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Using Google Trends Data to Study Public Interest in Chronic Kidney Disease (CKD) in Indonesia

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Objectives: Chronic Kidney Disease (CKD), a global health burden, is often asymptomatic until they develop into End stage renal disease (ESRD). Early detection and proper management of CKD will reduce morbidity, mortality and cost of health system. Raising public awareness of CKD is imperative in prevention, early detection and control. This Study aims to investigate the public pattern in seeking information about CKD in Indonesia.

Methods: We evaluate relative search Volume (RSV) of CKD relative search based on time interest and geographical interest in Indonesia during 2016 - 2021. CKD relative search queries were listed in English and Bahasa Language to search relevant term for Indonesia. A chi square test for goodness of fit was used to analysis of difference in the popularity of CKD search term among distinct region of Indonesia.

Results: CKD RSV was in sideway trends and consistently fluctuated during the past 5 years with the highest peak varied over time. In 2018, the highest prevalence of CKD in Indonesia was 0,64% in North Kalimantan Province whereas CKD search term achieved the highest popularity in North Sulawesi Province with [$\chi^2(34, N=1638)=157.939, P<0.001$]. World Kidney Day in March 11th was unrelated to the highest peak during the past 5 years, with February-March as the highest peak was only in 2017 and 2020.

Conclusions: Internet searched interest about CKD is different between region in Indonesia. Further study is needed to assess factors associated with public seeking information about CKD.

Figure 1. Geomaps of CKD RSV



Figure 1. Geomaps of Chronic Kidney Disease (CKD) RSV. As darker color of blue in sub-region, it gets the higher number of search about CKD

Table 1. Related queries for CKD in Indonesia

Table 1. Related Queries for CKD in Indonesia (Search queries in Bahasa)

No	TOP Queries (in Bahasa)	English	Value
1	gagal ginjal	Renal Failure	100
2	ckd	CKD	32
3	penyakit ginjal	Renal Disease	15
4	penyakit gagal ginjal	Renal Failure Disease	14
5	obat gagal ginjal	Renal Failure Drugs	12
6	gagal ginjal kronik	Chronic Renal Failure	11
7	gejala gagal ginjal	Symptoms of Renal Failure	10
8	ginjal kronis	Chronic Kidney	9
9	icd 10 ckd	CKD ICD 10	7
10	gagal ginjal adalah	Definition of Renal Failure	7

Table 2. Related Topics for CKD in Indonesia (Search topics in Bahasa)

No	TOP Topics	English	Value
1	Ginjal	Renal	100
2	Kondisi kronis	Chronic condition	17
3	Pasien	Patient	10
4	Hemodialisis	Hemodialysis	6
5	Batu Ginjal	Renal Stone	6
6	Gagal ginjal akut	Acute Renal Failure	5
7	Gagal jantung	Heart Failure	5
8	EGFR	EGFR	5
9	Bikarbonat	Bicarbonat	4
10	Ginjal	Renal	4