Checklist 3. Standardized Reporting of Interventions Based on the TIDieR Checklist

Item No.	Item	What to report	Intervention
1	Brief name	Provide the name or a phrase that describes the intervention.	Feasibility, Acceptability and Preliminary Effectiveness of mHealth Microinterventions for Psychological Distress and Sleep Disturbance in adolescents and young adults with Gynecologic Cancer: A Pilot Randomized Controlled Trial
2	Why	Describe any rationale, theory, or goal of the elements essential to the intervention.	The intervention was informed by the 3P model of disease, digital microintervention framework, and the problem-solving therapy framework
3	What (materials)	Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed (e.g., online appendix, URL).	Materials included 63 WeChat official account articles, 3 emotion regulation audio recordings (including 2 breathing exercise recordings and 1 mindfulness meditation recording) and 2 electronic diaries for emotion and sleep recording
4	What (procedures)	Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	Procedures included distress support through problem-solving strategies, sleep behavior regulation through weekly sleep-diary feedback and individualized CBT-I-informed recommendations, emotion regulation through breathing training, mindfulness meditation, and emotion logging, and symptom feedback optimization through electronic sleep diary and online feedback sessions.

5	Who provided	For each category of intervention provider (e.g., psychologist, nursing assistant), describe their expertise, background, and any specific training given.	The intervention was delivered by the principal investigator and trained research team members with backgrounds in nursing and oncology supportive care. Providers received training in CBT-I-informed sleep behavior regulation, mindfulness-based emotion regulation techniques, intervention procedures, and use of the WeChat delivery platform. A standardized intervention manual was used to support consistency
6	How	Describe the modes of delivery (such as face to face or by another mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.	The intervention was primarily delivered via WeChat in an individual, self-directed format, supplemented by a 30-minute scheduled weekly teleconsultation for review, feedback, and tailoring.
7	Where	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	Intervention materials were accessed through WeChat in participants' daily living environments, primarily at home. Baseline orientation and clinical contact occurred in the hospital when applicable, and scheduled weekly teleconsultation was conducted online.
8	When and how much	Describe the number of times the intervention was delivered and over what period of time, including the number of sessions, their schedule, and their duration, intensity, or dose.	The intervention lasted 4 weeks. Participants were encouraged to engage in brief self-directed microintervention activities on at least 5 days per week. Emotion regulation activities could be used daily as needed. Sleep diaries were completed weekly, followed by a 30-minute scheduled weekly teleconsultation. Psychological distress support materials were delivered through WeChat and could be accessed according to participants' needs.

9	Tailoring	If the intervention was planned to be personalised, titrated, or adapted, then describe what, why, when, and how.	Tailoring occurred weekly. Researchers reviewed participants' psychological distress checklist responses, weekly electronic sleep diaries, intervention participation logs, WeChat backend usage data, and individual preferences. Based on these data, researchers adjusted the selection and combination of emotion regulation strategies, recommended psychological distress package content and provided individualized CBT-I-informed sleep behavior recommendations to improve relevance, reduce burden, and support engagement.
10*	Modifications	If the intervention was modified during the course of the study, describe the changes (what, why, when, and how).	No protocol-level modifications were made after the formal implementation began. Individual-level tailoring was delivered as planned according to the intervention protocol.
11	How well (planned)	If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.	Adherence was planned to be assessed using WeChat backend records, weekly microintervention record forms, electronic sleep diaries, and weekly implementation reports. Fidelity was supported through standardized intervention materials, a predefined weekly review structure, and documentation of any tailoring or reminders provided by the research team.

12*	How well (actual)	If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.	The eligibility, enrollment, consent and retention rate were 45.5%, 26.1%, 57.1% and 100% respectively. In the intervention group (n=10), the overall intervention completion rate was 80%, and 90% of participants completed at least 75% of the intervention content. Mean scores for perceived feasibility, acceptability, and appropriateness were high at 16.40±1.90, 16.60±1.90, and 16.80±1.69, respectively. Backend usage data indicated high adherence to the psychological distress support package and the sleep behavioral regulation module. Brief post-intervention feedback indicated that the microinterventions were practical, easy to use, and low burden. Compared with the control group (n=10), the intervention group had lower psychological distress scores than the control group at T1, T2, and T3, with adjusted between-group differences of −2.22, −2.12, and −2.12, respectively. Sleep disturbance scores were lower in the intervention group at T1 and T2, with adjusted differences of −3.49 and −1.99, respectively. Anxiety symptoms showed exploratory between-group differences at T2 and T3, with adjusted differences of −0.80 and −3.20, respectively. No significant between-group differences in depressive symptoms were observed at post-baseline time points.