



Human Centered AI Ethics, Algorithmic Bias, and Data Synthesis in Social Work and Military Settings

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Abstract

Purpose: This study examines the ethical and professional implications of integrating Artificial Intelligence (AI) into clinical and community Social Work and its application within military settings, focusing on algorithmic bias, AI assisted data synthesis, privacy, and the preservation of human judgment.

Research Methodology: The study adopts a qualitative documentary research design that draws on peer reviewed literature, professional standards, international policy documents, and relevant national frameworks. The documents were analyzed thematically through the lenses of Human Centered Design Theory, Sociotechnical Systems Theory, and the Social Justice Perspective.

Results: AI offers opportunities to improve assessment, documentation, psychosocial intervention, research, and organizational decision making, but it raises serious concerns about privacy, confidentiality, informed consent, accountability, algorithmic bias, and transparency. These concerns intensify in military settings, where AI systems may process highly sensitive personal, health, and operational information about personnel, veterans, and their families.

Conclusions: AI should be treated as a professional support technology rather than a substitute for Social Work judgment, therapeutic relationships, or accountable institutional decision making. Responsible adoption requires institutional safeguards, professional competencies, continuous auditing, meaningful human oversight, and mechanisms through which affected people can challenge AI supported decisions.

Limitations: The study relies on secondary documents, does not test specific AI systems empirically, and focuses mainly on the Nigerian policy context.

Contributions: The study proposes a Human Centered AI Framework for Social Work and Military Practice (HCAI SWMP) built on ethical governance, bias aware data management, secure data synthesis, and human centered implementation.

Keywords: *Algorithmic Bias, Artificial Intelligence Ethics, Data Synthesis, Human Centered AI, Military Social Work*

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1. Introduction

Artificial Intelligence (AI) has evolved from a predominantly experimental technological field into an increasingly important component of professional, institutional, and public sector decision-making. AI systems are now employed to classify information, identify patterns, generate text, support predictions, automate administrative tasks, and synthesize large volumes of data. In health and human

services, these developments offer opportunities to enhance research, service delivery, and administrative efficiency while introducing ethical risks associated with algorithmic bias, privacy, transparency, and professional accountability. The [World \(2021\)](#) emphasizes that the development and deployment of AI in healthcare should prioritize ethical principles and human rights. Similarly, [Reamer \(2023\)](#) identifies emerging ethical challenges in Social Work involving informed consent, confidentiality, professional competence, and the responsible application of AI-supported assessments. These developments suggest that the central challenge is not simply whether AI should be adopted but how its integration can strengthen professional services without compromising human dignity, professional responsibility, and social justice.

The development of responsible AI has become particularly relevant to defense and military institutions, where technological systems may influence operational planning, information management, personnel administration, and security-related decision-making. [North \(2024\)](#) identifies lawfulness, responsibility and accountability, explainability and traceability, reliability, governability, and bias mitigation as guiding principles for responsible AI adoption. These principles highlight the importance of human oversight, institutional accountability, reliable data, and effective risk management. [Cotino and Gómez \(2024\)](#) further demonstrate that military AI applications create complex ethical and legal challenges requiring clearly defined human responsibilities and safeguards consistent with international humanitarian law. [Chapa \(2024\)](#) similarly highlights the continuing importance of human moral judgment in military AI governance. Although these studies primarily address military AI ethics, their arguments are also relevant to administrative and welfare-related military applications in which automated recommendations may affect personnel rights, institutional decisions, and individual well-being.

Within Social Work, AI is increasingly associated with digital case management, automated assessment, predictive analytics, administrative documentation, and generative technologies. These applications may assist practitioners in identifying service needs, analyzing complex information, and improving organizational efficiency. However, Social Work involves sensitive information concerning poverty, disability, mental health, trauma, family relationships, violence, child protection, and social exclusion. Consequently, the application of AI requires particular attention to confidentiality, informed consent, fairness, and contextual professional judgment. [Patton, Landau, and Mathiyazhagan \(2023\)](#) emphasize both the opportunities and ethical challenges associated with generative AI in Social Work research and call for stronger professional guidance. [Reamer \(2023\)](#) similarly argues that AI introduces ethical concerns that require appropriate safeguards and professional accountability. More recently, [Hwang \(2026\)](#) distinguishes between AI as a tool that augments professional judgment and automated systems that risk displacing relational authority and reinforcing social exclusion. Together, these studies suggest that technological capability must remain subordinate to professional ethics and the protection of service users.

These concerns become particularly significant in military Social Work, where professional welfare responsibilities intersect with hierarchical institutional structures and security requirements. Military social workers may provide clinical, organizational, family, and community services to personnel, veterans, and their families during deployment, separation, injury, trauma, reintegration, and retirement. AI applications could support case documentation, service coordination, psychosocial research, administrative data analysis, and resource planning. Nevertheless, these activities may involve highly sensitive health information, personnel records, family circumstances, and security-related data. The integration of AI into such environments therefore presents overlapping obligations involving client confidentiality, professional independence, institutional accountability, and legitimate security interests. Existing research on AI in Social Work provides guidance on professional ethics, while military AI scholarship emphasizes responsibility, lawfulness, and human control ([Chapa, 2024](#); [Reamer, 2023](#)). However, applying these principles jointly to military welfare and Social Work services requires an analytical approach that recognizes the interaction between professional care obligations and military institutional requirements.

The Nigerian context adds further significance to this discussion. Nigeria's National Artificial Intelligence Strategy establishes responsible innovation, ethical governance, institutional capacity, and inclusive technological development as national priorities. These priorities create opportunities for Social Work organizations, defense institutions, and military welfare services to develop sector-specific procedures for evaluating AI applications, protecting sensitive information, and strengthening professional competence. However, national policy principles alone do not establish how practitioners should assess algorithmic bias, verify AI-generated information, obtain informed consent, or assign accountability when AI-assisted recommendations affect vulnerable individuals. Translating general governance objectives into practical institutional procedures therefore represents an important challenge for the responsible adoption of AI in Nigerian Social Work and military welfare settings.

Although the ethical implications of AI have received increasing scholarly attention, the existing literature remains divided across several professional and institutional domains. Studies in Social Work primarily examine professional ethics, client protection, predictive tools, and practitioner responsibilities ([Patton et al., 2023](#); [Hwang, 2026](#)). Military AI research focuses more extensively on legal obligations, human control, operational reliability, and institutional responsibility ([Chapa, 2024](#); [Cotino and Gómez, 2024](#)). Meanwhile, research on generative AI demonstrates that advanced language models can produce inaccurate or fabricated information, raising additional concerns about the reliability of automated data synthesis ([Farquhar, Kossen, Kuhn, & Gal, 2024](#)). Despite these contributions, the reviewed literature provides limited integrated guidance for environments where Social Work ethics, military institutional responsibilities, algorithmic fairness, and sensitive data processing intersect. In particular, an operational governance framework addressing these interconnected dimensions within Nigerian military welfare and Social Work institutions remains insufficiently developed.

This study addresses the identified gap by proposing a Human-Centered AI Framework specifically designed to integrate professional Social Work ethics with responsible AI governance principles applicable to military institutions. Rather than examining ethical AI adoption, algorithmic bias, or automated data synthesis as separate challenges, the framework connects them through four interdependent components comprising ethical governance, bias-aware data assessment, secure data synthesis, and human-centered implementation. Its distinctive contribution lies in combining professional responsibility, institutional accountability, and continuous human oversight into a unified governance approach that can be adapted to the Nigerian context.

Accordingly, this study pursues four objectives. First, it examines the ethical implications of integrating AI into clinical, community, and military Social Work practice. Second, it identifies the sources and potential consequences of algorithmic bias in AI-supported Social Work and military decision-making. Third, it evaluates the opportunities and risks associated with AI-assisted data synthesis in these settings. Fourth, it develops a human-centered framework for ethical governance and professional AI integration. These objectives correspond to research questions concerning the ethical challenges of AI adoption, the origins and consequences of algorithmic bias, the benefits and limitations of automated data synthesis, and the governance mechanisms required for responsible implementation.

The study makes three contributions to existing scholarship. First, it extends the application of responsible AI principles to the intersection of Social Work and military welfare practice, demonstrating how professional care ethics and institutional security responsibilities can be considered within a shared governance structure. Second, it develops an integrative conceptual framework that connects algorithmic fairness, data protection, professional judgment, and institutional accountability rather than treating these concerns independently. Third, it translates established ethical principles into a proposed institutional governance pathway for Nigerian Social Work organizations and military welfare services. Through these contributions, the study advances a human-centered understanding of AI integration in which technological innovation supports professional judgment while maintaining human dignity, social justice, and accountability.

2. Literature Review and Hypothesis/es Development

2.1 Artificial Intelligence

Artificial Intelligence refers broadly to computational systems capable of performing tasks associated with human cognitive functions, including pattern recognition, prediction, classification, language processing, and generation. Contemporary AI includes machine learning systems, natural language processing, predictive analytics, and generative AI. Its capacity to process large datasets creates significant opportunities for professional organizations, but its outputs remain dependent on data, model design, context, and human use. Consequently, AI should be regarded as a decision support capability rather than an inherently objective substitute for professional reasoning. In professional settings such as Social Work and military welfare institutions, the responsible integration of AI requires a governance framework that prioritizes human oversight, transparency, fairness, and accountability. Although AI systems can enhance information management, risk assessment, and service delivery, their application in decisions affecting vulnerable individuals requires careful consideration of ethical and institutional responsibilities. [Floridi, Cowl, Beltrametti, Chatila, Chazerand, Dignum, Luetge, Madelin, Pagallo, Rossi, Schafer, Valcke, and Vayena \(2018\)](#) emphasize that ethical AI development should be guided by principles of beneficence, non-maleficence, autonomy, justice, and explicability. Similarly, [Amann, Blasimme, Vayena, Frey, and Madai \(2020\)](#) highlight the importance of explainability in AI-supported professional decision-making, particularly in contexts where decisions may significantly affect human well-being. Moreover, systematic algorithmic auditing throughout the AI lifecycle can help institutions identify potential harms, strengthen accountability, and improve governance practices ([Raji, Smart, White, Mitchell, Gebru, Hutchinson, Smith-Loud, Theron, & Barnes, 2020](#)). These perspectives suggest that AI adoption in Social Work and military welfare settings should be supported by clear institutional policies, professional competency development, continuous evaluation, and mechanisms that ensure final decisions remain under meaningful human control.

2.2 AI Ethics in Social Work and Military Settings

AI ethics refers to the principles and governance arrangements used to ensure that AI is designed and used in ways consistent with human rights, dignity, fairness, accountability, privacy, safety, and professional responsibility. International ethical frameworks place human dignity, human rights, transparency, accountability, human oversight, fairness, and nondiscrimination among the core principles of ethical AI governance, and privacy and human autonomy are among the central concerns surrounding AI in health ([World, 2021](#)). In Social Work, these principles intersect with professional commitments to client autonomy, confidentiality, social justice, and respect for human relationships ([National, 2024](#)). In military settings, they additionally intersect with institutional accountability, lawful conduct, security requirements, and responsible interaction between humans and machines ([North, 2024](#)).

2.3 Algorithmic Bias

Algorithmic bias refers to systematic and potentially unfair patterns in AI outputs arising from training data, model design, data selection, deployment context, or social conditions. Bias can occur through underrepresentation, historical discrimination, inappropriate variables, measurement choices, or differences in how systems perform across population groups. The National Institute of Standards and Technology conceptualizes AI bias as a sociotechnical problem involving technical processes and broader social and institutional factors, rather than as a problem that can be solved solely through technical adjustments ([National & Technology, 2022](#)). In Social Work and military practice, bias may influence assessments of vulnerability, risk, service need, personnel suitability, or resource allocation.

Recent research demonstrates that algorithmic bias can produce unequal outcomes when AI systems rely on historically disadvantaged populations, unrepresentative datasets, or inappropriate indicators of individual needs. [Obermeyer, Powers, Vogeli, and Mullainathan \(2019\)](#) found that a widely used

healthcare algorithm systematically underestimated the needs of Black patients because healthcare expenditure was used as a proxy for illness severity. Similarly, [Hall, Sage, Scott, and Joseph \(2023\)](#) highlight the importance of evaluating algorithmic fairness, equity, and predictive accuracy in child welfare decision-making, where biased assessments may reinforce existing inequalities. However, [Rittenhouse, Putnam-Hornstein, and Vaithianathan \(2026\)](#) demonstrate that appropriately implemented predictive tools can also reduce certain disparities in child protection decisions, indicating that algorithmic outcomes depend on system design, institutional context, and human involvement. In military healthcare settings, [\(Thota, Alt, Venkatesan, & Caban, 2026\)](#) further identify demographic bias and factual inaccuracies in large language model outputs, emphasizing the need for rigorous evaluation before institutional deployment. These findings suggest that Social Work and military institutions should conduct systematic bias assessments, evaluate model performance across demographic groups, review potentially discriminatory outcomes, and establish mechanisms for professional oversight, accountability, and continuous monitoring. Such measures are essential to ensure that AI-supported decisions promote fairness, protect vulnerable individuals, and remain consistent with human-centered professional responsibilities.

2.4 Data Synthesis

Data synthesis is the process of integrating, organizing, and interpreting information from multiple sources to generate a coherent understanding of a problem or situation. AI can accelerate this process by summarizing documents, identifying themes, extracting information, and generating comparative analyses. However, synthesis remains an interpretive activity. AI generated outputs can omit important contextual information, misrepresent source material, or introduce unsupported claims. Consequently, professional verification is essential.

Recent research highlights the importance of maintaining factual accuracy, contextual integrity, and human accountability throughout AI-assisted data synthesis. [Gartlehner, Kahwati, Hilscher, Thomas, Kugley, Crotty, Viswanathan, Nussbaumer-Streit, Booth, Erskine, Konet, and Chew \(2024\)](#) demonstrate the potential of large language models to support evidence extraction, while emphasizing the need to evaluate their accuracy against human-reviewed information. Similarly, [Luo, Xie, and Ananiadou \(2024\)](#) identify factual inconsistencies in AI-generated summaries, particularly in clinical contexts where inaccurate information may undermine professional decision-making. [Farquhar, Kossen, Kuhn, and Gal \(2024\)](#) further demonstrate that large language models can generate plausible but unsupported information, highlighting the importance of detecting hallucinations before relying on automated outputs. In Social Work and military welfare settings, these findings suggest that AI-generated case summaries, research syntheses, and administrative reports should be systematically checked against original records, reviewed by qualified professionals, and handled in accordance with confidentiality and data protection requirements ([Adel & Alani, 2025](#)). Such safeguards are essential to ensure that technological efficiency strengthens professional judgment without compromising individual rights, institutional accountability, or the reliability of decisions affecting vulnerable populations.

2.5 Clinical, Community, and Military Social Work

Clinical Social Work involves professional interventions addressing psychosocial, behavioral, relational, and mental health needs, while community Social Work focuses on collective welfare, participation, empowerment, social development, and responses to community-level problems. AI may support both domains through documentation, information management, research, service coordination, and decision support. However, the relational foundation of Social Work means that technological efficiency cannot replace professional empathy, contextual understanding, and accountable human engagement. Research on psychological interventions highlights the importance of individualized approaches to psychosocial needs ([Rinonce & Puspitasari, 2026](#)), while studies of AI governance emphasize that automated systems should support rather than replace human ethical judgment and institutional accountability ([Karmila & Setiawati, 2024](#)).

Military Social Work involves professional practice with military personnel, veterans, families, and communities connected to military service. It may include counseling, family support, psychosocial assessment, transition assistance, rehabilitation, crisis intervention, welfare planning, and community-based interventions. Military Social Work occupies a distinctive position because practitioners may simultaneously operate within professional ethical frameworks and institutional environments characterized by discipline, hierarchy, confidentiality, and security requirements. Research on multidimensional security governance emphasizes the importance of institutional coordination, civilian protection, and social resilience in military-related interventions ([Otakwu, 2026](#)). AI integration must therefore protect both professional obligations and legitimate institutional security interests.

2.6 Theoretical Framework

Human Centered Design Theory places the needs, experiences, capabilities, and rights of people at the center of technological design and implementation. Applied to Social Work and military settings, it requires AI systems to be developed around actual professional and service user needs rather than technological capability alone. The approach supports meaningful user participation, usability, transparency, and continuous improvement.

Sociotechnical Systems Theory views organizations as interconnected combinations of people, technologies, processes, and institutional structures. AI therefore cannot be evaluated independently of the professionals who use it, the organizational procedures within which it operates, and the social contexts in which its outputs are interpreted. This perspective is particularly relevant to military environments, where technological systems interact with formal hierarchies, professional roles, operational procedures, and accountability mechanisms.

The Social Justice Perspective emphasizes equality, participation, dignity, inclusion, and protection against discrimination. It is particularly relevant to algorithmic bias because apparently neutral technological systems may reproduce existing inequalities. Applying this perspective requires Social Work and military institutions to examine whether AI supported processes produce systematically different outcomes for particular groups and whether affected individuals have meaningful opportunities to challenge decisions.

Taken together, the literature shows that general AI ethics, professional Social Work standards, and defense oriented responsible AI principles have developed largely in parallel. Few studies examine how these bodies of guidance apply jointly to military Social Work, where welfare, health, and personnel information converge. This study addresses that gap.

3. Research Methodology

3.1 Research Design

The study adopted a qualitative documentary research design. The documentary approach was appropriate because the study sought to examine emerging ethical and professional questions rather than measure a single population through primary fieldwork. Documentary research enables the systematic examination of existing texts, policies, institutional guidelines, and scholarly publications to identify recurring themes, compare institutional perspectives, and interpret complex governance issues ([Morgan, 2022](#)). Furthermore, document analysis provides a rigorous methodological approach for examining how scientific bodies, professional associations, international organizations, and defense institutions frame the risks and responsibilities associated with AI ([Dalglish, Khalid, & McMahon, 2020](#)). As emphasized by ([Mackieson, Shlonsky, & Connolly, 2019](#)), systematic thematic analysis of documentary evidence can improve analytical transparency, methodological rigor, and the credibility of qualitative research findings.

3.2 Data Sources

The study relied on secondary materials, including peer reviewed academic literature, professional standards, international policy documents, AI governance frameworks, military policy materials, and relevant Nigerian policy and regulatory instruments. Sources were purposively selected for their relevance to AI ethics, Social Work, algorithmic bias, data governance, military AI, and human centered technological practice. Four documents form the core of the evidence base, namely the WHO guidance on the ethics and governance of AI for health ([World, 2021](#)), the NIST standard for identifying and managing bias in AI ([National & Technology, 2022](#)), the NASW resources on AI and Social Work ([National, 2024](#)), and the revised NATO AI strategy ([North, 2024](#)).

3.3 Analytical Procedure

The analysis involved thematic interpretation of recurring issues concerning accountability, bias, privacy, human oversight, data quality, professional judgment, and institutional governance. Documents were read repeatedly, coded according to these themes, and systematically compared across the health, Social Work, and defense domains. This approach is consistent with qualitative documentary analysis, which enables researchers to identify recurring patterns, examine institutional perspectives, and interpret documentary evidence systematically ([Morgan, 2022](#); [Dalglish, Khalid, & McMahon, 2020](#)). The three theoretical perspectives were subsequently employed to interpret the identified themes and derive the components of the proposed framework, reflecting the importance of conceptual coherence and theoretical engagement in thematic analysis ([Braun & Clarke, 2022](#)). The study does not evaluate specific AI products and does not claim that its conclusions apply identically to all institutional contexts.

4. Results and Discussions

4.1 Global Development of AI in Social Work and Military Practice

The global development of AI has been characterized by increasing movement from experimental applications toward institutional integration. In health and human services, AI is being considered for clinical support, research, administrative functions, and public health activities. Its potential is widely recognized, but its use must remain grounded in human rights, ethical governance, and accountability ([World, 2021](#)). Existing ethics review systems may not adequately address emerging risks involving fairness, power imbalances, and data governance, which suggests that oversight arrangements must evolve alongside the technology.

Within Social Work, AI applications are emerging in education, administration, information management, research, and professional practice. These developments can reduce routine administrative burdens and support information processing, but they also require social workers to develop digital and ethical competencies. The emphasis of the profession on human relationships makes it especially important that AI does not transform service users into datasets or reduce complex social circumstances to automated classifications.

Military institutions have also moved rapidly toward AI enabled capabilities. The revised NATO strategy explicitly seeks to accelerate responsible AI adoption while strengthening testing, assessment, data quality, and workforce capability, and it recognizes the importance of understanding how AI interacts with the military and civilian workforce ([North, 2024](#)). This creates an important space for Social Work, because military organizations require not only technological capabilities but also systems for understanding the human consequences of technological transformation. The military application of AI extends beyond weapons systems to logistics, intelligence analysis, personnel management, health services, training, resource allocation, and decision support. Ethical discussion should therefore not be restricted to autonomous weapons, since social workers may encounter AI indirectly when supporting personnel or families affected by AI supported organizational decisions.

4.2 AI in Clinical and Military Social Work

AI can assist clinical social workers with documentation, appointment coordination, summarization of case information, identification of relevant resources, and preparation of preliminary assessments. Generative AI can also support the drafting of nonfinal administrative materials and research summaries. Such applications may reduce repetitive workload and enable professionals to devote more time to direct engagement with service users ([Mikołajewska, Łaganowska, & Mikołajewski, 2025](#); [Bhargava, Bana, Zhang, Brandimarte, Choudhary, Li, & Zantedeschi, 2026](#)).

However, clinical Social Work is fundamentally relational. The behavior, emotions, family circumstances, and social environment of a client cannot be adequately represented by data points alone. AI may identify correlations without understanding the meaning of the experience of a client. An AI generated recommendation should therefore remain an input into professional deliberation rather than an independent clinical conclusion. Professional standards similarly emphasize technological competence, privacy, confidentiality, client autonomy, and the preservation of human professional judgment ([National, 2024](#)).

In military Social Work, AI may support case management for personnel and families, transition planning, rehabilitation services, veteran support, and organizational welfare programs. It may help institutions identify patterns in service demand and plan resources. Yet military populations can be reluctant to disclose sensitive information when they fear that disclosure may affect their career, reputation, or perceived fitness for duty. The use of AI must therefore be accompanied by clear explanations of what information is collected, how it is processed, who can access it, and whether it can influence administrative or personnel decisions.

A particularly important distinction exists between AI assisted support and AI determined decisions. An AI system may help a social worker organize information, but the final professional decision should remain with an accountable practitioner. This principle is consistent with the broader requirement for human oversight in ethical AI governance and with the emphasis on human responsibility and accountability in defense AI ([North, 2024](#)).

4.3 AI in Community Social Work and Military Communities

Community Social Work can benefit from AI assisted analysis of demographic, socioeconomic, and service delivery information. AI may help identify patterns in unemployment, displacement, poverty, access to health services, education, and community vulnerability. Such analytical capacity could strengthen evidence based planning and enable institutions to allocate resources more strategically.

Military communities can also benefit from such applications. Military families may experience distinctive pressures associated with deployment, relocation, separation, injury, transition, and changing socioeconomic circumstances. AI assisted analysis could help institutions identify broad patterns in family needs and plan services, and veteran support programs could use appropriately governed data systems to identify gaps in service delivery and improve referral pathways.

However, community level data can also reproduce structural inequalities. If historical records disproportionately document certain communities as high risk, an AI system trained on those records may reinforce the same classification. Community Social Work therefore requires participatory approaches in which affected communities have opportunities to question data assumptions and contribute to the interpretation of findings. AI should strengthen community participation rather than replace it.

4.4 Algorithmic Bias and Decision Making

Algorithmic bias represents one of the most significant ethical challenges associated with AI. Bias can originate in training data, sampling, variables, model construction, labels, deployment conditions, or institutional practices. Bias should be understood as a broader sociotechnical phenomenon rather than

simply as a coding error ([National & Technology, 2022](#)). This is particularly relevant to Social Work because social service datasets frequently reflect historical patterns of inequality.

If previous institutional decisions disproportionately classified a particular population as high risk, an AI model trained on those decisions may reproduce that pattern even when demographic variables are formally removed. Removing sensitive variables therefore does not automatically eliminate bias, because other variables may operate as proxies. Bias can also arise when datasets underrepresent certain groups, geographical areas, languages, or forms of social experience. Military applications create additional concerns. AI supported systems involving recruitment, personnel management, health, readiness, or welfare could produce differential outcomes if their training data are not sufficiently representative, which is why bias mitigation is treated as a requirement across the AI lifecycle in defense ([North, 2024](#)).

The appropriate response is not necessarily to reject AI. Rather, organizations should conduct structured bias assessments before deployment and monitor outcomes after deployment. Such assessments should examine data representativeness, performance across population groups, false positive and false negative patterns, unintended consequences, and the possibility that historical discrimination is reproduced. Social workers can contribute substantially to this process because their professional knowledge provides contextual insight into how social inequalities may appear in datasets.

4.5 AI Assisted Data Synthesis

AI assisted data synthesis offers considerable benefits for Social Work research and practice. Large collections of policy documents, case materials, research articles, and community reports can be processed more rapidly than through manual review alone. AI can identify recurring themes, classify information, generate preliminary summaries, and assist researchers in organizing large documentary datasets.

Nevertheless, AI generated synthesis is not equivalent to verified scholarly analysis. Generative systems can produce inaccurate information, omit important qualifications, or present unsupported statements in convincing language. The problem is especially serious when practitioners assume that fluent AI generated text is necessarily accurate. The speed of AI therefore creates a paradox, because the greater its ability to process information rapidly, the greater the need for human verification. Every important output should be checked against authoritative source material.

In military environments, data synthesis can be particularly valuable for combining welfare, personnel, training, health, or community information. However, the sensitivity of such information requires strict controls. AI tools should not be given access to classified, restricted, or personally identifiable information unless the platform has been formally authorized for that purpose and appropriate safeguards are in place. The principle of minimum necessary data should therefore guide AI assisted synthesis. Practitioners should provide only the information necessary for the task, remove unnecessary identifiers, use approved systems, and retain professional responsibility for verifying the resulting analysis.

4.6 Privacy, Confidentiality, and Informed Consent

Privacy and confidentiality are central to ethical Social Work practice. AI introduces new challenges because data may be copied, stored, processed, or transmitted through systems whose data governance arrangements are not always fully understood by users. Social workers should therefore distinguish between publicly available AI tools and institutionally approved systems capable of meeting professional confidentiality and security requirements.

The Nigerian data protection environment provides an important foundation. The Nigeria Data Protection Act of 2023 establishes rights and safeguards concerning the processing of personal data, including protections relevant to certain forms of solely automated decision making. These safeguards are particularly important where AI systems may influence decisions with significant consequences

for individuals, and they reinforce the need to distinguish between AI assistance and autonomous decision making.

Military environments require additional care because information can simultaneously be personal and institutionally sensitive. A military social worker may handle information concerning health, family circumstances, trauma, financial difficulties, or personnel vulnerability. Ethical AI practice requires clear boundaries around access, retention, disclosure, and secondary use. Informed consent should also evolve with technological practice. Service users should, where appropriate, understand when AI is being used to assist a service, what role it plays, and whether a human professional remains responsible for the decision. Transparency is particularly important where individuals may reasonably fear that AI generated assessments could influence their access to services or institutional treatment.

4.7 Proposed Human Centered AI Framework for Social Work and Military Practice

This study proposes the Human Centered AI Framework for Social Work and Military Practice (HCAI SWMP). The framework integrates professional ethics, responsible AI principles, and the particular requirements of military environments through four pillars. The first pillar is ethical governance and professional accountability. Institutions should establish clear rules specifying where AI may be used, where it requires human review, and where its use should be prohibited. Responsibility should remain identifiable at every stage, and AI should never become an institutional mechanism for transferring responsibility from professionals or commanders to technology. The second pillar is bias aware data and algorithmic assessment. Before deployment, organizations should examine datasets for representativeness, historical discrimination, missing populations, and proxy variables, test AI systems across relevant demographic and socioeconomic groups, and monitor whether actual outcomes differ from expected outcomes after deployment.

The third pillar is secure and transparent data synthesis. AI assisted synthesis should occur within approved technological environments, sensitive information should be minimized and anonymized where possible, and AI generated outputs should be verified against original records and authoritative sources before they influence professional decisions. The fourth pillar is human centered clinical, community, and military implementation. AI should enhance rather than replace relationships between social workers, service users, military personnel, veterans, families, and communities. Human professionals should retain authority over significant decisions, and service users should have appropriate mechanisms for explanation, review, and challenge where AI contributes to decisions affecting them.

Table 1. Pillars of the Human Centered AI Framework for Social Work and Military Practice

Table 1 summarizes the four pillars of the proposed framework, the core principle behind each pillar, and the key institutional actions required to put each principle into practice. The first two pillars address accountability and fairness, ensuring that responsibility remains with identifiable professionals and that historical discrimination is detected before and after deployment. The last two pillars address the handling of information and the preservation of human relationships, which are central to both Social Work ethics and military security requirements. Read together, the pillars show that responsible AI depends as much on institutional arrangements as on technical performance.

The framework is operationalized through a sequential and continuous process that begins with an assessment of whether AI is needed at all and ends with continuous audit and improvement.

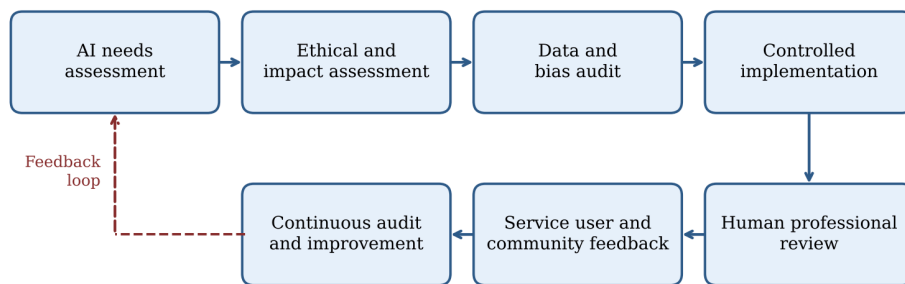


Figure 1. Operational process of the Human Centered AI Framework for Social Work and Military Practice

Figure 1 illustrates the operational process of the HCAI SWMP framework as a sequence of seven stages. The process starts with an AI needs assessment, continues through ethical and impact assessment, data and bias audit, and controlled implementation, and then moves to human professional review and feedback from service users and communities. The final stage of continuous audit and improvement feeds back into a renewed needs assessment, as shown by the dashed feedback loop. The figure therefore conveys that AI governance is a continuing lifecycle responsibility rather than a single approval exercise, a view consistent with the emphasis on assessment, testing, and validation across the lifecycle of AI capabilities (North, 2024).

4.8 Discussion

The analysis demonstrates that AI creates both opportunities and risks for Social Work and military practice. Its greatest contribution may be its ability to process information rapidly, identify patterns, and reduce repetitive administrative tasks. However, technological capability does not automatically translate into professional value. The value of AI depends on the quality of the data, the purpose for which it is used, the institutional safeguards surrounding it, and the competence of the professionals interpreting its outputs.

From a Human Centered Design perspective, AI should be introduced only where it responds to a genuine professional or service need. From a Sociotechnical Systems perspective, AI cannot be separated from organizational structures, professional roles, and institutional cultures. From a Social Justice perspective, AI must be examined for its effects on vulnerable and historically marginalized populations. Together, these perspectives demonstrate why responsible AI requires more than technical accuracy.

Military settings reinforce this conclusion. Defense institutions may have strong incentives to adopt AI because of its potential to improve information processing, situational awareness, and organizational efficiency. Responsible defense AI requires principles covering lawfulness, accountability, explainability, reliability, governability, and bias mitigation (North, 2024). These principles can inform military Social Work practice, particularly where AI interacts with personnel welfare, health, family services, and organizational decision making.

For Social Work, the most important safeguard is the preservation of professional judgment. AI can assist the social worker but should not become the social worker. The technology cannot independently understand the full emotional, cultural, relational, and structural context of the life of a person. Similarly, military institutions should not treat AI generated classifications as inherently objective. Human responsibility remains essential when technological outputs affect people. The Nigerian context presents an opportunity to institutionalize these principles early, because a national policy that identifies responsible and ethical AI as a priority provides a basis for developing sector specific guidance for Social Work, health, defense, and security institutions rather than allowing individual practitioners or organizations to determine AI governance independently.

5. Conclusions

Artificial Intelligence (AI) offers significant opportunities to enhance Social Work and military institutional practices through improved information processing, research, administrative efficiency, and decision support. However, its adoption raises ethical concerns involving algorithmic bias, privacy, confidentiality, accuracy, social justice, and professional accountability. This study emphasizes that AI should support rather than replace human judgment. The proposed Human-Centered AI Framework integrates ethical governance, bias assessment, secure data management, human oversight, and continuous evaluation to promote responsible AI adoption in Nigeria.

Four recommendations are proposed. First, professional and regulatory bodies should establish ethical standards governing AI use, data protection, informed consent, and accountability. Second, Social Work and military institutions should systematically assess and mitigate algorithmic bias. Third, organizations should strengthen data privacy safeguards and verify AI-generated information before professional use. Fourth, institutions should implement AI through carefully evaluated pilot programs, professional training, and mechanisms for stakeholder feedback and accountability.

This study is limited by its reliance on secondary sources, its focus on Nigeria, and the rapidly evolving nature of AI technologies and regulations. Future research should empirically validate the proposed framework through institutional pilot studies, case studies, and practitioner surveys. Ultimately, responsible AI integration requires strong ethical governance, institutional capacity, and continuous human oversight to ensure that technology enhances professional effectiveness while protecting human dignity, rights, and social justice.

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Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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