

EMA Adolescent Payment Structures


Payment Models (1 eg. per model) & Response Rates (Link to each in GDoc on first slide)

Study	Age	Payment Structure	Responsiveness	Max \$	Number of surveys (number per day)
Roberts et al, 2019 (no mental dx in inclusion cr.)	11-16	Proportion-based (\$x for completing y% of surveys), with completion bonus.	Completed 76% of studies	85	20-30 (2-3 per day)
Glenn et al, 2020 (suicide risk)	12-18	Adherence-based. ("if you complete 75% or more you get the payment")	Adherence rate = 62.6%, but 41% experienced technical difficulties.	100	140 (5 a day)
Benarous et al, 2016 (SUD, hospitalized) <small>(hypothetical, similar results to other studies with this payment model)</small>	11-18	Expected to be paid a fixed amount by week.	Expected to be ~80% per previous research.	23.49 (paid more for other measures)	70 (5 a day)

Study	Age	Payment Structure	Responsiveness	Max \$	Number of surveys (number per day)
Dunton et al, 2015 (no mental dx in inclusion cr.)	7-12th grade	Fixed for study.	50.1%	100	Signal and event-contingent. (Signalled = 7 a day)
Duntan, Liao, Intille, Sprujit-Metz, Pentz, 2012 (no mental dx in inclusion cr.)	9-13	\$1 per survey.	80%	20	20 (3-7 a day)

Reviews

Compliance With Mobile Ecological Momentary Assessment Protocols in Children and Adolescents: A Systematic Review and Meta-Analysis

- The average prompting frequency was 4.2 times per day (range 2-9) for studies with nonclinical participants and 3.6 times per day (range 2-7) for studies with clinical samples.
 - Among these studies, most of them (n=26, 92.86%) provided monetary incentive to their participants.
 - Study participants were compensated either (1) in a fixed amount (n=16, 57.14%; ranged from US \$40 to US \$200) or (2) an incremental amount of monetary incentive (n=10, 35.71%) - participants received a base amount of compensation (ranged from US \$20 to US \$50) for participation.
 - **Duration did not significantly affect compliance rates.**
 - **Average compliance rates did not differ significantly between types of incentive schemes.**
 - **Among studies with clinical participants, the compliance rates were significantly higher in studies that employed the most frequent prompts, the opposite was true for non-clinical participants. (2-3 versus 4-5 versus 6+)**
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Using Mobile-Technology-Based Ecological Momentary Assessment (EMA) Methods With Youth: A Systematic Review and Recommendations

- The average survey completion rate was 76%, with individual study rates ranging from 51% to 92%; these rates are similar to rates observed in studies with adult samples.
- Another approach used to enhance youth compliance was to link compliance with incentives; 38% (k = 9) reported using incentives to enhance compliance, including monetary incentives (i.e., cash) and technology-based incentives, such as providing a pre-paid SIM card youth could use to make phone calls or text message during the study.
- Youth were prompted to complete EMA 2–9 times per day, with more frequent prompting used for shorter study durations.



In summary

- Adolescents show a 52-80% compliance rate for EMA surveys
- Non-clinical participants comply better with fewer surveys per day, the opposite is true for clinical participants
- A difference between payment structures does not have a significant effect on adherence rates
- Duration did not significantly affect compliance rates.



Payment Model Comparison

Study	Payment Structure	Responsiveness	Max \$	Number of surveys covered (number per day)	Max effective \$ per survey
GRMPY	\$1 per survey, plus \$5 bonus. Paid per week; 2 weeks.	~88% (from ClinCard expenses)*	52	42 (3 a day)	1.24
David's paper	Based on completing a certain number of surveys, compensation depends on number of days these requirements are met + a completion bonus; 3 weeks	84.9%	233	105 (5 a day)	1.66

Payment Model Comparison, 4 weeks model (per [Google Sheet](#))

Payment	Payment Structure	Max \$	Number of surveys covered	Max effective \$ per survey
Model 1 (5/day) <i>From paper on previous slide</i>	Based on completing a certain number of surveys, compensation depends on number of days these requirements are met + a completion bonus	$33.33 \times 4 + 25 \times 4 = 233$	140 (5 a day)	1.66
Proposed Model 2 (3/day)	Based on completing a certain number of surveys, compensation depends on number of days these requirements are met + a completion bonus	$20 \times 4 + 25 \times 4 = 180$	84 (3 a day)	2.14



UPDATES

Payment Model Comparison: Number of Surveys, GRMPY structure + bonus of \$3

Surveys/day	Payment Structure	Max \$ (per week)	Max effective \$ per survey	Total number of surveys (per week)
3	\$1 per survey, plus \$3 bonus. Paid per week; 2 phases of 2 weeks.	96 (24)	1.142857143	84 (21)
4	\$1 per survey, plus \$3 bonus. Paid per week; 2 phases of 2 weeks.	124 (31)	1.107142857	112 (28)
5	\$1 per survey, plus \$3 bonus. Paid per week; 2 phases of 2 weeks.	152 (38)	1.085714286	140 (35)
6	\$1 per survey, plus \$3 bonus. Paid per week; 2 phases of 2 weeks.	180 (45)	1.071428571	168 (42)
7	\$1 per survey, plus \$3 bonus. Paid per week; 2 phases of 2 weeks.	208 (52)	1.06122449	196 (49)

5+ Surveys when children are in school

From Google Doc, linked in notes

- Dunton et al, 2016 (4-7 a day) → only during non-school hours
- Dunton et al, 2011 (3-7 a day) → only during non-school hours, all EMA questions not asked at all intervals to reduce burden
- Rah et al, 2016 (4-8 a day) → only 4 during non-school hours on weekdays
- Rusby et al, 2013 (3-6 a day) → only 3-4 during non-school hours on weekdays
- Glenn et al, 2020 (4 a day) → only during non-school hours
- Weinstein et al, 2013 (5 a day) → Participants were allowed to carry the device at school, although were trained to temporarily disable the random prompt function during situations when they could not use a device (e.g., during a test, in response to a teacher's requests)
- Christensen et al, 2015* (4-7 a day, but TD; 64% compliance in week 1, 57% in week 2) → The PDAs, carried by participants, prompted responses at random intervals at least 30 minutes apart during participant-identified waking, non-school hours, such that each participant received 4–7 prompts per day. Participants received the maximum compensation—\$140—if they responded to 70% or more of all EMA signals and completed several additional measures.

In general, most studies that don't prompt during non-school hours don't exceed more than 4+ EMAs on weekdays. *One study included "5-7" prompts during non-school hours.