
Health Information Management Professionals' Interest and Perception of Clinical Coding Practice: A Systematic Review

Akinpelu, G. P.

Adeniran, I. A.

Ogunkeye, F. A.

Health Information Management Department,

Lead City University, Ibadan, Oyo State

oyelekepeace@gmail.com, ayobami.adeniran@lcu.edu.ng, omoroshin1974@gmail.com

ABSTRACT

This paper synthesises available peer-reviewed and grey literature on HIM professionals' interest in, and perceptions of clinical coding practice. A structured literature search was conducted using academic search engines and indexed databases, supplemented by targeted grey-literature searches. Findings were narratively synthesised using thematic analysis, and are reported with American Psychological Association (APA, 7th edition) in-text citations and references. Eleven studies and reviews meeting the inclusion focus were identified, spanning Iran, Portugal, Australia, the United Kingdom, Canada, Nigeria, and Malaysia. Four dominant themes emerged: (1) HIM professionals generally perceive clinical coding as important for patient care, funding, and research, but view the coding process itself as burdensome; documentation quality, terminology ambiguity, and time pressure are the most consistently reported perceived barriers to accurate coding; interest in coding as a specialisation is shaped by training exposure, confidence with technology and classification systems, perceived career progression, and workload/remuneration; and attitudes toward computer-assisted coding and artificial intelligence are cautiously positive, tempered by concerns about deskilling and job security. The study concluded that HIM professionals across diverse settings value clinical coding's importance but experience it as cognitively demanding and under-supported by training, documentation quality, and organisational systems. Strengthening pre-service exposure to coding, structured mentorship, clinician–coder collaboration, and thoughtfully implemented coding technologies could improve both interest in and perception of coding practice.

Keywords: *Health Information Management, Clinical Coding, Medical Coding, computer-assisted coding, Career Interest, Health Information Professionals*

INTRODUCTION

Clinical coding (the translation of clinical documentation into standardised classification codes (e.g., ICD-10/11)) underpins reimbursement, health statistics, research, and quality improvement. Health information management (HIM) professionals (health information

managers, technicians, medical records officers, and clinical coders) are central to this process, yet their interest in coding as a role and their perceptions of coding practice are unevenly documented across settings. Health information management (HIM) is the practice of the acquisition, analysis, protection, and usage of health data to enable patient care, administration, and research. Clinical coding is the process of applying uniform coding standards (e.g., ICD-10/ICD-11, SNOMED CT) to diagnoses and procedures appearing in a patient's health record, and is a fundamental technical activity that takes place in HIM departments. The coded data are the basis for case-mix and reimbursement schemes, national mortality and morbidity data, clinical audits, and health-services research, thus the precision and uniformity of coding processes have considerable value to health systems (Campbell & Giadresco, 2020; Santos et al., 2008).

RATIONALE FOR THE REVIEW

A continuing challenge in global health information management is the relative undersupply of qualified clinical coders compared with demand and uneven coding accuracy between organizations (Campbell & Giadresco, 2020). Developing robust workforce planning strategies, HIM/coding curricula, and retention initiatives requires a clear understanding of what is known about coding professionals' perspectives on coding as practice and a profession. Evidence for this specific nexus of interest versus technical skill is, however, fragmented in national surveys, qualitative interviews, and tangential research on factors impacting career choice and computer-assisted coding. A systematic synthesis is thus warranted to compile scattered insights, determine overlapping themes, and determine gaps in the existing literature.

Objectives

This review sought to answer three questions:

- What perceptions do HIM professionals (and trainees) hold about clinical coding as a professional practice?
- What levels of interest, motivation, or career orientation toward clinical coding are reported among HIM professionals and students, and what factors are associated with this interest?
- What individual, organisational, and technological factors shape these perceptions and interest levels?

METHOD

Design

This review employed a systematic, PRISMA-guided, narrative synthesis. As the search method adopted was tool-based and consisted of an iterative combination of web and academic database searching and not searching on a comprehensive range of subscription bibliographic databases, it is appropriately defined as a systematic-style rapid review, not a fully registered

systematic review that included a comprehensive multi-database search and accounted in full for PRISMA flow. This limitation is further explored in Section 6.

Search Strategy

Searches were undertaken with the following terms and any combinations thereof: “health information management,” “health information professionals,” “medical records officers,” “clinical coding,” “medical coding,” “coder,” “perception,” “attitude,” “interest,” “career choice,” “willingness.” Databases that were searched included PubMed/PMC indexed journals, the Health Information Management Journal, BMC and Springer journals, British Journal of General Practice, manuscripts deposited at ResearchGate/academia.edu and AHIMA professional publications. Any relevant articles cited in the bibliographies of retrieved papers were then included in a search for further publications (snowballing).

Eligibility Criteria

Inclusion criteria: (a) Studies with participants being HIM professionals, clinical/medical coders, health records officers, HIM/coding students or trainees; (b) Empirical studies on perceptions, attitudes, satisfaction, motivation, confidence or career interest in relation to clinical/medical coding practice; and (c) studies published in English. Exclusion criteria: (a) Studies that purely investigate coding accuracy or error rates with no mention of the perceptions or attitudes of health records/coding professionals; or (b) Studies that examine purely the physician/clinician documentation behavior with no HIM/coding-professional involvement. Nearby literatures focusing on career choice factors in health professions other than HIM/coding, or on computer assisted coding were also included for purposes of the literature search to assist in understanding of some possible contributing factors to HIM professionals’ career interest or their perceptions of the job but the evidence is indirect.

Study Selection and Data Extraction

The titles and abstracts retrieved by the search were screened for eligibility related to the review questions. Where full text was available, full-text versions of the records deemed to be eligible were retrieved (otherwise, in depth abstracts were retrieved). Details on each included study that were extracted were the author(s)/year, country, study design, sample/population, and findings concerning perception or interest in clinical coding.

Quality Considerations

The included studies represented different designs ranging from descriptive cross-sectional surveys to qualitative studies employing focus group interviews, interviews and one narrative review. Given the heterogeneity of included studies, no quantitative formal risk-of-bias was pooled; methodological characteristics (e.g. Sample size, sampling procedure, single- vs multi-site design) are described descriptively in association with findings so that readers may assess the reliability and strength of each report.

Synthesis Approach

The results are synthesised by thematic analysis: coded into the extracted data, the resultant codes are grouped into candidate themes and refined by cross-study comparisons. Four overall themes are reported in Section 3. The in-text citations and bibliography adhere to the American Psychological Association's (7th edition) formatting.

RESULTS AND DISCUSSION

Eleven studies and reviews were retained for synthesis, drawn from Iran, Portugal, Australia, the United Kingdom, Canada, Nigeria, and Malaysia.

Table 1: Summary of the included Sources.

Study (author, year)	Country	Design	Sample	Focus relevant to review
Kimiafar et al. (2018)	Iran	Cross-sectional survey	HIM staff, single teaching hospital	Views on medical-coding software and perceived usability/quality of coding tools
Santos et al. (2008)	Australia	Mixed-methods (survey + record audit)	Clinical coders across metropolitan/rural hospitals	Organisational factors (staffing, unit allocation, workload) shaping coding quality
Alonso et al. (2020a)	Portugal	Qualitative focus groups	10 medical coders, 4 public hospitals	Coders' perceptions of record quality as the basis of coding
Alonso et al. (2020b)	Portugal	Qualitative focus groups	Medical coders, 4 public hospitals	Problems and barriers coders perceive in the coding process
Davies et al. (2024)	Wales, UK	Qualitative semi-structured interviews	19 primary-care clinical/non-clinical staff, incl. coders	Motivation to code, coding challenges, and views on coding systems
Hosseini et al. (2021)	Iran	Qualitative triangulation study	Coders and clinicians	Factors perceived to affect diagnosis-coding data quality
Descriptive coding-error study (2022)	Iran	Descriptive, questionnaire + record review	Coders, teaching hospitals (Shahid Beheshti University)	Coders' and physicians' perceived contributors to coding errors
Lucyk et al.	Canada	Qualitative interview study	Coding professionals	Barriers to data quality perceived during the coding workflow

Study (author, year)	Country	Design	Sample	Focus relevant to review
Campbell & Giadresco (2020)	Australia	Narrative review	Literature on computer-assisted coding (CAC)	Coding professionals' attitudes toward CAC adoption and impact on role
Adeleke et al. (2015)	Nigeria	Cross-sectional survey	374 HIM leadership professionals	Perceptions of IT relevance, skill gaps and training interest relevant to coding-adjacent competencies
Maharajan & Rajiah (2026)	Malaysia	Qualitative interviews	15 final-year health-science students	Perceived competence/confidence barriers (incl. coding-related skills) shaping career interest

Perception of Clinical Coding as a Practice

Across the study contexts, HIM and coding professionals described coding as valuable and contribution to health outcomes but also as effortful and often exasperating. In the study on Welsh primary care settings, Davies et al. (2024) found that all clinic and administrative staff interviewed valued the quality of coded data for continuity of care, patient safety and remuneration; however they described that the ongoing frustration they encountered most frequently in their daily work involved the search for the correct code within the electronic system, leading to the selection of more generic or approximative codes over those more accurate and specific. In a similar vein, in the Portuguese hospital setting, Alonso et al. (2020a) focus-group study of medical coders found that coders perceived the healthcare record rather than the classification system as a constraint on the quality of the encoded data: the quality of encoding was constrained primarily by incomplete discharge summaries, absence of operative reports, and use of poorly specified diagnoses.

Coders' sense of identity as coders was determined by their dependency on quality clinical documentation; such dependency influenced job satisfaction as well as confidence in the resulting codes. In the Iranian hospital setting, Kimiafar et al. (2018) surveys HIM personnel on the use of coding software and reported favourable opinions on computerised coding tool utility but raised some issues concerning usability, search mechanisms and integration with hospital information systems – this would indicate that the quality of the computerised environment influences how coding is enacted, and in turn, perspectives on coding practice.

Interest in Clinical Coding as a Specialisation or Career Path

Direct information regarding the interest of HIM professionals in becoming and staying a coder was scarcer but some researches were informative. According to Adeleke et al. (2015), a national survey of HIM professionals at the leadership level showed almost universal recognition of the significance of information technology skills to the practice of HIM, with an expressed desire for further training in the weaker competence areas such as database

management and statistics-which reflects the notion that interest in coding and technical HIM specialties might be related more closely to feelings of preparedness than to the actual inherent desirability of the task.

Information on the topic was indirect, though nonetheless relevant, from a qualitative study on health-science students' perception of healthcare-analytics careers (Maharajan and Rajiah, 2026). Coding-related skills were one of the identified obstacles in this study; students lacked confidence when it came to coding, they described coding as a daunting area and a certain level of discomfort related to it discouraged them from developing an interest for analytics careers, which suggests a connection between feelings of preparedness and specialty interest not specific to HIM professionals. This notion is corroborated by previous literature concerning career-choice tendencies, particularly among healthcare professions, which suggest that perceived self-efficacy strongly impacts career preferences.

Factors Shaping Interest and Perception

Common to all four studies, four thematic categories were found to influence coders' experience and interest in clinical coding:

Documentation Quality: The completeness, legibility, and clarity of clinical documentation was frequently reported as having a greater influence than any other factor on coders' perceived capacity to accurately complete a clinical coding record and on coders' overall job satisfaction with this process (Alonso et al., 2020a; Davies et al., 2024).

Training and Readiness: Individuals and students who had received training in clinical coding, had experienced classification systems or received informatics education felt better prepared and more inclined to complete coding-related tasks, whereas individuals lacking these had lower self-perceived ability and sometimes avoided roles requiring high-intensity clinical coding (Adeleke et al., 2015; Maharajan & Rajiah, 2026).

Organizational Support: the structure of coding units (e.g., dedicated or integrated with clinical units), adequate staffing levels, work schedules, workload, time pressure, availability of review and audit process were related to coders' better perception of the clinical coding process (Santos et al., 2008; Davies et al., 2024).

Technology and Tools: User-friendly coding software and integrated electronic health records are important elements of overall satisfaction with the day-to-day work, unrelated to complexity of classification systems (Kimiafar et al., 2018; Campbell & Giadresco, 2020).

Challenges and Barriers Perceived by HIM/Coding Professionals

Similar patterns of perceived obstacles were recurrent across both the descriptive and qualitative studies, including a failure of clinicians to adhere to principles of diagnostic documentation, illegible or ambiguous notes, use of non-standardized abbreviations, missing information in the record, and coding deadlines in time pressure (Hosseini et al., 2021). Coders

in several studies reported a position of trying to bridge clinical ambiguity and administrative specificity - being forced to arrive at a definitive code for information that was frequently provisional or incomplete. Canadian qualitative study by Lucyk et al. Found also systemic issues impacting quality of data arising out of coding processes itself: relying on physicians for information, disparate information sources, and lack of opportunity for coder clarification.

Attitudes toward Coding Technology and Automation

A 2020 narrative review of computer-assisted coding (CAC) conducted by Campbell and Giadresco concluded that HIM/coding professionals were mostly cautious to positive about CAC and associated automation technologies: while they saw potential gains in efficiency and consistency, professionals voiced concerns about over-dependence on automated recommendations, deskilling and their effect on the skills and future of their role and the profession as automation develops. This ambivalent feeling represents one, probably increasing, variable in the way future and current HIM professionals view coding's career longevity.

Taken together, the syntheses suggest that health system HIM professionals largely agree on the nature of clinical coding, as being both significant - patient safety, payment and research - but difficult, subject to influences largely outside the coder's control (most particularly documentation quality), and with a moderate level of training and organizational system support (Alonso et al., 2020a, 2020b; Davies et al., 2024). Interest in the specialty of coding may be influenced more by perceived preparedness, confidence and sufficient training and support, than the nature of coding tasks per se, consistent with similar evidence regarding career choice in other health professions where self-efficacy and training experiences play key roles in specialty choice. The remarkable consistency of documentation quality as the number one challenge in diverse studies of coding in disparate geographies and methods (Alonso et al., 2020a; Davies et al., 2024; Hosseini et al., 2021; Lucyk et al., n.d.) is also instructive. It points to documentation quality as not a particular problem, system or place, but rather as a structural feature of coding: the role is located downstream of clinical processes it doesn't influence and for which it is accountable for providing data. The resulting structure likely leads to reduced job satisfaction and reduced likelihood of considering a career specialty. The guarded positive stance toward automated clinical coding in the Campbell and Giadresco (2020) work is worth noting. It highlights a trade-off between efficiency, concerns about role and skills, which could be managed by how new technology is framed, emphasizing role augmentation rather than replacement in HIM curricula and practice.

Implications for Practice, Education and Policy

1. Clinical coding curricula and practical exposure could be introduced earlier during HIM training courses due to the persistent association between coding readiness/confidence and perceptions about coding work (Adeleke et al., 2015; Maharajan & Rajiah, 2026).
2. Health facilities should develop clear communication pathways for the relationship between clinicians and coders (i.e., query processes, clinical documentation training

specifically for coders) to overcome the barriers presented by documentation quality – the issue that is consistently and most frequently identified.

3. The organisational features, like the deployment of coders within specific rather than broad units, caseload management and feedback mechanisms/audits, has been correlated with higher ratings of coding quality (Santos et al., 2008) and may therefore warrant higher priority in workforce planning.
4. The integration of computer-aided coding and artificial intelligence should involve coders in its design and implementation, rather than presenting it as a wholesale top-down change, to encourage sustained positive perceptions and interests in coding careers (Campbell & Giadresco, 2020).
5. Future primary research should be undertaken with a focus on directly assessing HIM professionals and students' interest in undertaking a specialization in clinical coding, rather than implying this based on broader studies, where possible using the same validated measures internationally.

Limitations of This Review

First, because a web-based search of academic search and web-fetch engines, rather than interrogation of subscription bibliographic databases (eg, CINAHL, Scopus, Embase) with full Boolean search strategies, was performed, the review should be considered a systematic-style rapid review rather than an inclusive registered systematic review, and a few related studies may not have been captured.

Second, little direct evidence was available to address the question of specifically "interest in clinical coding" versus perceptions of clinical coding practice in general, so related literature (eg, healthcare-analytics career-perception studies; general HIM workforce IT skills survey literature) had to be considered indirect evidence to the questions posed, thus diminishing the certainty of conclusions regarding interest per se.

Third, the sample sizes of the studies included in the review were very diverse, as were the study settings (hospital vs primary care) and country income status, making generalizable conclusions difficult to draw.

Fourth, a standard risk-of-bias tool was not used nor was any meta-analytic pool performed; indeed, the heterogeneous nature of much of the evidence, which tended to be largely qualitative and descriptive, precluded such a level of analysis.

CONCLUSION

Based on current data, clinical coding is viewed as a critical, yet difficult, activity among health information management professionals; the quality of documentation, the sufficiency of training, the availability of organizational support and the usability of coding-technology were found to be the key predictors of HIM professionals' perception and their intention to pursue and remain in a coding career. Their attitudes toward computer-assisted coding (CAC) and automation are cautiously positive. Enhancing coding-specific education, optimizing clinical documentation quality and judicious implementation of coding technologies appear to be the

most promising methods for improving health care information management professionals' perception of and intention to work as clinical coders. Further research that is focused on determining career intentions, using consistent and validated tools in similar settings is needed.

REFERENCES

- Adeleke, I. T., et al. (2015). Information technology skills and training needs of health information management professionals in Nigeria: A nationwide study. *Health Information Management Journal*, 44, 30–38.
- Alonso, V., Santos, J. V., Pinto, M., et al. (2020a). Health records as the basis of clinical coding: Is the quality adequate? A qualitative study of medical coders' perceptions. *Health Information Management Journal*. <https://doi.org/10.1177/1833358319826351>
- Alonso, V., Santos, J. V., Pinto, M., et al. (2020b). Problems and barriers during the process of clinical coding: A focus group study of coders' perceptions. *Journal of Medical Systems*, 44, Article 62. <https://doi.org/10.1007/s10916-020-1532-x>
- Campbell, S., & Giadresco, K. (2020). Computer-assisted clinical coding: A narrative review of the literature on its benefits, limitations, implementation and impact on clinical coding professionals. *Health Information Management Journal*, 49(1), 5–18. <https://doi.org/10.1177/1833358319851305>
- Davies, A., Ahmed, H., Thomas-Wood, T., & Wood, F. (2024). Primary healthcare professionals' approach to clinical coding: A qualitative interview study in Wales. *British Journal of General Practice*, 75(750), e43–e49. <https://doi.org/10.3399/BJGP.2024.0036>
- Factors affecting clinical coding errors. (2022). *Shiraz E-Medical Journal*. <https://brieflands.com/articles/semj-122161>
- Hosseini, S., et al. (2021). Factors affecting the quality of diagnosis coding data with a triangulation view: A qualitative study. *The International Journal of Health Planning and Management*. <https://doi.org/10.1002/hpm.3254>
- Kimiafar, K., Hemmati, F., Banaye Yazdipour, A., & Sarbaz, M. (2018). Views of health information management staff on the medical coding software in Mashhad, Iran. *Studies in Health Technology and Informatics*, 247, 471–475.
- Lucyk, K., Tang, K., & Quan, H. (n.d.). Barriers to data quality resulting from the process of coding health information to administrative data: A qualitative study. *BMC Health Services Research*.
- Maharajan, M. K., & Rajiah, K. (2026). Unravelling career preferences: Exploring health science students' perspectives on healthcare analytics. *Cogent Education/Cogent OA*. <https://doi.org/10.1080/2331186X.2026.2642463>
- Santos, S., Murphy, G., Baxter, K., & Robinson, K. M. (2008). Organisational factors affecting the quality of hospital clinical coding. *Health Information Management Journal*, 37(1), 25–37. <https://doi.org/10.1177/183335830803700103>