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## Diabetes self-care practice and its associated factors among diabetic patients: In public and private primary level health care, Addis Ababa, Ethiopia, 2015

**Berhan Tassew**

Addis Ababa University, Ethiopia

Diabetes mellitus as one of the rapidly increasing non-communicable diseases in sub-Saharan Africa currently, requires continuous medical care and mainly patient's life time self-care practice to prevent acute and chronic complications. Approximately 95% diabetes' management is self-care practice. Various factors influence one's ability to perform diabetes self-care and these factors are not typically stable for all patients. Despite the significance of identifying these factors for health care providers to individualize clinical approaches, it is important to assess patients' self-care in these primary levels of health care in both private and public sector as these are the first line of contact to the health care system. Facility based, cross-sectional study design was conducted from February to March 2015. A total of 595 diabetic patients were selected by systematic random sampling method from both public health centers and private clinics in Addis Ababa. Data were collected using an interviewer administered pre-tested questionnaire. Descriptive analysis was done. Bivariate and multivariate logistic regression was also done to identify factors that were associated with diabetic self-care practice. Among 595 respondents about 311 (52.3%) had good diabetic self-care practice. Among the participants who knew their fasting blood glucose (73%), (89%) had inadequate blood glucose level. Majorities were on oral medication (72%), 10% of respondents were member of a Diabetic association, 53% had followed up at public health centers. About 51.9% didn't know their diabetes type, among those who knew 18% type I & 30% type II. The presence of co-morbidities (AOR=1.68, 95%CI; 1.07-2.65), having glucometer at home (AOR=2.01, 95%CI; 1.19-3.38), diabetic association membership (AOR=3.02, 95%CI; 1.30-7.04), follow up in private clinics (AOR=3.05, 95%CI; 1.55-5.97), treatment satisfaction (AOR=1.69, 95%CI; 1.08-2.59) were significantly associated with good self-care practice. Advocating and empowering patients regarding the importance of diabetic self-care practice and diabetic association membership is highly recommended.

[berhan\\_tassew@yahoo.com](mailto:berhan_tassew@yahoo.com)

## A study on using photoplethysmographic (PPG) signal as a non-invasive screening device of type 2 diabetes mellitus

**Danushka N**

University of Colombo, Sri Lanka

Diabetes mellitus is a non-communicable disease, increasing its prevalence day by day becoming a heavy burden to the individual and to the country. It carries high morbidity and mortality mostly at later stages. Most patients are asymptomatic at early stage of the disease. Most clinicians ask for fasting blood sugar or random blood sugar levels as a screening method for diabetes. Taking blood samples carry risk of the procedure and it will cause pain to the patients which they hesitate to do. Study on variations of wave form in diabetic patients aged 50-65 years was done. Using non-invasive PPG signal, blood samples were taken at finger tip. Nine patients with isolated diabetes (i.e. Non-hypertensive, non-dyslipidaemic, no ischaemic heart disease) who were on regular antidiabetic treatment and 11 non-diabetic (with neither hypertension, dyslipidaemia nor ischaemic heart disease) aged 50-65 years females were selected from NHSL (National Hospital of Sri Lanka) and Sri Jayawardanapura Hospital. They were interviewed and their blood flow was recorded using PPG signal for 5 minute duration connecting the probe to the index finger. Standard indices of wave form were calculated during data analysis. Out of 9 diabetic patients, 8 were identified as diabetics by calculating the standard indices of the pulse wave form. Our conclusion is that calculated indices of PPG signal has a sensitivity of over 88% in screening of type II diabetes in females aged 50-65 years.

[danupiti@gmail.com](mailto:danupiti@gmail.com)