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Background

- Insomnia affects **30–60%** of patients with cancer (1). Cognitive behavioral therapy for insomnia (**CBT- I**) is the **gold-standard treatment for insomnia**. However, the uptake of CBT-I in routine care remains low (2)
- Technology can be leveraged to facilitate the access and delivery of CBT-I**. Nevertheless, adherence rates to online self-help interventions seem low (50-60%), and is associated with reduced intervention efficacy (3)
- The **Sleep-4-All-2.0 study** evaluated an approach that combined a validated online CBT-I program to a phone-based guidance with a CBT psychologist

Objectives: This study assessed:

- whether this device showed higher adherence and insomnia remission rates than historical online programs without professional support
- healthcare professionals' (HCPs) perceptions about this online intervention

Methods

- Prospective, quantitative, qualitative multicentric single arm study**
- 348 adult cancer patients from 3 French cancer centers** (Gustave Roussy, Institut Régional du Cancer de Montpellier, Centre Léon Bérard) were included : **79% were women, 59% had breast cancer and 68% were undergoing treatment**
- Quantitative data** collected before (week 0) and post intervention (week 6, 12 and 24)

Online Questionnaires	Week 0	Week 6	Week 12	Week 24
Socio-demographic, clinical variables (ad hoc), symptoms (ESAS)	X			
Insomnia Severity Index (ISI), sleep perception (ad hoc)	X	X	X	X
Adherence (5 to 6 modules completed - full connections)		X	X	X
Behavior change (application of program techniques – ad hoc)		X		

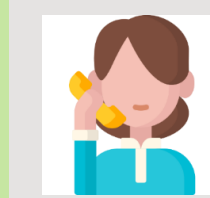
- Statistical Analysis:** Descriptive statistics were used for the online questionnaires.
- Qualitative data** collected with **2 online focus groups** with **19 HCPs volunteers** from the 3 French cancer centers (7 physicians, 5 advanced practice nurse, 2 healthcare managers, 2 psychologists, 1 nursing assistant, 1 nurse, 1 physiotherapist ; 14 females and 5 males)
- Descriptive inductive thematic analysis** was used for the focus groups

Intervention and Study Design



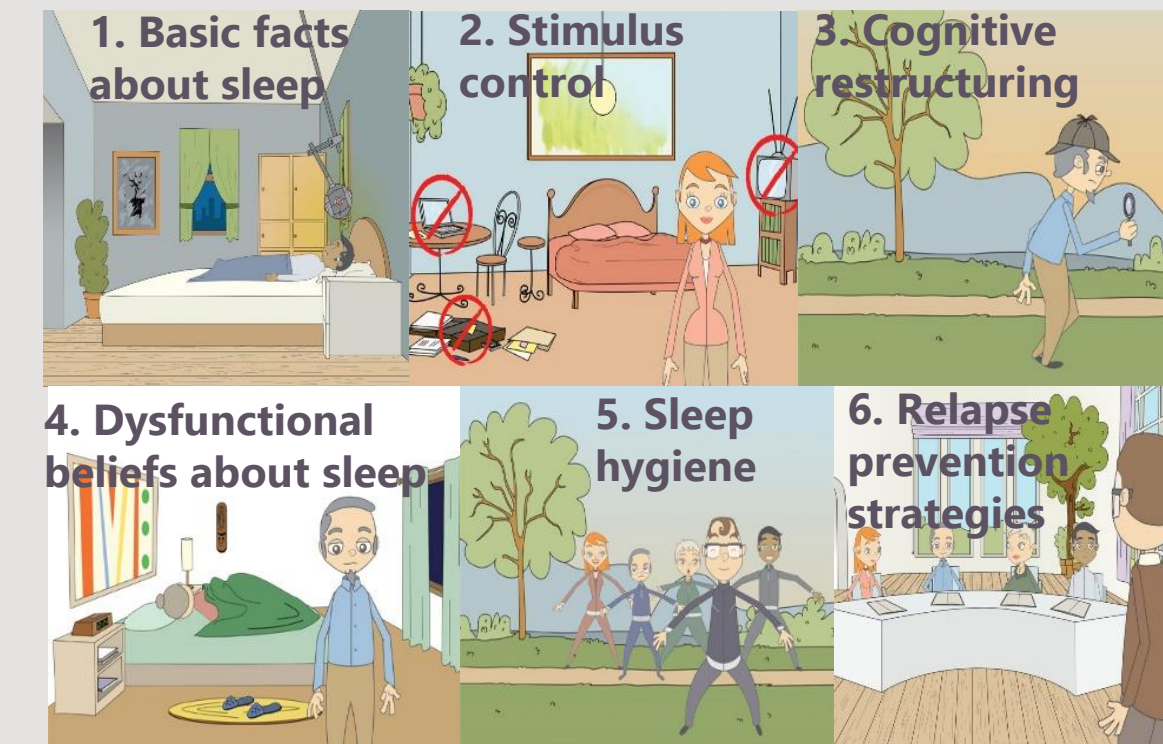
Online program: INSOMNET

- Validated web-based CBT-I** (4)
- 6 modules:** each comprising a video segment (cartoon) and a booklet
- Interactive functionalities** on the website (daily sleep diaries, automated e-mails, individualized sleep window...)

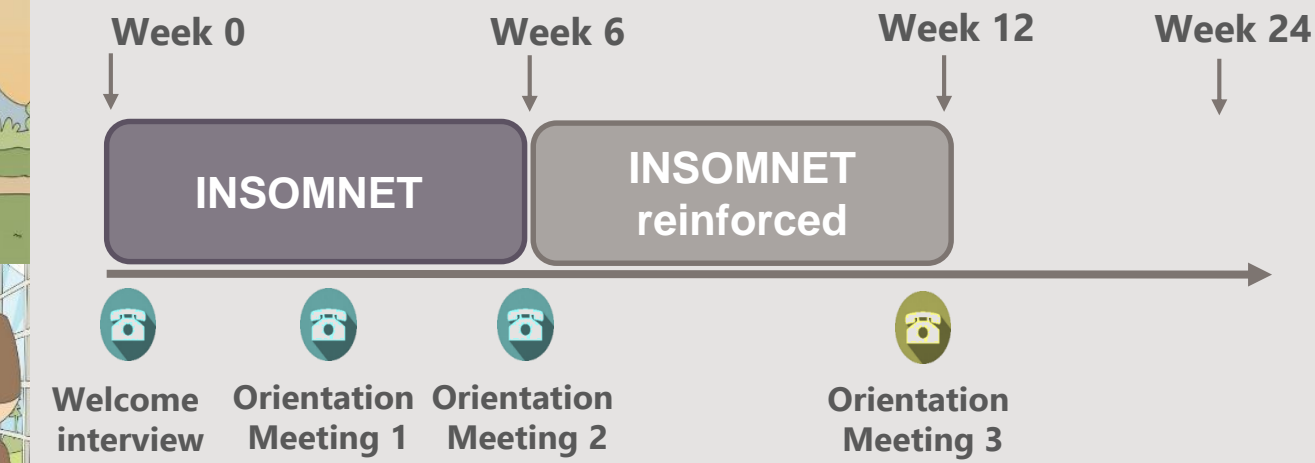


Phone-based guidance with a psychologist: 3 to 4 orientation meetings

- Welcome interview:** motivational interview
- Orientation meetings 1 / 2 / 3:** evaluation of insomnia and program follow-up difficulties, personalizing techniques, evaluation of the need for additional help



INSOMNET Modules

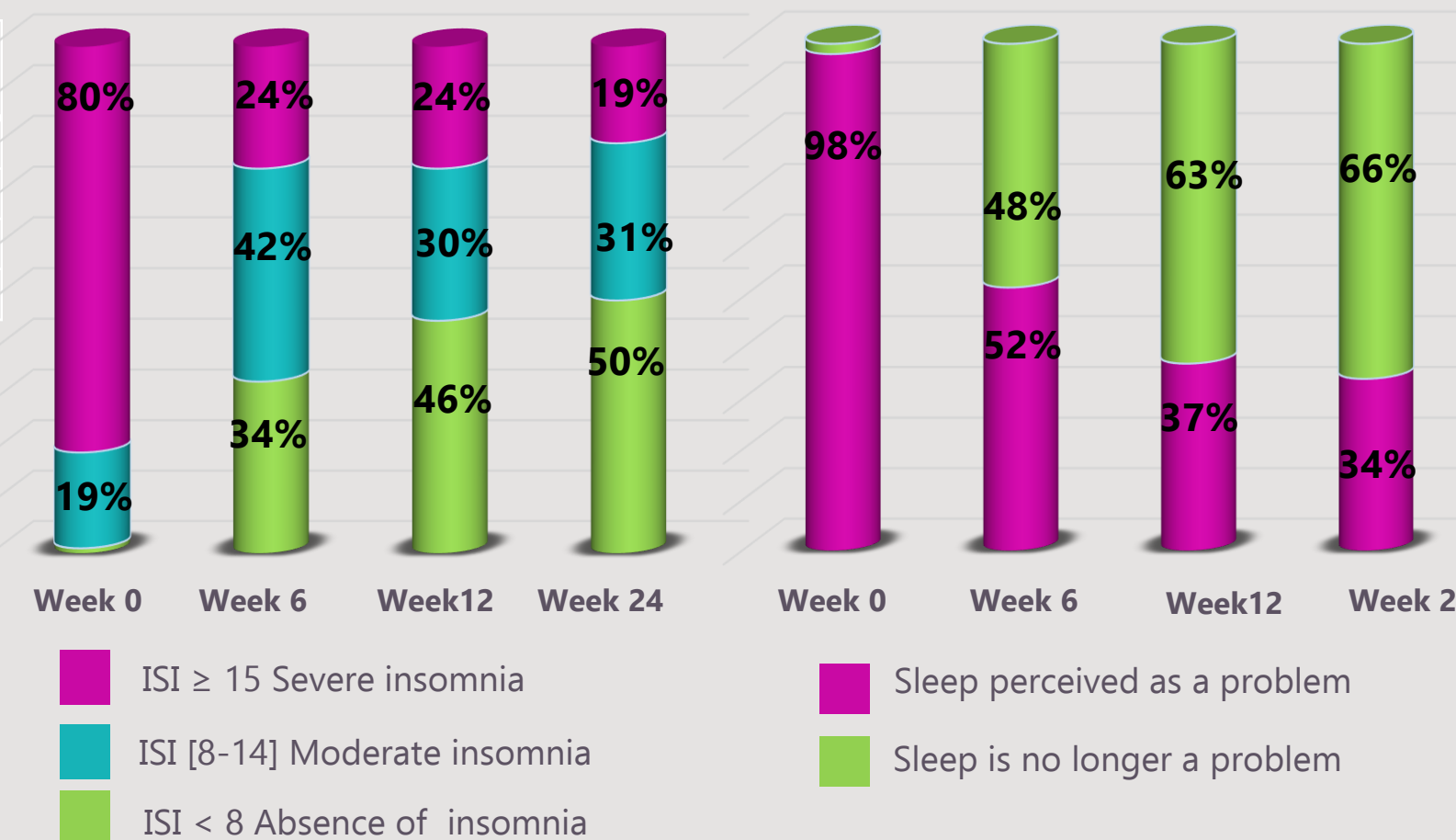


Results

Quantitative Data : Adherence and Insomnia Remission

- 89%** (n=310) initiated Insomnet
- 74%** were adherent
- 79%** have applied behavioral techniques

Evolution of insomnia (ISI scores) Evolution of the sleep perception



Qualitative data : HCPs' Perceptions identified in Focus Group (n=19)

- Barriers to implementation:** Threat to the patient-HCP relationship / Forgetting patient's particularities / HCPs' lack of knowledge / Financial cost
"The decline in medical workforce demographics and institutional problems, remote interventions ultimately result in a loss of the possibility of having human contact." / "It depends on the patient we have in front of us" / "We're afraid sometimes, when we enter this field of non-drug intervention, that it's not recognized, that we might also be demonized a bit"
- Levers for implementation:** Real benefits for patients / Confident HCPs / Preserved relationship / Institutional innovation
"If there's research showing the benefits, well, it's something that will be integrated, almost trivialized, that will become part of everyday life like pain management" / "The relationship actually comes from the people we will direct to this device, they are people we will have already seen beforehand, for whom we will have detected a disorder, so I think the relationship will be there"
- Professional involvement in implementing:** To reorient and maintain the link

Conclusions

- A combination of online CBT-I with phone-based guidance with a psychologist showed satisfactory rates of program adherence, behavioral change and insomnia remission with long lasting benefits**
- HCPs recognized the interest of an increased access to an effective non-drug intervention for insomnia with an online program, but it cannot replace the relationship between patients and HCPs**
- All HCPs must be informed and trained to redirect patients to this online program**

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