Medication Management Education for Chronic Kidney Disease: Development of a Digital Media Framework

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Background

- Patients with chronic kidney disease (CKD) are burdened with complex treatment regimens; having an understanding of how to manage their medications can lead to improved health outcomes and delay disease progression
- Patients increasingly rely on digital resources for information about their medications, but sifting through these can be overwhelming
- Studies are needed to define the needs and features of a digital tool for education of this patient population

Objectives

1. To determine the baseline knowledge and education needs of patients with CKD at UHN in medication management, for the content and framework development of a digital media education tool **(phase 1)**
2. To conduct an environmental scan in the existing literature, to inform the current state of CKD medication education **(phase 2)**

Methods

DESIGN	• Prospective qualitative study
STUDY POPULATION	• UHN renal clinic patients, Stage 3-5 CKD
METHODS	• Phase 1: Semi-structured Interviews • Phase 2: Literature search ◦ PubMed, EMBASE, OVID, OVID Medline Epub, CINAHL
DATA ANALYSIS	• Thematic analysis (phase 1, using NVIVO12)

Results

Table 1: Participant Characteristics (Phase 1)

Study Participants	n=11
Age	65 yrs. (35-84)
	45.5% female (n=5)
Ethnicity	
Caucasian	45.5% (n=5)
Black	18.2% (n=2)
Asian	18.2% (n=2)
South Asian	9.1% (n=1)
Latin American	9.1% (n=1)
Education	
Primary School	n=1
High School	n=4
College/University	n=5
Graduate School	n=1
CKD	
Stage 4	63.6% (n=7)
Stage 5	36.4% (n=4)
Number of Comorbidities	4 (1-6)
Number of Medications	11 (3-18)
First MCKC visit	June 2017-Feb 2020
Health Literacy: REALM-SF score	6 (7th-8th grade level)
Electronic Device Use	
Personal Computer	n=8
Smartphone	n=7
Cellphone	n=1
Tablet	n=5
None	n=1
Medication Tracking Aids	
Vials	n=5
Dosettes	n=5
Written List	n=1
Electronic List	n=3
Pharmacy List	n=1

Figure 1: Participant Themes (Phase 1)

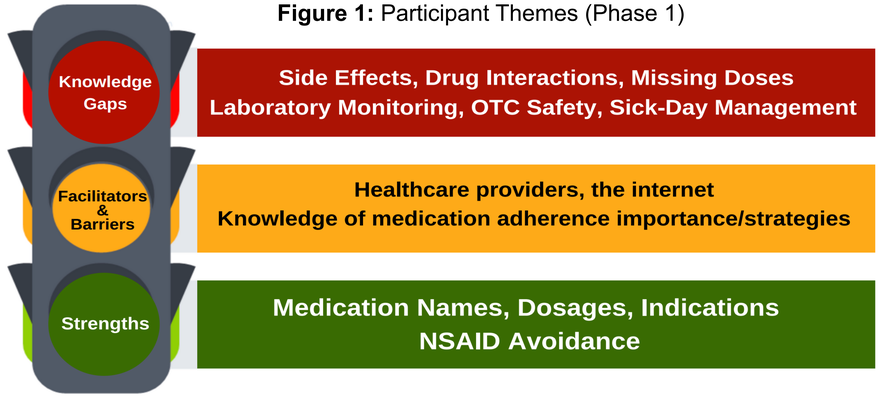


Table 2: Environmental Scan (Phase 2)

Literature Search	
Number of Search Results	n=337
g Included	n =10
CKD Medication Education Tools	n=13
Format	
Websites	n=6
Modules	n=3
Mobile Applications	n=2
Electronic Documents	n=1
DVDs	n=1
Topics	n=1
CKD Medications	n=8
Medication Adherence	
Importance	n=7
Strategies	n=7
Medication Safety	
Prescriptions	n=6
OTCs	n=9
Sick-Day Management	n=1

Figure 2: Combined Themes (Phase 1 & 2)

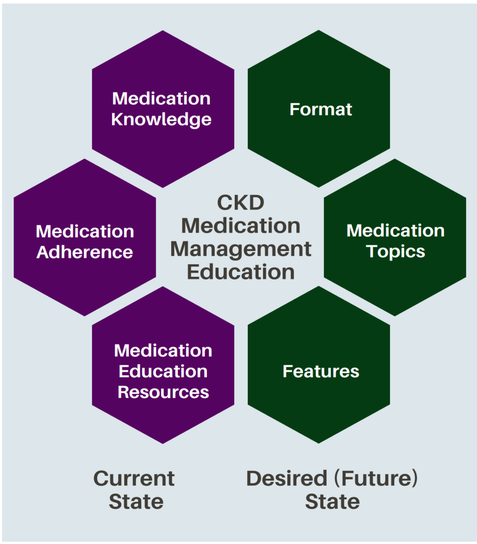
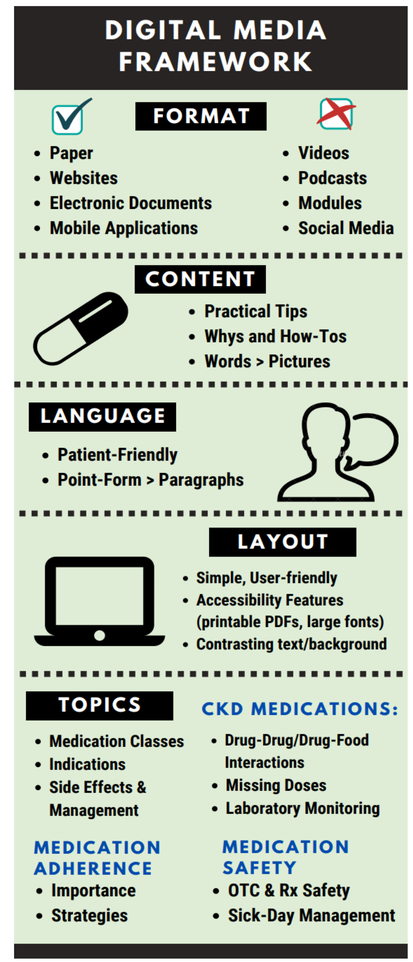


Figure 3: Digital Media Framework



Discussion

- Overall, participants reported strong medication adherence and understanding of their treatment regimens
- Medication safety (i.e. sick-day management) represents a knowledge gap in both the existing literature, and for study participants
- Participants were open to using digital media platforms
- An ideal medication tool should contain practical day-to-day management strategies
- **LIMITATIONS:** Potential selection bias for patients with higher-level education; findings may not represent all UHN renal clinic patients

Conclusions

- Medication knowledge is foundational to improving self-management behaviours, such as adherence
- Digital media represents a potential channel for patient education
- The resultant digital media framework can inform the development of future CKD medication education tools, tailored to the needs and preferences of this population