Health Inequalities in kiDney Disease: mEeting the urgent need to identify Early disease in high-risk commuNities: (HIDDEN-CKD) – Preliminary results

Agyekum, R[1 & 2], Musomba, R[3 & 5], Griffiths, K[1 & 2], Jain, N[4], Onyango, D[3] & Bramham, K; [1 & 2] King's College Hospital[1], London, King's College London[2], Africa Advocacy Foundation,[3] Kidney Research UK[4], London School of Hygiene and Tropical Medicine[5]

Background

The people disproportionately affected by chronic kidney disease (CKD) are of ethnic minority groups including being three times more likely to develop end stage kidney disease (ESKD) (1) and wait twice longer than people of white ethnicities for transplantation (2).

The proportion of people from ethnic minorities affected by CKD continues to rise (4) and they are less likely to be coded or diagnosed with early disease.

Strategies to introduce CKD detection and prevention in ethnic minorities are urgently needed.

Aims

HIDDEN-CKD explored the feasibility of delivering peer educator (PE) led (3) kidney health screening (urine albumin creatinine ratio (uACR) testing) community events in South-East London to identify early CKD in African and Caribbean majority communities.

Methods

A five-stage approach was co-developed with local communities.

Stage 1: We co-developed culturally appropriate CKD materials including videos of patient lived experience, CKD health promotion flyers and booklets for public and community leaders (Fig 1).

Fig 1- Examples of co-developed material

Methods

Stage 2: Peer educators were recruited and undertook accredited training.

Stage 3: We engaged with local faith and non-faith community leaders to identify testing sites with their support. Stand-alone and community joint events held in African and Caribbean community settings including a 15-minute educational session (English and native language translation) followed by 30-minute question time. We carried out 50 outreach events, partnered with 15 community-based assets.

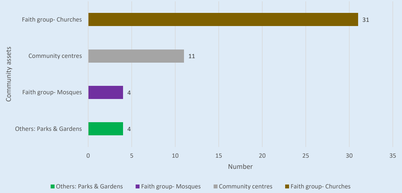

Fig 2: Community assets & number of engagement

Urine Albumin: Creatinine Ratio (uACR) was assessed using semiquantitative strips Healthy.io phone or Siemens Clinitek Status + (Fig 3) and results sheets provided. People were able to have uACR testing if they did not want to participate in the study.

Fig 3: Urine Albumin: Creatinine Ratio (uACR) assessment

Stage 4: Descriptive analysis of demographics, uACR results and follow-up outcomes according to data distribution were reported.

Results

30 peer educators have been trained and recruited 1066 participants; of which 565 (53.0%) and 501 (47.0%) used Siemens and Healthy.io respectively, including 172 (34.4%) smartphone tests taken home. 964 (91.4%) tests were successfully completed of which 565 (100%) Siemens and 406 (81.0%) Healthy.io respectively with peer educators' input. Only 79 (45.9%) of home tests were completed. Demographics are presented in Table 1.

n=964	Frequency
Age, years mean ± SD	50.8 ±14.2
Gender n (%)	
Female	541 (56.1%)
Male	423 (44.8%)
Comorbidities n (%)	
No medical diagnosis	612 (63.5%)
Hypertension	235 (24.3%)
Diabetes Mellitus	40 (4.1%)
Other	36 (3.7%)
Prefers not to disclose	29 (3.0%)
Known Chronic Kidney Disease	12 (1.2%)
Ethnicity; n (%)	
Black African	699 (72.5%)
Black Caribbean	103 (10.7%)
Asian & Asian Other	56 (5.8%)
White British, White Irish & White Other	52 (5.4%)
Black other	22 (2.2%)
Mixed White/Black African	16 (1.7%)
Mixed White/Black Caribbean	10 (1.0%)
Mixed other	6 (0.6%)
Registered with General Practitioner n (%)	596 (99.4%)

Table 1- Participant demographics

Results

Mean systolic BP was 136 ±20.4mmHg (Range 127-243mmHg). Of the participants with stage 1 hypertension, only 45% (145/322) had a medical diagnosis (Fig 4).

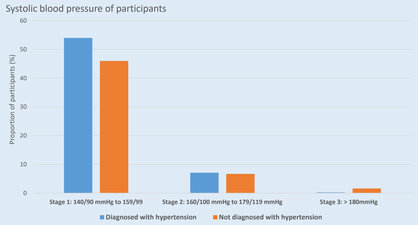

Figure 4: Proportion of participants with diagnosed and un-diagnosed hypertension

373 (38.7%) and **58 (5.9%)** uACR tests were abnormal (ACR>3mg/mmol) and high abnormal (>30mg/mmol) respectively (Fig 5).

214 (34.9%) of participants with no underlying risk had abnormal uACR.

116 (49.3%) of participants with hypertension had abnormal uACR (Fig 5).

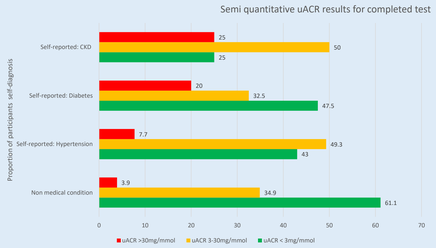

Figure 5: Semi-quantitative uACR tests: Proportion abnormal and high abnormal

Results

People with uACR ≥3mg/mmol were more likely to be older, have higher BMI and higher blood pressure than people with uACR <3mg/mmol (P<0.05).

Uncompleted home test:

Participants with uncompleted home test were of Black African ethnicity 74% (n=69), females 52.6% (n=49) and almost of the same mean age 49.8±14.2 as the participants who completed the test. 75.2% (n=70) self-reported no medical diagnosis (Fig 5).

Conclusion:

Peer-educator led community testing in Black majority communities can identify high rates of albuminuria in many with previously unknown CKD. In this cohort, people of Black ethnicities and those with hypertension were disproportionately affected. This study has highlighted the need for development of community approaches to reducing kidney health inequalities.

The presence and support of trusted peer-educators may help reduce the gap in access and acceptability of CKD screening to detect asymptomatic albuminuria in high-risk groups who have historically been underserved by CKD prevention strategies. Further work is needed to develop this approach to address inequities in CKD outcomes in the UK and beyond.

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1References:) Choi AI, Rodriguez RA, Bacchetti P, et al. White/black racial differences in risk of end-stage renal disease and death. Am J Med. 2009; 2) NHSBT. Organ Donation and Transplantation data for Black, Asian and Minority Ethnic (BAME) communities: Report for 2017/2018; 3) Jain N. Increasing black, asian and minority ethnic (bame) patient & community awareness--using the peer educator model. J Ren Care. 2014