

MIDLIFE AND BEYOND MOBILE MEDICAL APP IN CLINICAL PRACTICE

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ABSTRACT

Introduction: *Medical apps for healthcare has become a focal point of innovation, in particular those apps which can be used by doctors as part of prevention or treatment. This will result in improved health measures and a more efficient healthcare system*

Aim objectives: *To assess the role of Midlifeandbeyond app its functionality and ease to use. To assess the use of medical app in determining various risk assessment and how medical app is useful in taking decision*

Methodology & Research design: *Prospective cross sectional observational multicentric study was conducted at obstetrics& gynecology department of Saveetha and Stanley Medical College. After informed consent and after ethical clearance, 254 women between 40 years to 70 years were included, were perimenopause and menopause women who attended menopausal clinic. Midlifeandbeyond app developed for Indian Menopause society was used to assess Menopausal Rating scale and risk assessment for Breast cancer, Cardiovascular risk, Fracture risk and sarcopenia risk assessment. Doctors used the app were interviewed about ease of its use. Reports generated through app was saved in system and data were analysed to assess the utility of Midlifeandbeyond mobile Medical app to take decision on the management of women*

Results: *In the study 47.6% women were between 40-50years,24.5% between51-60years 27.9% of them 61-70 years Midlifeandbeyond app was used with ease and data were saved in 100%. Menopausal symptoms were analysed by app were Somatovegative symptoms in 55% of women, Psychological symptoms in 16.5% and Urogenital symptoms in 28.4%. Risk assessment analysed by app were Breast cancer risk were low in 52%of women, Medium in 44% and high in 4%, Cardiovascular risk less than10% in12%, less than 20%in 44%, between 20-30% in 28%,30-40%risk in 14% and more than 40% in 2% of women. Osteoporosis risk low in 24% medium risk in 58%and high risk in 18%. Sarcopenia risk was negative in 68% and positive in 22 %. Treatment decision taken by risk assessment were counselling in 26% of women, medication given in 52% and22%referred to specialist*

Conclusion: *Midlifeandbeyond app was user friendly to assess peri and postmenopausal health issues and by assessing various risk assessment it will prevent preventable disease*

Keywords: *Midlife and beyond app, Menopause, Menopause rating Scale, Risk Assessment, Medical mobile app*

INTRODUCTION

Communication technology have spread to medicine especially through user friendly Android phone (1). Apps have become ubiquitous in many aspects of our lives over the past five years, fueled by the widespread availability of tablet computers and smartphones. For professional use medical app is expanding (2) Medical apps for healthcare has become a focal point of innovation, in particular those apps which can be used by doctors as part of prevention or treatment regimens and promoting health (3). The doctors can diagnose and treat the patients by these app and is user-friendly. To monitor the development of diseases and improve health care outcomes medical apps are useful (4) With lower-cost access to broadband Internet, improvement of supporting services, and increased use of smartphones there is a boom in mobile health is possible.(5) Smartphone medical apps can have a variety of features including visually engaging design, video and audio capabilities, unrestricted text capabilities(6) Medical apps can play a larger and more meaningful role in the prevention and treatment of disease resulting in improved health measures and outcomes, and a more efficient healthcare system. People use health apps to monitor their own health conditions and to manage their health (7) Physicians can see the potential benefits of mobile healthcare apps but remain wary of formally recommending apps without evidence of their benefit. Over time, the app maturity model will see apps progress from being recommended on an ad hoc basis by individual physicians, to systematic use in healthcare, and ultimately to an end goal of being a fully integrated component of healthcare management

Indian women attain menopause at early age (8) As longevity of women is increasing and women are spending one third of their life postmenopausal period Health care of menopausal women is utmost important because menopause is biological marker for chronic disease. (9). Due to hypoestrogenic state the risk for fracture, cardiovascular risk, Sarcopenia and Metabolic syndrome is Increased. All these contribute to public health problem. Menopause women must make an informed decision and Healthcare

professionals must be in a position to support (10). To assess Menopausal rating scale and their risk for breast, cardiovascular, fracture sarcopenia a comprehensive health assessment is essential. Hence Midlifeandbeyond medical mobile app will be an useful tool

METHODOLOGY: It was a Prospective cross sectional observational multicentric study conducted at obstetrics & gynecology department of Saveetha and obstetrics and Gynecology department of Stanley Medical college. After informed consent and after ethical clearance, 254 women between 40 years to 70 years were included, Inclusion criteria will be perimenopause, early and late menopause women with and without menopausal symptoms who attend menopausal clinic. Exclusion criteria will be those women unable to give proper history and those who are not willing to participate in the study. Midlifeandbeyond Medical mobile app developed for Indian Menopause society-IMS in Android platform was used to assess Menopausal rating scale and risk assessment for Breast cancer, Cardiovascular risk, Fracture risk and sarcopenia risk assessment. Doctors using the app will be interviewed about ease of its use, information, instructions, photos incorporated whether it was useful. All reports generated through was saved in system and Data was summarized and analysed to assess the utility of Midlifeandbeyond Medical mobile app to take decision on their management and referred to specialist when required

RESULTS: In this study women included were between 40years to 70years.47.6% were between 40-50years,24.5% were between 51-60years and 27.9% were between 61-70years(Table1). Doctors used Midlifeandbeyond mobile medical app were interviewed to assess the ease of medical app use(Fig 1). Text used was easy to read and 98 % of them agreed to it, and 97% of Doctor agreed that photos were helpful to take anthropometry measurements. Instructions to use and Data saving was very easy and 100% of Doctors agreed to it. Menopausal symptoms were analysed in women attending Menopause clinic with the Midlifeandbeyond mobile app which calculate the severity and segregate the women based on symptoms into Somatovegatative, Psychological and urogenital. In the study 55% of women had Somatovegatative symptoms, 16.5% had Psychological symptoms and 28.4% had urogenital symptoms. (Fig2) Various risk assessment was calculated using

Midlifeandbeyond mobile app, Breast cancer Risk was low in 52%, Medium risk in 44% and high risk in 4%. Cardiovascular risk assessed by WHO chart less than <10 risk in 12% less than <20%risk in 44%. between 20-30%risk in 28%, risk between 30-40% in 14% and more than 40% in 2%(Table2) . Osteoporosis risk based on OSTA calculation by Midlifeandbeyond mobile app. Osteoporosis was seen in 24%in low risk, Medium in 58% and high in 18%. (fig3) Sarcopenia was calculated by SARC 5-F method by Midlifeandbeyond mobile app. In 68% it was Negative and Positive in 22%(Table2). Doctors taken management decision based on risk assessment. Counseling was offered to26%, Medication was given in 52% and referred to different specialist in22%(Fig 3)

DISCUSSION: D L Kuh et al (11) mentioned that Midlife health of the women influence of the menopause and their quality of life later on hence Midlifeandbeyond mobile medical app based on the assessment of mid-life and menopause will be a boon to women's health . Menopause is a physiologic does cause symptoms and management is highly individualized mentioned by Kothari (12) Midlifeandbeyond mobile medical app will assess Menopausal symptoms and group them into Somatovegatative, Psychological and urogenital. Mobile health app research is a new and promising field globally. Variety of things can be done by apps, some meant for patients those living with long term condition, some meant for Doctors to maintain health records and the ability to decide the treatment (13) Midlifeandbeyond mobile medical app is meant for Doctors to assess midlife and menopause women's health. Charlene et al in the study "Well Doc mobile diabetes management" (14) had provision to refer patients based on the data which is similar to Midlifeandbeyond mobile medical app. Steven Coughlin et al (15) in the study "Mobile Phone Apps for Preventing Cancer Through Educational and Behavioural Interventions" meant for prevention of cancer and Midlifeandbeyond mobile medical app is meant for promoting health in midlife and Menopause women .

CONCLUSION

Midlifeandbeyond mobile Medical app is an easy way to maintain health records of midlife and beyond women's health and ability to save data and retrieve them is useful during follow up.

It is a simple tool to assess risk assessment and based on that if necessary can be referred to specialist. It can be utilized in health care, to support midlife and menopause women. Mobile phone apps facilitate relationship between patients and professionals. Midlifeand beyond mobile medical app is easy, handy, comprehensive tool for Doctors to assess the health of midlife and menopause women to predict their various risk factors ,promote their health by offering them appropriate management

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ACKNOWLEDGEMENT

I thank our Director Dr. Saveetha Rajesh and Dean Dr. Damotharan for the constant support and encouragement in conducting the study and doctors participated in the study from Saveetha and Stanley medical college

RESULTS:

Table1: Age Distribution:

40-50years	47.6%
51-60years	24.5%
61-70years	27.9%

Fig 1: Doctors Satisfaction with &use of Midlifeand beyond mobile app with ease

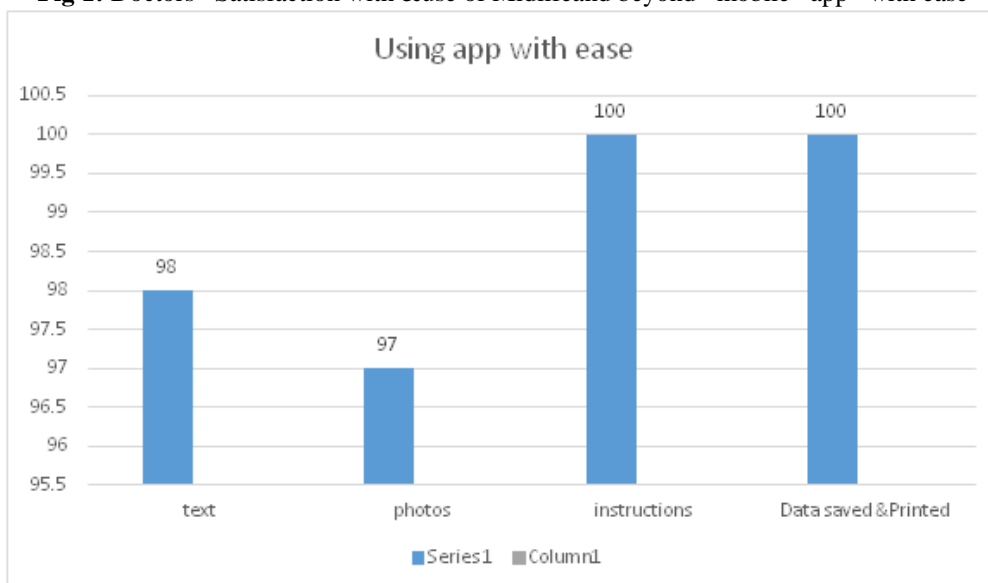


Fig 2: Menopause Symptoms Analysed using Midlifeandbeyond mobile medical app

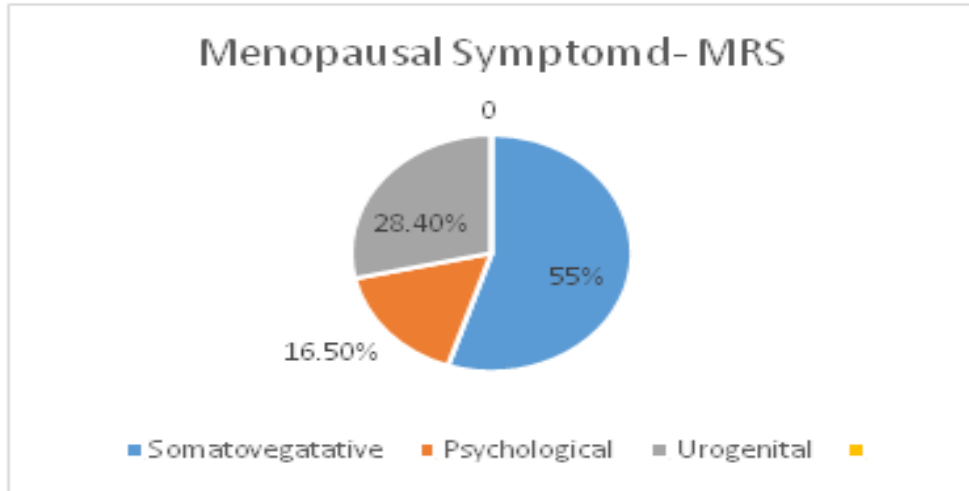


Table 2: Risk Assessment using Midlife mobile medical app

Breast cancer Risk	Low 52%	Medium 44%	High 4%
CVS (WHO)	<10% - 12% <20% -44%	20-30% - 28% 30-40% - 14%	>40% - 2 %
Osteoporosis (OSTA)	Low-24%	Medium -58%	High – 18%
Sarcopenia	Negative- 68%	Positive -32%	

Fig 3: Management decision based on Risk assessment by Midlifebeyond mobile medical app

