**The Development of an mHealth Infrastructure for Child and Family Therapy**

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**BACKGROUND**

- Conflict, divorce, and interpersonal violence have far-reaching economic, psychological, and health costs for children and their families.
- Family fragmentation is estimated to cost US taxpayers $112 billion annually.
- We propose a framework for developing a mobile intervention system for improving relationship functioning in families and couples.

**METHOD**

- Couples carried smartphones and wore wearable sensors for one day.
- They provided hourly survey reports, including if and when they had conflict.

**RESULTS**

**DISCRETE HOURLY INTERPERSONAL EVENTS**

- Interacting:  
  - Predicted: 104
  - Actual: 5
- Conflict:  
  - Predicted: 476
  - Actual: 4

**CONTINUOUS HOURLY MOOD STATES**

- Positive Mood:  
  - Predicted: 75
  - Actual: 75
- Feelings of Closeness:  
  - Predicted: 85
  - Actual: 85

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**THEORY**

- We propose a framework for developing a mobile intervention system for improving relationship functioning in families and couples.

**ALGORITHM DEVELOPMENT**

- Self-reports were used as the ground-truth criteria for the machine learning algorithms.
- We started with easy-to-detect relationship states.
- Based on previous research and theory, we designed a framework for developing a mobile intervention system for improving relationship functioning in families and couples.

**DISCUSSION**

- The results provide initial proof-of-concept that it is possible to detect indices of relationship functioning in daily life with reasonable accuracy.
- Next steps involve building and launching the fully functioning application system to detect important relationship processes in real-life settings.

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**ACKNOWLEDGMENTS**

- Supported by National Institutes of Health/National Institute of Child Health and Human Development and National Institute of Nursing Research (Margolin, PI).
- Supported by National Science Foundation Graduate Research Fellowship (Timmons, PI).
- Supported by University of Southern California CTSI (NIH/NCATS 8UL1TR000130, Margolin, PI).
- Supported by American Psychological Association Dissertation Research Award (Timmons, PI).

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**PATENTS**


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**REFERENCES**