

Original Research Article

Socio-demographic factors influencing health information seeking behaviour among health professionals in selected public hospitals in Kirinyaga county, Kenya

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ABSTRACT

Background: Capability of health professionals to access, retrieve and utilize accurate health data is fundamental for evidence-based practice, patient safety, clinical efficacy, and optimal general health outcomes. Despite health information being cornerstone to achieving national healthcare objectives and supporting professional duties, research in developing nations has prioritized technological development over the behavioural patterns of the information users.

Methods: This descriptive cross-sectional study in Kirinyaga County assessed how health professionals' sociodemographic factors influence their information-seeking behaviour. Quantitative data was collected using semi-structured questionnaires and analyzed using multinomial logistic regression ($p < 0.05$). Qualitative data was collected using key informant interview guide.

Results: The study included 190 participants, most aged 21-30 years and having a diploma level of education 63.2%. majority 58.1% were male with a work experience of 3-5 years (37.5%) while 60.1% were nurses. younger professionals aged 21-30 years were 2.943 times likely to utilize print resources compared to those aged 41-50 years (p value=0.043; OR=2.943). Professionals with work experience of 3-5 years were 2.50 times likely to use print resources as compared to those with over 10 years working experience (p value=0.039; OR=2.50). However, work experience had no statistically significant influence on IT-based resources use as all the professions/ cadres had p values greater than 0.05.

Conclusion: work experience and age influenced information seeking behaviour of the health professionals. Information resources were not customized to address professionals' specific information needs.

Keywords: Information, Information seeking, Information-seeking behaviour, Health professionals, Information resources

INTRODUCTION

Information-seeking behaviour (ISB) is a proactive, goal directed process in wherein individuals purposefully search for, retrieve, and evaluate information to bridge a perceived knowledge gap or address a specific problem. In the healthcare contexts, ISB is characterized by a dynamic interaction between traditional resources and digital ecosystems. The selection of these information

channels is heavily dictated by an individual's cognitive skills, the urgency of the task, and the overall accessibility of the medium.¹ Information serves as a vital tool for societal development and advancement; its availability and accessibility can be used as a foundational metric to assess a country's socioeconomic growth.² Because information is a key element in the consumption and production of products and services, its role is significant across various individuals and

professions, serving as an essential component of both individual and organizational life. For an individual to be truly informed, it is a fundamental requirement that they possess access to the necessary information.

In the health professionals' workplace setting, health information plays a crucial role. Relevant, reliable, and up-to-date information is a primary requirement for the delivery of quality health services, which can only be achieved through sustainable access to information resources. Access to information improves the knowledge base upon which informed decisions are made, facilitating proper patient treatment, the implementation of medical procedures, and the proficient handling of medical technology. Furthermore, appropriate health information management contributes heavily to harmonious working relationships among healthcare professionals.³

The health information needs of healthcare professionals are multifaceted and can be categorized into four distinct dimensions: unrecognized needs, recognized needs, satisfied needs, and pursued needs. These underlying information needs are not strictly dependent on the information system itself, as users may not always explicitly identify what they need. For instance, the potential to utilize a health information system may be ignored if professionals lack the training or knowledge on how to effectively search for information.

Demographic and professional variables heavily dictate these requirements. Research indicates that a health professional's years of experience and field of specialization dictate their specific information needs; for example, a gynecologist targets women's health information, whereas a pediatrician seeks information pertaining to childhood health problems. Clinicians frequently require information to make patient-specific decisions regarding diagnosis, treatment plans, drug requirements and administration, alternative medical opinions, and general patient management. Additionally, they seek information to update their broader professional knowledge and gain deeper insights into diseases.⁴

Consequently, health professionals' ISB is largely driven by these localized information needs. Factors such as higher educational attainment, older age, and practicing in urban rather than rural locations significantly increase the probability of utilizing libraries and actively seeking health

The rapid advancement of medical technology requires health professionals to continuously access current information, yet a major knowledge-practice gap persists. Globally, 30% to 45% of patients miss evidence-based care, and 20% to 25% receive harmful or unnecessary treatments due to outdated information, driving over 3 million annual deaths.⁵ In resource-limited African settings, up to 54% of professionals lack electronic access, forcing 58% to rely on outdated hard copies or

peer consultations. In Kenya, 51.53% of providers show average to poor health information-seeking behaviour (HISB) due to low institutional support, leading to hundreds of patient negligence complaints. Most professionals (86%) only seek information reactively.^{6,7}

This study investigates the socio-demographic, facility, and technological determinants of HISB among public hospital professionals in Kirinyaga County to establish a data-driven basis for clinical interventions. The objective of this study was to examine the health facility factors influencing health information seeking behaviour of health professionals.

METHODS

Study area

Kirinyaga county is in the central region in Kenya. I Kirinyaga County is home to 202 health facilities of various levels, 109 of which are public facilities. The distribution of public facilities includes one county teaching and referral hospital, three sub-county hospitals, ten level 3 hospitals, forty-five level 2 facilities, and fifty level 1 facilities. The county's doctor-to-population ratio stands at 1:36,339. Kirinyaga county encompasses a mix of rural and urban population, leading to varied healthcare needs and hospitals capacities. Public health facilities in Kirinyaga county faces challenges related to resource constraints which may include accessing current health information and technologies.

Study design

The study was cross-sectional in design and was conducted from January 2025 to April 2025.

Sample size determination

The study sample size was determined using the Fisher's sample size determination formular.

$$n = \frac{Z^2(1 - p)}{d^2}.$$

Where: n= is the desired sample size, Z= standard normal deviation at 95% confidence level, p=percentage of people who possess the characteristic under investigation (a proportion of 50% was used since the proportion was unknown. hence, p=0.5), D=sample error (set at 0.05). Therefore,

$$n = \frac{1.962^2(1 - 0.5)}{0.05^2} = 384 \text{ respondents.}$$

The population of health professionals working in Kirinyaga county's public hospitals was 724. As a result, the sample size was adjusted downwards using the formular.

$$nf = \frac{n}{1 + \left(\frac{n}{N}\right)}$$

Where: nf= is the sample size when the population does not exceed 10,000, n=the sample for a population above 10,000 and N= is the entire population.

$$nf = \frac{384}{1 + \left(\frac{384}{724}\right)} = 251 \text{ respondents}$$

Inclusion criteria

The participants were health professionals who had worked Kirinyaga county public hospitals for at least six months.

Exclusion criteria

Health professionals who have worked for less than six months and those who were working on an internship basis.

Data collection procedure

The researcher trained the research assistants on the study objectives, data collection instruments and ethical issues to be considered. The training also emphasized on strong communication and interpersonal skills to all participants engagement was both professional and considerate.

Data collection process started with identification of the eligible participants by applying the study's established inclusion criteria. The research team introduced themselves to the sampled health professionals and provided them with informed consent forms to review. The consenting health professionals were administered a pretested questionnaire. Participants selected for key informant interviews completed a 10-minute structured interview.

Data collection tools

The primary tool was a semi structured questionnaire for health professionals. Additionally, a key informant interview (KII) guide was used with hospital managers and administrators to collect in-depth qualitative insights into information-seeking behaviours. This KII guide allowed for direct engagement, enabling the interviewer to clarify questions, probe unclear responses, and ultimately ensure the collection of high-quality, detailed data.

Pretesting of data collection tools

To ensure clarity and reliability, the data collection instruments were pretested with 25 respondents at Embu County Referral and Teaching Hospital, a site chosen for its proximity and similarities to Kirinyaga County. The pretesting aimed to evaluate question clarity, identify and

address flaws and estimate completion time. Ultimately, the pretest allowed the researcher to identify and reframe ambiguous questions before final data collection.

Data management and analysis

Quantitative data was analyzed using SPSS version 29 after incomplete questionnaire were discarded. The outcome variable was described using frequencies and percentages. Given that information seeking behaviour is categorical variable with three classifications, multinomial logistic regression was used to evaluate the predictive power of the independent factors with statistical significance set at $P < 0.05$. Qualitative data was analyzed thematically to identify emerging themes and triangulate findings with the quantitative results, with key themes supported by verbatim participant quotes.

Ethical procedure

The study obtained ethical clearance from the Mount Kenya University Ethical Review Committee and a research permit from the National Commission for Science, Technology and Innovation. Additionally, a formal permission was obtained from Kirinyaga County government through the County director of health services and public health.

RESULTS

Social demographic characteristics of the respondents

The largest group was composed of health professionals aged 21-30 years, accounting for 48.2 % of the total sample followed by those aged between 31 years to 40 years (29.3%). The study revealed that only 13 (7.1%) of the study participants were aged above 50 years. Male respondents were 111 (58.1%). Majority of participants 120 (63.2%) had a diploma as the highest level of qualification and 27 (14.4%) had attained a bachelor's degree while only 8 (4.4%) had attained a master's degree. Most participating health professionals had 3 to 5 years of work experience (37.5%), while only 23% possessed over 10 years of experience. By professional cadre, nurses made up the largest share of participants (60.1%), whereas pharmaceutical technologists accounted for the fewest (1.75%).

Age and gender influence on health information-seeking behaviour

The findings show a statistically significant association between the age of health professionals and their utilization of print health information resources. professionals aged 21 to 30 years were 2.943 times more likely to use print resources compared to those aged 50 and above ($p=0.043$; $OR=2.943$). Similarly, health professionals aged 31 to 40 years were 1.924 times more likely to use print resources ($p=0.032$; $OR=1.924$), while

those aged 41 to 50 were 3.651 times more likely to use print resource use ($p=0.037$; $OR=3.651$).

No statistically significant associations were observed between age and the use of IT-based information resources, as the p values for all age groups exceeded the 0.05 threshold (21–30 years: $p=0.401$; 31–40 years: $p=0.179$; 41–50 years: $p=0.490$).

Gender did not act as a significant predictor for either print ($p=0.649$) or IT-based resource use ($p=0.803$).

Influence of highest qualification, profession and work experience on health information-seeking behaviour

the study found out that professions did not influence the type of information resources that health professionals used as all the professions had a p value greater than 0.05

which was set as the threshold. Professional cadre and highest academic qualification were not statistically significant predictors for the utilization of either print or IT-based health information resources ($p>0.05$ for all categories).

Professionals' work experience significantly influenced the use of both IT based and print resources. Compared to the reference group (>10 years of experience), health professionals with 3–5 years of experience had significantly higher odds of utilizing print resources ($OR=2.500$, $p=0.039$).

No significant differences in print utilization were found for professionals with <2 years ($p=0.139$) or 6–9 years ($p=0.107$) of experience. For IT-based resources, having <2 years of experience was a significant negative predictor of use ($OR=0.381$, $p=0.045$).

Table 1: Social demographic characteristics (n=190).

Characteristics	N	%
Age (in years)	21-30	92
	31-40	56
	41-50	29
	> 51	13
Gender/ sex	Male	111
	Female	79
Education	Certificate	18
	Diploma	120
	Higher diploma	16
	Degree	27
	Masters	8
Profession	Doctors	10
	Nurses	114
	Clinical officers	33
	Lab personnel	16
	Nutritionist	5
	HRIOs	4
	Radiographers	4
	Pharmacist	3
Work experience (in years)	≤ 2	48
	3-5	71
	6-9	27
	≥ 10	44

Table 2: Influence of age and sex on HISB.

Information resources	B	Std. Error	Wald	df	Sig.	Exp (B)/OR	95% confidence interval for exp (B)		
							Lower bound	Upper bound	
Print sources	Age (in years)								
	21-30	1.043	0.030	4.002	1	0.043	2.943	1.073	7.148
	31-40	1.159	0.190	4.257	1	0.032	1.924	1.153	9.121
	41-50	1.295	0.080	4.594	1	0.037	3.651	1.136	8.306
	50 ≤	0 ^b	.	.	0	.	.	.	.
IT based	21-30	-0.384	0.508	0.547	1	0.401	1.794	0.228	1.934

Continued.

Information resources		B	Std. Error	Wald	df	Sig.	Exp (B)/OR	95% confidence interval for exp (B)	
								Lower bound	Upper bound
	31-40	0.737	0.553	2.016	1	0.179	1.147	0.736	5.
	41-50	0.527	0.437	1.129	1	0.490	4.606	0.375	3.069
	50 ≤	0 ^b	.	.	0	.	.	.852	.
Print sources	Gender								
	Female	-0.154	0.307	0.182	1	0.649	0.875	0.460	1.204
	Male	0 ^b	.	.	0	.	.	.	.
IT based	Female	-0.117	0.366	0.092	1	0.803	0.869	0.387	1.832
	Male	0 ^b	.	.	0	.	.	.	.

a. The reference category is informal, b. This parameter is set to zero because it is redundant

Table 3: Profession, education and work experience influence on HISB.

Information resources	B	Std. Error	Wald	df	Sig.	Exp(B)/OR	95% confidence interval for exp (B)		
							Lower bound	Upper bound	
Print sources	Profession								
	Nurse	0.030	0.513	0.004	1	0.950	1.031	0.401	2.701
	C.O	-.1476	0.526	0.078	1	0.780	0.850	0.309	2.431
	Nutritionist	0.378	0.680	0.320	1	0.572	1.465	0.402	4.981
	MO	0.719	0.741	0.879	1	0.348	2.100	0.472	8.473
	Lab tech	1.192	0.891	0.492	1	0.483	3.325	0.506	21.624
	Pharmacist	-1.567	1.138	1.902	1	0.168	0.265	0.230	1.960
	HRIO	0 ^b	.	.	0	.	.	.	.
IT based	Nurse	-0.439	0.549	0.659	1	0.417	0.649	0.218	1.789
	C.O	-0.409	0.589	0.471	1	0.493	0.659	0.208	2.137
	Nutritionist	-0.632	0.926	0.469	1	0.493	0.539	0.090	3.208
	MO	0.249	0.857	0.091	1	0.763	1.279	0.241	6.975
	Lab tech	0.068	1.298	0.004	1	0.950	1.086	0.079	13.887
	Pharmacist	-1.315	1.162	1.290	1	0.256	0.092	0.031	2.582
	HRIO	0 ^b	-	-	0	-	-	-	-
Print sources	Education (highest qualification)								
	certificate	-.358	1.507	0.059	1	0.808	0.690	0.039	12.954
	Diploma	-.349	1.419	0.062	1	0.803	0.671	0.042	11.485
	High diploma	-.801	1.529	0.281	1	0.596.	0.439	0.019	9.029
	Degree	-1.038	1.479	0.301.	1	0.583.	0.349	0.019	6.369
	Master's degree	0 ^b	.	.	0	.	.	.	.
IT based	certificate	-1.609	1.358	1.399	1	0.237	0.195	0.013	2.900
	Diploma	-1.960	1.247	2.398	1	0.121	0.139	0.012	1.639
	High diploma	1.301	1.359	0.891	1	0.345	0.269	0.021	3.890
	Degree	-2.10	1.319	2.470.	1	0.116.	0.126	0.010	1.700
	Master's degree	0 ^b	.	.	.	.	.	.	.
Print sources	Experience								
	below 2 years	0.693	0.480	2.186	1	0.139	0.800	0.790	3.550

Continued.

Information resources		B	Std. Error	Wald	df	Sig.	Exp(B)/OR	95% confidence interval for exp (B)	
								Lower bound	Upper bound
	3-5 years	0.893	0.480	4.280	1	0.039	2.500	1.050	3.550
	6-9 years	0.000	0.561	2.600	1	0.107	5.480	0.826	5.985
	Above 10 years	0b	.	.	0	.	.	.	.
IT based	below 2 years	-0.965	0.567	4.013	1	0.045	0.381	0.082	1.768
	3-5 years	-0.385	0.483	0.591	1	0.442	0.381	0.082	1.768
	6-9 years	0.675	0.550	1.419	1	0.084	0.234	0.047	1.210
	10 years & above	0b	.	.	0	.	.	.	.

a. The reference category is informal, b. This parameter is set to zero because it is redundant.

DISCUSSION

The high likelihood of young health professionals to use print resources may reflect the fact that academic training is still heavily uses physical textbooks and printed standard operating procedures are still foundational to the early career in clinical practice. However, findings from previous studies are somewhat paradoxical, for example a study found that younger nurses primarily depended on the internet as their main information source while those aged 50 years and above strongly preferred to use the traditional media and newspapers.⁸

Another study indicates that while younger doctors are more inclined to seek information for specific patient problems via medical literature, older doctors often rely on CME courses and pharmaceutical representatives.⁹ The qualitative results from the key informants showed that the health professionals' age had an association with the used health information resources. Younger health professionals were found to be more proficient in the use of information and communication technology compared to their older counterparts. Older professionals experienced difficulties in using IT-based resources as they lacked the basic information and communication skills that are necessary for effective use of IT-based resources.

This can be linked to the fact that young professionals are more exposed and skilled on the use of IT- based resources than the older health professionals. This is supported by past research which indicated that the older health professionals have less tendency of using IT-based resources in comparison with younger professionals.¹⁰

The results obtained from the study demonstrated that health professionals' gender had no influence on the information resources used when searching for the required health information for both print and IT based resources. These findings contradict a study which noted that female health professionals often face information-seeking barriers due to the double-burden of professional duties and domestic expectations.¹¹ As a result, they

prefer summarized, mobile-friendly information over the active research. The qualitative data from the key informants indicated that gender do not influence health information seeking.

Professions did not influence the type of information resources that health professionals used as all the professions had a p value greater than 0.05 which was set as the threshold. However, findings from the key informant revealed that although the profession had no influence on the resources used in seeking information among health professionals, it influenced the kind of information which health professionals needed. This aligns with previous studies which reported that Medical Officers and Pharmacists are more likely to have paid subscriptions to clinical tools like up to date, while the Clinical Officers and Nurses frequently use the Kenya Essential Medicines List and physical manuals provided by the Ministry of Health.^{12,13} This was also echoed by the qualitative data as the key informant stated that profession influences the kind of information sought by health professionals, but not the resource they use to get the information.

This study revealed that the profession does not influence the information seeking behaviour as it does not influence the health information resources used when seeking the information which agreed with other previous studies.¹⁴ However, the complexity of tasks to be accomplished by the health professional, which may be due to the type or level of health facility or profession influences information seeking behaviour. Due to the complex nature of the task to be performed by the health professional largely determines the information needs and the information seeking patterns among the health professionals. Education/highest qualification did not have a statistically significant influence on the type of information resources used in obtaining health information. This was further supported by the qualitative data. This finding contradicts a previous study which indicated that more educated professionals have a higher likelihood of using internet in search of information.¹⁵ The contrast may be attributed to the low number of

respondents with high level of education such as PhDs, master's degree and bachelor's degree.

Work experience influence on health professionals' health information-seeking behaviour

Work experience significantly influenced the health information resources utilized by health professionals. Nonetheless, work experience had no statistically significant influence on the use of IT-based resources as all the professions had $p > 0.05$. The qualitative data revealed that health professionals experience increased access to reliable and authoritative informal information sources. Further, experience allows them to have expertise in their professions as well as establishing networks which facilitate information sharing. As a result, informal health information resources are widely used.

Highly experienced professionals are more exposed and have well established information sharing networks thus having access to reliable information resources. Professionals with less experience use the print resources when they take up new responsibilities and roles. The print resources provided authoritative information for use by the less experienced health professionals who may even be new to their jobs. This aligns with previous study that found that less experienced health staff use print resources more as compared to experienced staff.¹⁶

CONCLUSION

Health professionals' age significantly influenced their health information seeking behaviour. However, health professionals' gender did not have a statistically significant influence on their information seeking behaviour. The profession and education level (highest qualification) were found not to be significantly influence the health professionals' health information seeking behaviour. The findings further indicated that health professionals' work experience had a statically significant influence on their health information seeking behaviour.

This study has few limitations. The study's cross-sectional design limits the ability to establish causality between socio-demographic factors and health professionals' information seeking behaviour. Reliance on self-reported data may introduce recall bias or social desirability bias, affecting the accuracy of responses. The findings may not be generalizable to other regions with different organizational and economic contexts beyond Kirinyaga county. The exclusion of recent employed health professionals who have worked in the county for less than six months may result in potential sampling bias, overlooking diverse information seeking behaviours.

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