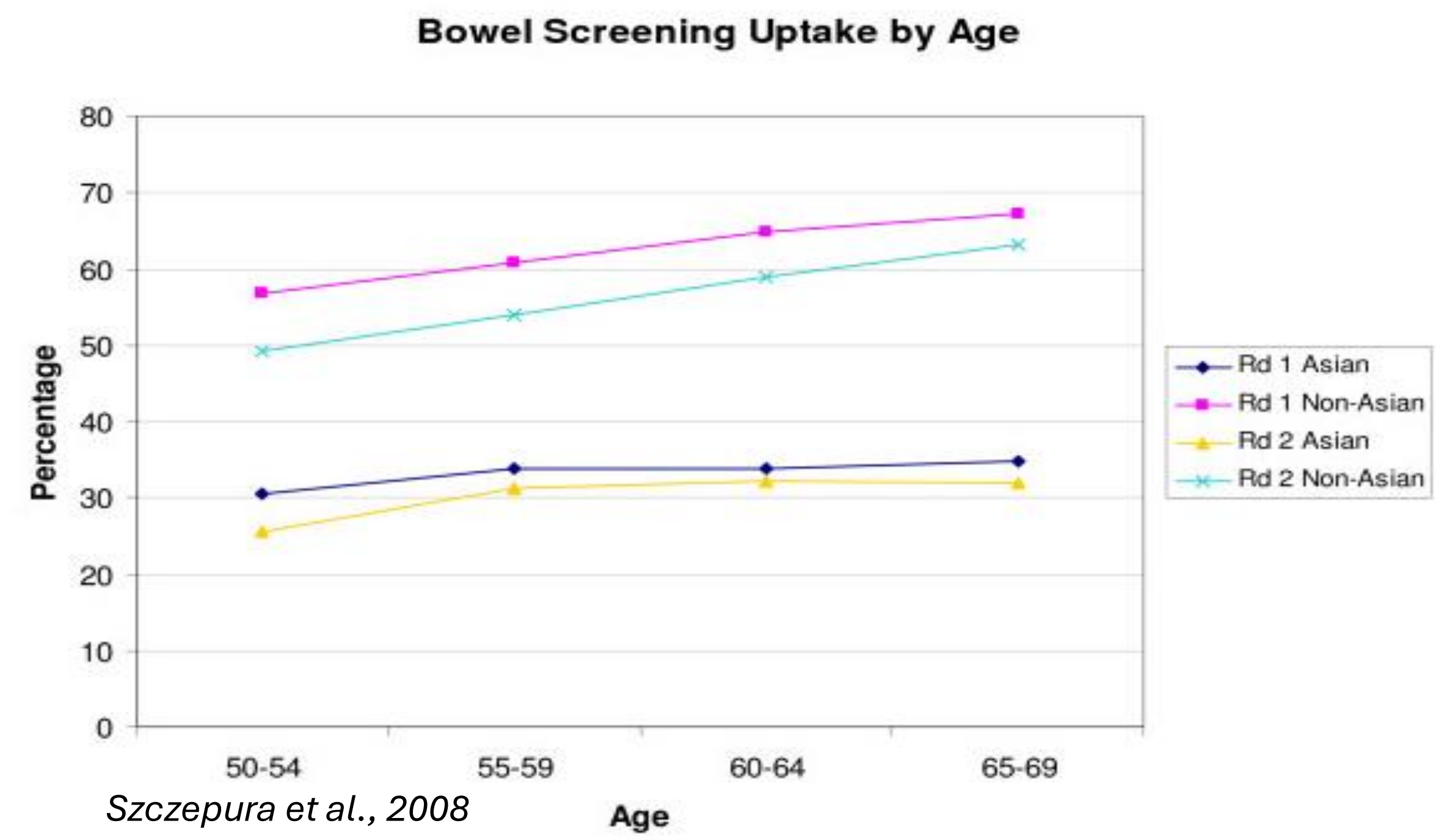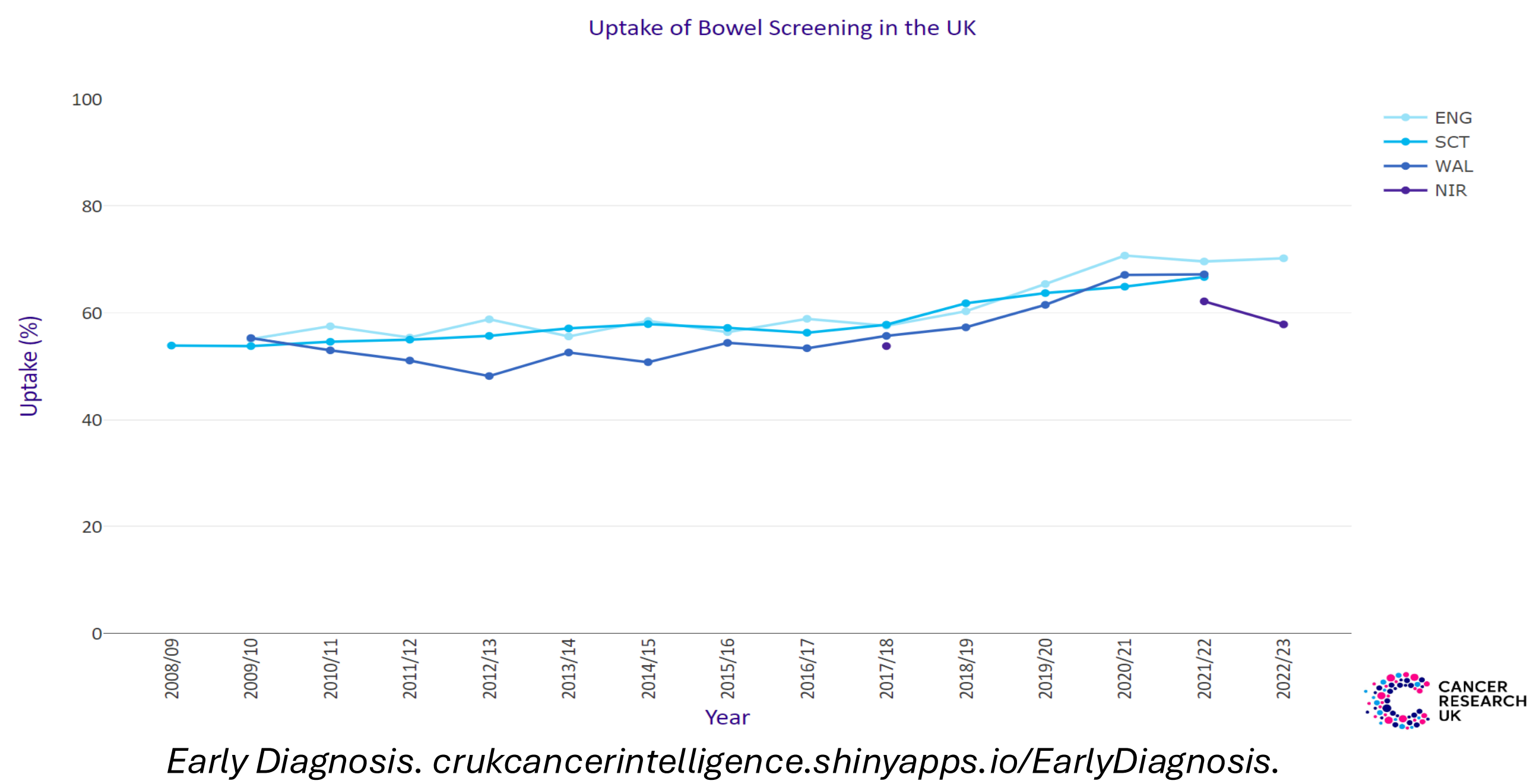# Developing Multimodal Data-driven Art-inspired Bowel Cancer Screening Promotion Images: An International Pilot Study

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Background

Colorectal cancer (CRC) is the fourth most common cancer and the second leading cause of cancer deaths in the UK. Despite its benefits in reducing mortality, CRC screening uptake remains low, especially among ethnic minorities and individuals of lower socio-economic status. While promotional messages can boost screening rates, their specific impact on these groups is unexplored.

Uptake of Bowel Screening in the UK
Early Diagnosis. crukcancerintelligence.shinyapps.io/EarlyDiagnosis.

Bowel Screening Uptake by Age
Szczepura et al., 2008

Research Objective

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This project aims to identify the most and least effective elements in colorectal cancer screening promotion images, focusing on ethnic minorities in the UK and individuals in India. Through interviews, survey ratings, and eye tracking, we will assess existing CRC screening promotion images to understand which elements work best and which do not. This data will then inform the creation of optimized CRC promotion images using graphic design and generative AI.

Methods

An online survey of 17 participants (UK = 8, India = 9) rated 58 globally curated cancer screening promotional images for their effectiveness using a thumbs up or down system. Remote interviews further explored perceptions by asking participants what elements could be added or removed to enhance the effectiveness of the images, to describe their ideal image for promoting bowel cancer screening, and to identify cultural elements to include or avoid for greater effectiveness.

Results

Participants preferred images with bright colours, happy families, health professionals, and the test kit. They suggested showing consequences of not screening and providing more information on CRC symptoms. Ethnic minority and Indian participants wanted more images of people resembling themselves. Images featuring toilets, faeces, or the bowel were reported as off-putting.

Liked images:
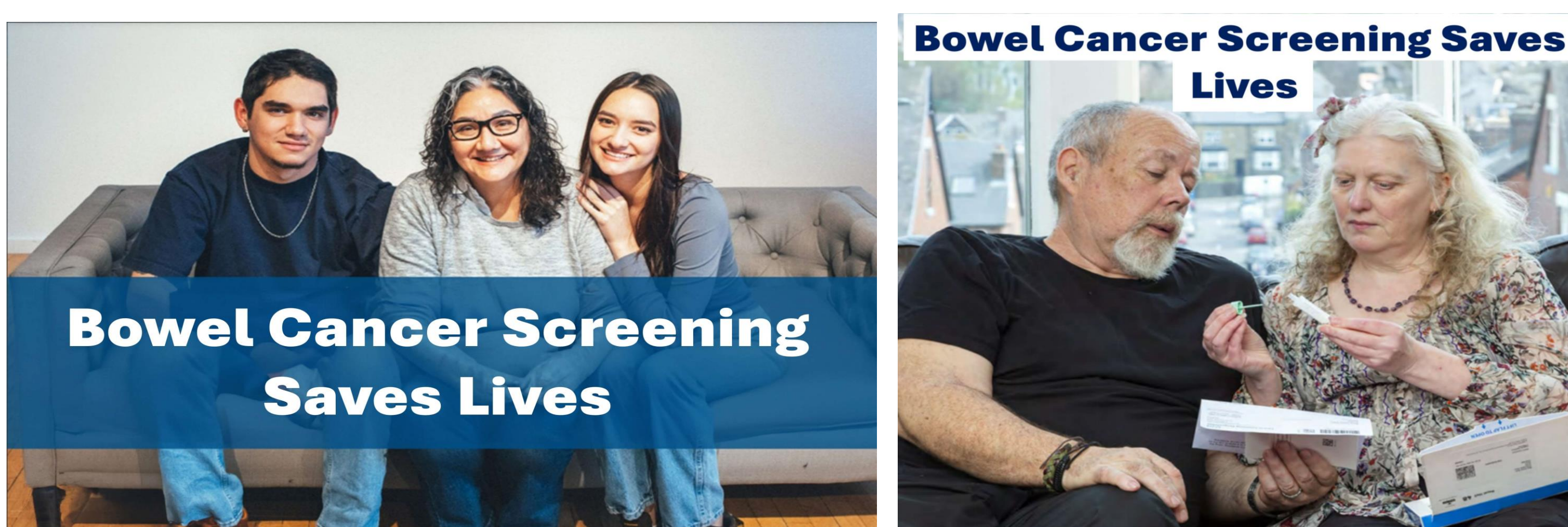
Disliked images:
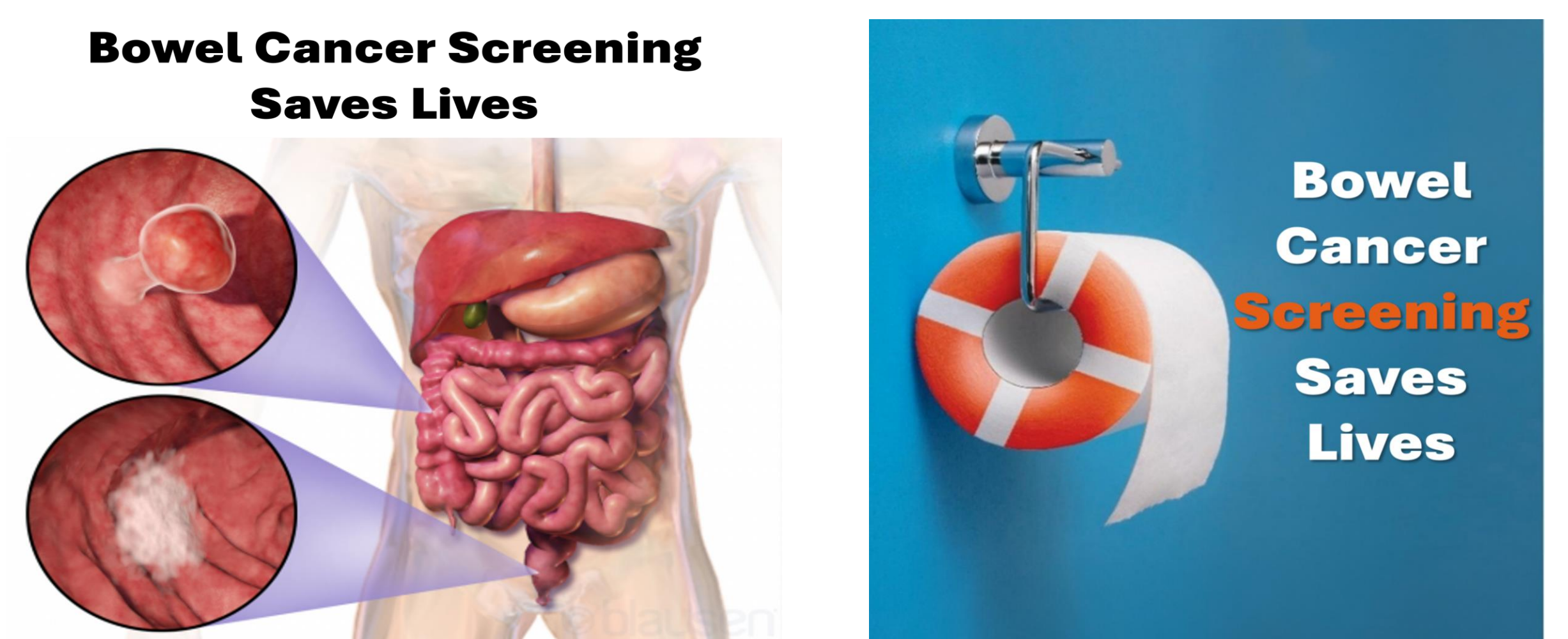
Future Directions

- The shortlisted images are currently being assessed by two different acceptability studies to identify key elements to produce effective promotion images.
- The inputs will be used to create art-inspired and data-driven novel images using graphic design and generative AI
- The acceptability of the newly created images will be assessed by quantitative studies.

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