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A Smartphone-based Mobile Health App to Address the Adverse Effects of Androgen Deprivation Therapy in Men with Prostate Cancer

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Background/Methods

Androgen deprivation therapy (ADT) is a standard treatment modality for patients with advanced or recurrent prostate cancer, and those initiating radiation therapy with unfavorable intermediate-risk or high-risk prostate cancer.

ADT causes metabolic disturbances and changes in body composition which ultimately lead to increased risks of diabetes, cardiovascular disease, and even death. We developed and tested a mobile health app to address metabolic and cognitive effects for men treated with androgen deprivation therapy (ADT) for prostate cancer. Pilot testing took place in March 2019.

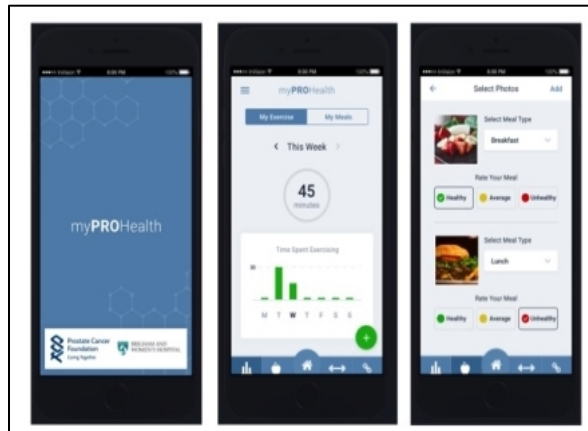
A sample of 5 physicians who treat prostate cancer, and 5 patients initiating ADT, aged 45-75 were recruited for a focus group discussion based on availability and willingness to participate. A research coordinator followed a pre-established IRB-approved script. Themes were identified through review of transcripts by two independent reviewers.

Results/Conclusions

The current version of the mobile app requires patients to record and track their daily exercises and food intake.

The app generates a line chart of their average exercise time per week, as well as a pie chart of the proportion of healthy food.

Researchers can perform survey assessments as well as chart reviews, which can be merged with in-app data.



Semi-structured interviews revealed themes of appreciation for the holistic care of the patient and ease of use.

Providers felt that the app was easy to use, but several raised concerns about usability among men who do not commonly use smartphone apps.

Participant Reflections on App Usage

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| Patient Knowledge | "There are so many options, wow – I didn't realize that things that I do on a daily basis would be considered exercise. My wife would be so happy to hear that! What else did you ask? If it was intuitive? Yes, it is clear and intuitive to me" |
| Patient Appreciation | "No, this is great. It shows that the providers care and that we are more than a number to them I think" |
| Patient Struggling | "To be honest I don't think this is intuitive. It might just be me but it's tough for me to understand" |

Physician Reflections on App Usage

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|-----------------------------|--|
| Undermining Patients | "I think my con is that, I don't think older patients, or any patients with prostate cancer will understand how to use this app" |
| Fear of Technology | "I think patients will struggle with this. I think that we need to be careful with technological...interventions like this because it may make them more stressed" |
| Ageist Bias | "The application is really well designed and is...generally pretty intuitive. But I worry that the patients won't actually use it. It might be hard for older patients, and most prostate cancer patients are above the age of 45" |

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