

Exhibit 104

Late Night Use[☾]

IG Mental Well -being, Problematic Use • Strategy and Design



Why Late Night?

In [collaboration](#) with CWB, we identified 4 critical PU sub -areas related to potentially problematic on -platform behaviors

Of these 4, we identified late night use as a top priority for H2 2022 as negative impact of poor sleep is well -documented ([ref](#)) and this is where we have coverage gaps for ~8% of teens

Problematic Use				
Sub-area	Teen prevalence	Problem severity	Instagram coverage	TikTok coverage
Late night use Late night usage/during times that are likely displacing sleep for most people (12am-4am)	7.4% of teens WAU (over one week) exhibit one or more late-night problematic behaviors	Medium	Not supported	Time-spent awareness videos Auto-silenced notifs after 9pm Night insights
Frequent use Habitual and repeated checking of: app, notifications, direct, quick switching between surfaces	Sizing in progress	Medium	Not supported	App-opens insights
Long periods of use Spend more time in the app than intended, lose track of time, low awareness of time spent and long sessions	33% of teens WAU Have at least one 20min+ session per week	High	Daily usage limits Take a break (upsell and tool)	Take a break (tool only, no upsell)
Passive use Sessions with low/no engagement, long scrolling	9% of teens WAU Scrolls with 35+ impressions on the same topic	Medium	Alternative topic nudge	Usage-awareness videos



Teens (13-17) late-night use

Teens late night usage ([12am - 4am](#))

- 43.3% (77.9M) WAU have at least 1 late night session over one week
- 4.6% of WAU teens have 1 or more late sessions every night over one week
- 7.4% (13M) WAU exhibit at least 1 late night behavior associated with problematic use (see proxies below) over one week

Problematic behavioral proxies (p95) WAU

- 18 min+ spent on IG between 12 am and 4 am
- 5 sessions between 12am and 4am
- 1 session between 12am and 4am with 18+ surface switches

Late Night PU metrics identified as [behavioral proxies](#) (thresholds derived from p95).

See FCI Countries breakdown [here](#).

Why is 12AM - 4AM late night?

- Previous research which linked problematic Facebook use to late -night use, has been associated with both later bedtimes and rising times and with insomnia. Because of the association between PU and lack of sleep, the fraction of sessions that occur late at night (12AM - 4AM) was used for this paper.
- 12AM-4AM is the approximate time period associated with higher negative affect in Golder & Macy 2011.
- On TikTok all teens do not receive notifications at night by default:
 - 13-15 yrs old - notif muted starting at 9PM
 - 6-17 yrs old - notif muted starting at 10PM
- Apple defaults Focus Mode/Do Not Disturb to 10PM - 7AM daily

We are currently collaborating with CWB on a “ground truth” measurement survey of problematic use on Instagram, and expect to have a PU prevalence estimate by end of H2 (see [understand plan](#)).

In the meantime, we can leverage behavioral proxies identified in a Facebook study to estimate PU on Instagram. That study found that 12.5% of FB app users worldwide experience PU based on user self-report ([ref](#)) and identified the following metrics as PU proxies:

PU Behavioral Proxies

1. No-engagement late night sessions
2. Late night high volume product switching
3. No-engagement repeat sessions (Less than 10 min from end of prior session)
4. High volume of short sessions (<15 sec)
5. High Frequency notifications checking

Using these signals, plus late night long sessions (since displacing sleep is one of the negative life impacts of PU), we estimate that 18.3% of IG teen users exhibit behaviors associated with PU.



Late Night Problematic Behavioral Proxies

1. Late night sessions

Stated teen/non-teen	Avg total sessions late night	P50 total sessions late night	P75 total sessions late night	P80 total sessions late night	P95 total sessions late night
non-teen	0.9	0.0	0.7	1.0	4.0
teen	1.1	0.0	0.8	1.1	5.3

1. Late night high volume product switching

Stated teen/non-teen	Avg product switches late night	P50 product switches late night	P75 product switches late night	P80 product switches late night	P95 product switches late night
non-teen	3.8	0.0	3.1	4.4	17.6
teen	3.7	0.0	2.8	4.0	18.5

1. Late night long sessions (since displacing sleep is one of the negative life impacts of PU)

Stated teen/non-teen	Avg Late night time spent (min)	P50 Late night time spent (min)	P75 Late night time spent (min)	P80 Late night time spent (min)	P95 Late night time spent (min)
non-teen	3	0	3	5	17
teen	3	0	3	4	18

Late night use
x teens (13-17)

Late Night Problematic Behavioral Proxies by FCI Countries:

With p95 set by the global average this is the % of WAU by Country(FCI):

FCI Country	% of total WAU teens with at least 1 PU behavior	# WAU Teens with at least 1 PU behavior
US	11.74%	1,522,833
Australia	6.27%	73,118
Brazil	8.10%	861,713
France	12.32%	256,601
Germany	5.14%	107,208
India	3.05%	1,436,068
Japan	7.01%	427,045
Korea	13.49%	280,498
UK	4.82%	106,842

Late night use
x teens (13-17)

This could indicate that there are key differences in markets in terms of either norms or problematic use, which remains to be seen by further research.

If we were to set thresholds based on the market it would like this:

FCI Country	Late Night Total Sessions (Teens) p95	Late Night Minutes spent (Teens) p95	Late Night Product Switches (Teens) p95	% of Total WAU teens with at least 1 PU behavior
Global	5	18	18	7.4%
US	10	19	13	7.1%
Australia	5	12	13	7.8%
Brazil	5	22	24	7.6%
France	9	19	13	8.0%
Germany	5	10	12	7.4%
India	2	11	34	6.6%
Japan	6	10	13	7.7%
Korea	10	20	15	7.3%
UK	5	9	12	7.5%



Sizing/Severity Late Night Use

- 43.3% (77.9M) of WAU teens have at least 1 late night session* L7
- WAU teens L7 with at least 1 session:
 - >10 min: 13.6% (24.5 M)
 - >30 min: 3.24% (5.8M)
 - >1 hr: 0.59% (1M)
- 67M Sessions (0.4% of total teen sessions) >10 min late night L7 for teens
- 4.6% of WAU teens have 1 or more sessions every night L7
- 33% of teen sessions between 12 am and 4 am start due to a notif (26% receive and click after midnight)

*Late night timeframe defined as 12 am to 4 am, sessions > 0 seconds

For Users with Late Night PU Behaviors:

- An average of 40% of teen's sessions, start from a notification or an app badge.
 - 18% of dau start a session from a notification that was sent and clicked within 12 am and 4 am
 - 43% are direct text notifications
- Users who start a session organically have a higher daily average time spent in reels, compared to users who start a session from notifications/app badge whose daily average time spent is higher on direct.

Sizing/Severity

Late Night Use

Session start attribution is organic				Session start attribution is notification or app badge			
Surface	Daily avg minutes	Daily mean minutes	Daily p95 minutes	Surface	Daily avg minutes	Daily mean minutes	Daily p95 minutes
<u>reels</u>	8.0	2.0	36.0	home	6.4	3.1	23.8
home	3.9	1.4	16.5	<u>direct</u>	9.9	2.3	47.3
profile	3.5	0.8	15.9	reels	6.8	1.9	29.9
explore	5.7	0.7	29.1	profile	3.7	1.3	15.6
saved	3.3	0.7	15.1	Stories creation	2.7	0.9	11.9
direct	2.4	0.4	10.7	saved	2.5	0.6	11.6