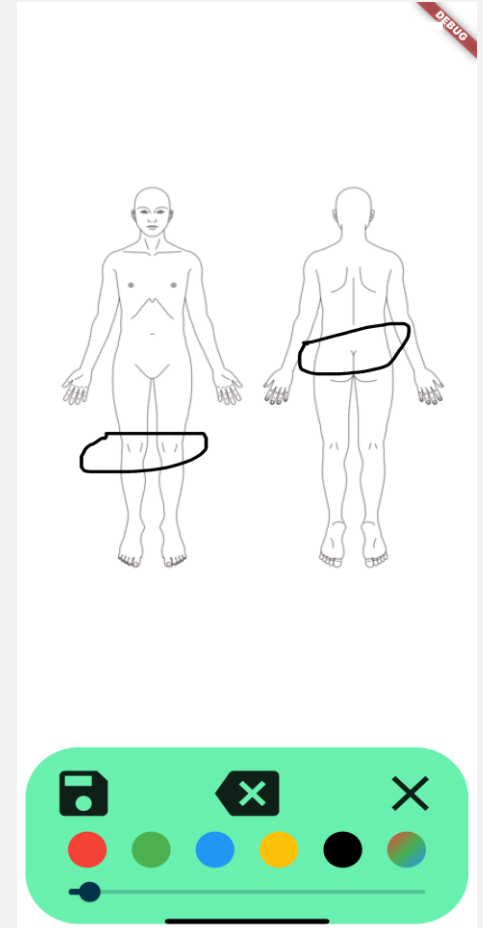
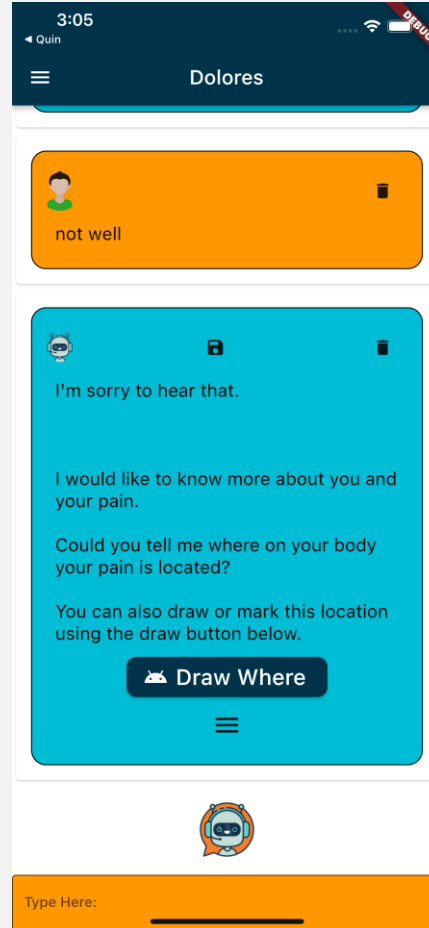




Dolores: A mobile chatbot for people living with chronic pain

Dr. David Ireland





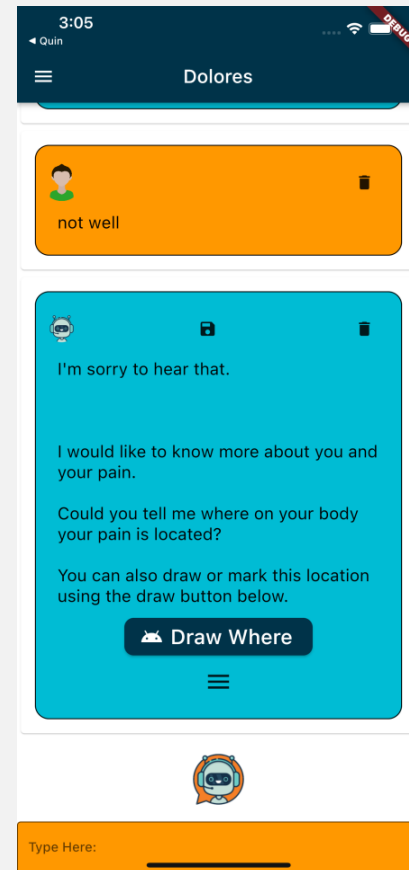
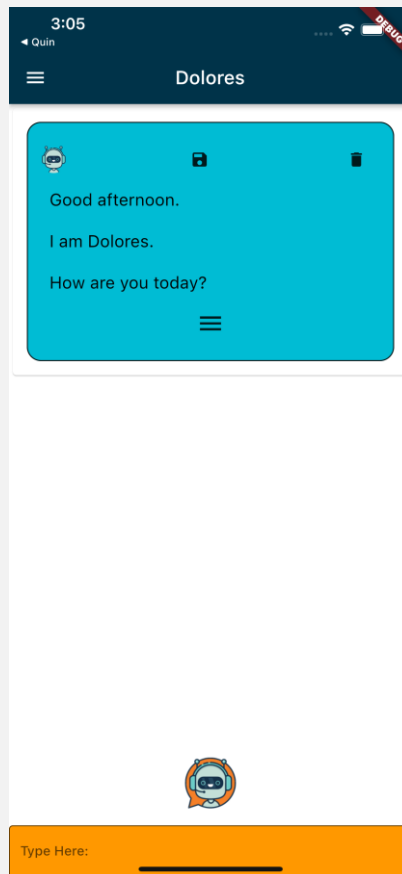
Chronic Pain

- 20% of Australians living with chronic pain.
- Complex, common and expensive health problem.
- Main reason people seek medical care.
- Limited pharmaceutical treatment for long-term management.
- Most Interventions are about management:
 - Behavioural changes
 - Education
 - Therapist relationship (*data*)
 - Medication management



Dolores Chatbot

- Conversation agent
- Prompts the user constantly
- Adjustable language responses
- Multi-modal input
- Undertakes pain history
- Answers questions
- PDF report creation
- Apart of Pain ROADMAP platform





Dolores Brain

- Knowledge-base & conversation flow derived by speech, physio & occupation therapists
- Topics include:
 - Understanding pain
 - Exercise
 - Managing flare-ups
 - Preventing flare-ups
 - Diet
 - Medications
 - Side effects
 - Mental Health
 - Support groups
 - Talking to therapist
 - Alternate therapies
 - Emotion Regulation



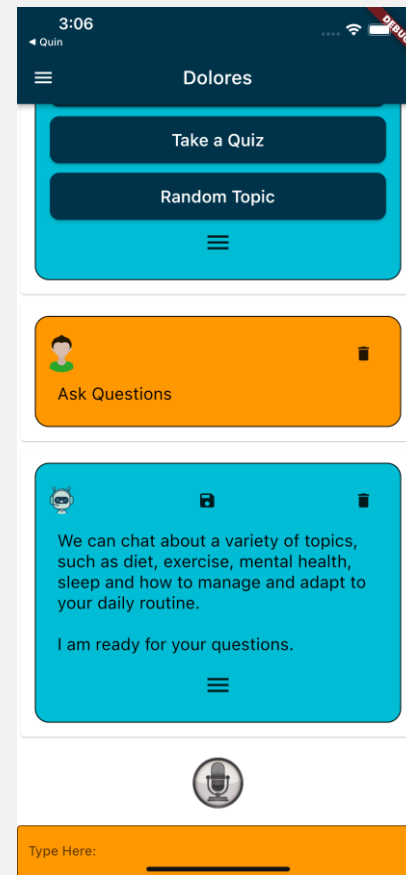
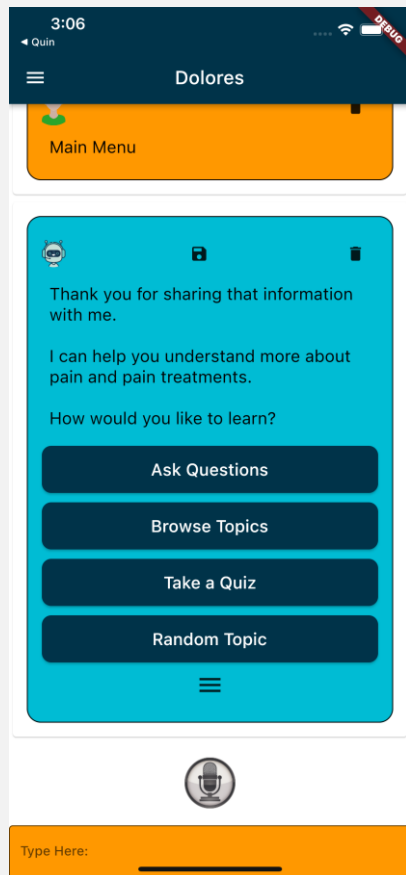
What is Mindfulness?

User	Response
Adolescent	You can learn how to become more aware of your thoughts and feelings. This is a skill called mindfulness ...
Young Adult	Mindfulness is a skill you can learn to help notice thoughts and feelings in order to feel comfortable ...
Adult	Mindfulness is about being present in the moment, accepting your thoughts and feelings ...



ChatGPT Differences

- Designed by/for clinicians
- Doesn't "*hallucinate*"
- Has episodic memory
- Personalised
- Real time learning
- Auxiliary resources
 - Sentiment analysis
 - Health ontologies



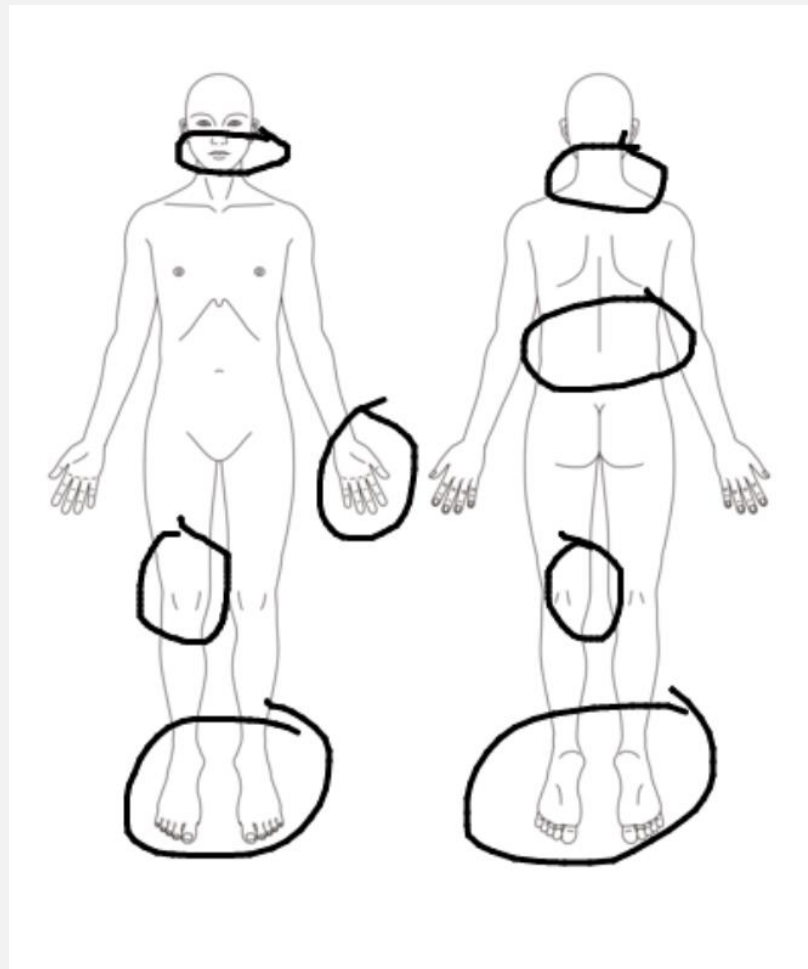


Pilot Study

- Tested with adolescents, young-adults & adults
 - (n= 20/20/20)
- Investigated acceptability, feedback, *language of pain*
- Tess Cramond Pain and Research Centre (Brisbane)
 - Outpatient clinic
 - Interventions, education & management programs

Pain History

- Location
- Duration
- Sensory Description
- Impact on daily life
- Current understanding of pain
- Perceptions towards treatment





Pain Description



Drawn on 13/07/2021 from chat session BHUCT

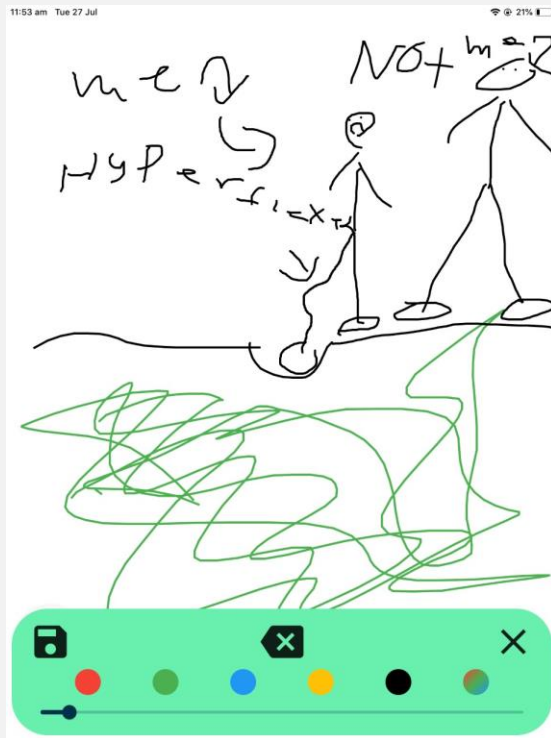


Pain Description





Pain Description



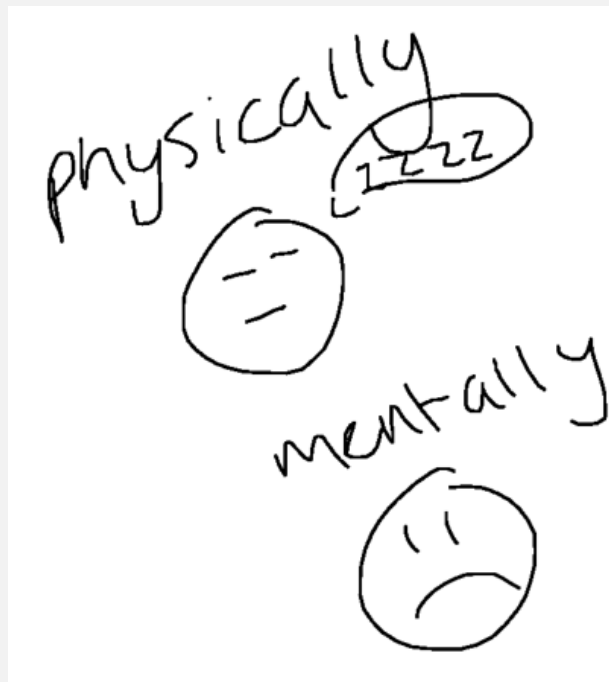


Daily Impact



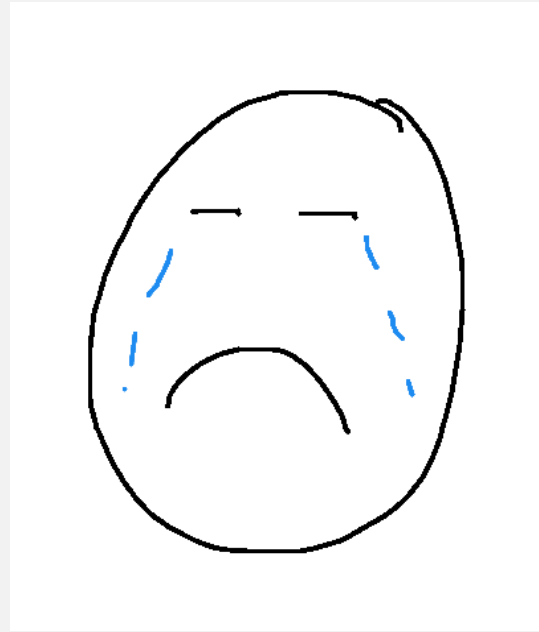
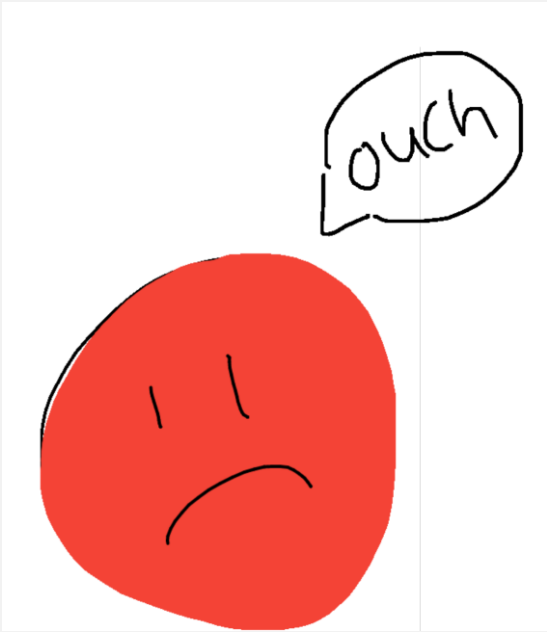


Daily Impact





Daily Impact



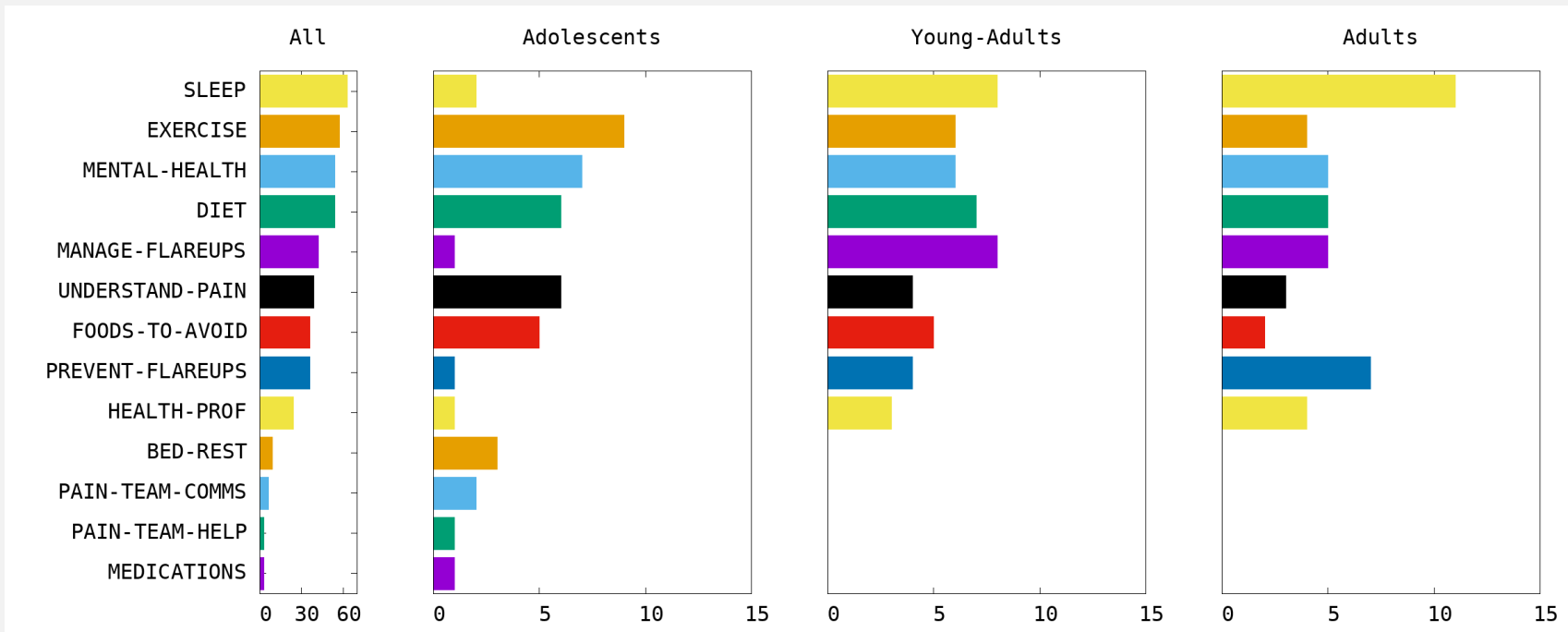


Education Session

- Initiated by Dolores
- Browse Topics
- Quizzes
- Doodles
- Question Asking
- Videos, Pictures, Information sheets
- Entire session exportable to PDF



Education Session





High Acceptability

- Engagement
- Perceived value
- Usability
- Accuracy
- Responsiveness
- Overall quality



Future Work

- Long-term engagement studies
- Image processing / recognition (language in the doodles)
- Individuals who are non-verbal
- Multiple trials planned forthcoming with PAIN Roadmap platform



Australian e-Health
Research Centre

Thank you

Health and Biosecurity

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