

Multimedia Appendix File 5: Overview of observational and process data studies

| Author, year of publication | Number of participants ^c | Intervention description and duration | Engagement strategy in intervention design | Effective engagement strategy according to authors' conclusion | Engagement rates |
|-----------------------------|-------------------------------------|--|--|---|--|
| Clarke et al [18], 2016 | 90 | Intervention assesses users' self-reported symptoms and then provides 24/7 access to a personalized intervention that includes real-time, self-monitoring of mood, interactive psychotherapeutic modules (7 weeks) | <ol style="list-style-type: none"> 1. Reminders to facilitate self-monitoring by SMS or email as scheduled by the user 2. Graphical feedback about self-monitoring | <ol style="list-style-type: none"> 1. Personalized feedback incorporating program content 2. Alerts and reminders 3. Flexibility in agenda and usage | NR |
| Zarski et al [20], 2016 | 395 | 7 modules composed of psychoeducation and exercises for every module (4 to 7 weeks) | CG: Intervention | IG1: Content focus guidance | CG: M=4.4 (SD 2.8) (Mean (M) number of completed treatment modules) |
| | | | IG1: Personalized written feedback from e-coach on the completed exercises + reminder by e-coach once in 7 days (content-focused guidance) | | IG1: M=5.7 (SD 2.3) |
| | | | IG2: Personalized feedback and adherence monitoring on demand of participants (adherence-focused guidance) | | IG2: M=5.6 (SD 2.3) |
| Chou et al [21], 2017 | NR | Gamified challenges in browser-based community forum Players can invite other players to browser-based community. To form allies (4 weeks) | <ol style="list-style-type: none"> 1. Gaming language 2. Social forum 3. Brightly colored layout; aesthetically pleasing icons | NR | Completion rate: 20% (Completion rate: percentage of users that completed 4-weeks intervention) |
| Dryman et al [22], 2017 | 3439 | Five modules: learning through psychoeducation, core skill development by cognitive restructuring, Two exposure modules, and final graduation module (12 weeks) | <ol style="list-style-type: none"> 1. Coaches paired with users to provide feedback and support through weekly calls 2. Coach-initiated and automated emails to encourage participation and progress | 1. Guidance and support through coaching | Average activities/participant: 12 All module completion rate:16% (Average activities/participant: average |

| | | | | | |
|---------------------------|------|--|---|---|--|
| | | | | | of total number of activities completed by all participants <u>All module completion rate:</u> percentage of participants completing all 5 modules) |
| Bakker et al [24] 2018 | 44 | Intervention assesses user inputs on distress and provides with daily coping activities/games (30 days) | 1. Games designed with real-time coping strategies. 2. Rewards for daily completed games 2. Push notifications of incomplete games 3. Clean graphic design | NR | NR |
| Morrison et al [25], 2018 | 543 | Tools to improve awareness of their thoughts or behaviors and support change in thinking patterns and behaviors (NR) | IG1: (web-based) | IG2: 1. Simple and reduced content 2. Easy Accessibility 3. Push notifications for incomplete tool | NR |
| | | | IG2: (mobile app) 1. Simple and reduced content 2. Easy Accessibility 3. Push notifications for incomplete tool | | NR |
| Song et al [26], 2018 | 3076 | Self-help tools, a secure account with access to additional resources and links (NR) | NR | Personal email invitations to visit the site | Session rate: 2420 (45.51%). Bounce rate 36.6%, N of pages/ session:7.6, Mean session duration: 3 min 42 s, Conversion rate: 24.4% <u>(Session rate:</u> The percentage of new visits. <u>Bounce rate:</u> Bounce rate is single-page |

| | | | | | |
|-------------------------|---|--|--|--|--|
| | | | | | <p>sessions divided by all sessions.</p> <p><u>N of Pages/ session:</u> dividing the total number of page views by the total number of sessions</p> <p><u>Conversion rate:</u> Number of goal conversions divided by the number of sessions)</p> |
| Carter et al [28], 2019 | 5 | Daily task, user-specific feedback, Informational resources, self-assessment page, journal page (NR) | <ol style="list-style-type: none"> 1. Self-monitoring tools for stress 2. Goal setting with daily task 3. User-specific feedback on stress level 4. Reminders and progress summary | Task with user-specific feedback and self-monitoring | <p>Task completion rate: 40-80%</p> <p><u>Task completion rate:</u> Each task completed by participant divided total number of participants</p> |

Note: N: Number, NR: not reported. M: mean, SD: standard deviation. IG: Intervention group, CG: Control group