.96-1.80)
All the time	1.33 (0.97-1.82)

Limitations

- IPSW model misspecification

- Exposure measurement

- Residual confounding