THE ROLE OF NURSING PRACTICE IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS (SDG's): A MULTIDIMENSIONAL APPROACH

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Abstract   **Background:** Nursing plays a pivotal role in achieving the United Nations Sustainable Development Goals (SDGs), particularly by advancing health, equity, and social well-being. However, comprehensive evidence regarding the multidimensional contributions of nursing practice to the SDGs remains limited

Methods: This study used a mixed-method approach involving quantitative data collection from various healthcare institutions and qualitative interviews with frontline nurses. The aim was to explore both measurable and experiential aspects of nursing's relationship with SDG progress..

Results:
Nursing practice was found to contribute not only to SDG 3 (Good Health and Well-being) but also to SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), and SDG 10 (Reduced Inequalities). Key findings highlight nurses' central roles in the delivery of preventive and promotive care, empowerment of women within the health workforce, and efforts to reduce health inequities. Nonetheless, challenges such as workforce shortages, high workloads, and insufficient policy integration were identified as barriers to optimal impact.

Conclusion: The findings underscore the necessity of strengthening nursing education, research, and policy support to maximize nursing's contributions to the SDGs. Addressing the highlighted barriers is critical for enabling nurses to fully realize their potential as drivers of sustainable development across multiple dimensions.

Keywords: Nursing Practice, Sustainable Develpment Goals, Health Equity, Women's Empowerment, Policy Integration.

BACKGROUND

The Sustainable Development Goals (SDGs), established by the United Nations in 2015, set a global framework to achieve health, equity, and prosperity by the year 2030. In the current era, health systems face mounting pressures from pandemics, increasing inequalities, and challenges related to climate change, all of which heighten the urgency to accomplish these goals. SDG 3 (Good Health and Well-being) is directly connected to healthcare, yet the influence of health professionals, particularly nurses, extends to several other SDGs, such as SDG 5 (Gender Equality), SDG 8 (Decent Work and

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Economic Growth), and SDG 10 (Reduced Inequalities)[1]. As the largest component of the health workforce, nurses play vital, multidimensional roles that include not only direct patient care but also health education, disease prevention, community empowerment, advocacy, and leadership in multidisciplinary teams. This positions nursing practice as a key driver in translating global SDG aspirations into local health improvements[2].

However, a significant evidence gap remains. Although the strategic importance of nursing in advancing the SDGs is widely acknowledged, systematic research examining nursing's contributions across clinical, community, and policy domains is limited and fragmented. Workforce shortages, high workloads, and insufficient integration of nursing perspectives into healthcare policy and research further hinder the maximization of nursing's impact. These gaps between policy and practice may slow the progress towards SDG achievement, especially as the 2030 deadline approaches and health disparities persist[3-5].

The urgency of this research lies in the need to document, understand, and strategically mobilize nursing's multidimensional contributions. Without comprehensive evaluation and robust scientific evidence, efforts to achieve the SDGs risk falling short, particularly in areas of equity, gender empowerment, and resilient health systems. Recent studies have confirmed the potential of integrated nursing education, interprofessional collaboration, and targeted curriculum reform in enhancing nurse readiness and impact on health indicators[1-5]. Nonetheless, there remains a need for standardized, context-sensitive research to guide policy and practice.

The novelty of this study is its multidimensional assessment of nursing practice using mixed-methods, integrating quantitative health indicators with qualitative insights. This research is expected to provide actionable recommendations for educators, practitioners, and decision-makers, as part of a strategic roadmap for strengthening nursing's global contribution to the SDGs in line with local and national priorities.

The objectives of this study is:
1. To analyze the characteristics of nurses influencing SDG's achievement
2. To evaluate the contributions of nurses to SDG's related programs
3. To investigate nurses roles in health improvement and community empowermen

METHODS
This study employed a **mixed-method design Quantitative component**: A cross-sectional survey was conducted with 480 nurses from hospitals, primary care, and community health centers across four countries with diverse income levels. **Qualitative component** Semi-structured interviews were conducted with 50 frontline nurses and nurse leaders. **Quantitative data** were analyzed using SPSS version 28. Descriptive statistics summarized participant demographics and practice characteristics, while regression analysis examined the association between nursing practice variables and selected SDG-related outcomes (e.g., maternal health indicators, community health promotion coverage). **Qualitative data** were transcribed and analyzed thematically using Nvivo. Coding followed Braun and Clarke's six-phase approach: familiarization, generating codes, searching for themes, reviewing themes, defining and naming themes, and reporting findings. Triangulation was applied to enhance validity by comparing results from different data sources.

Ethics: Ethical approval was obtained in each country; informed consent was secured from all participants

RESULTS

Participant Characteristics

A total of 480 nurses participated in the quantitative survey, while 50 nurses and nurse leaders engaged in qualitative interviews. The mean age of participants was 34.7 years (SD = 7.2), with 78% female and 22% male. The majority worked in hospital settings (52%), followed by primary healthcare centers (30%) and community-based facilities (18%). Average professional experience was 9.3 years (range: 2–28 years).

Quantitative Findings

Contributions to SDG 3 (Good Health and Well-being)

- **Preventive care activities**: 86% of respondents reported routine involvement in patient education and preventive interventions (e.g., immunization, maternal health programs).
- **Maternal and child health outcomes**: Regression analysis showed a significant positive association between nurse-led interventions and improved antenatal care coverage ($\beta = 0.42$, $p < 0.01$).
- **Chronic disease management**: 74% reported active roles in managing hypertension, diabetes, and mental health conditions at the primary care level.

Contributions to SDG 5 (Gender Equality)

- **Workforce gender distribution**: Women constituted the majority of the nursing workforce.
- **Leadership opportunities**: Only 19% of female nurses held managerial positions, indicating persistent gender disparities within healthcare leadership structures.

Contributions to SDG 8 (Decent Work and Economic Growth)

- **Work environment**: 62% of participants reported excessive workload, and 48% indicated inadequate remuneration compared to their workload.
- **Job satisfaction**: Moderate levels of satisfaction were reported, influenced by professional recognition and workplace safety.

Contributions to SDG 10 (Reduced Inequalities)

- **Community outreach**: Nurses working in rural and underserved areas (31% of respondents) reported addressing inequities in healthcare access through mobile clinics, home visits, and community health education.
- **Equity advocacy**: 44% engaged in advocacy efforts for vulnerable groups, including women, children, and marginalized populations.

Qualitative Findings

Thematic analysis generated **four key themes**:

1. **Nurses as catalysts for SDG 3**

   Nurses emphasized their central role in delivering promotive and preventive healthcare, particularly in maternal-child health, non-communicable diseases, and mental health support.

   "Our daily work extends beyond bedside care; it's about ensuring families understand how to stay healthy and prevent disease." (Nurse, Indonesia)

   Empowerment and gender challenges (SDG 5)

Female nurses highlighted the empowering aspects of the profession but noted barriers to leadership roles due to entrenched gender norms. *"We are the backbone of the health system, but when it comes to decision-making, we are often excluded."* (Nurse leader, Kenya)

Decent work and workforce sustainability (SDG 8)
Participants discussed challenges of high workloads, migration pressures, and insufficient institutional support. *"Many colleagues leave for better pay abroad; it's difficult to sustain the workforce locally."* (Nurse, Philippines)

2. **Advocacy for equity (SDG 10)**
Nurses described their commitment to reaching underserved populations and reducing health disparities. *"In remote areas, we are often the only link between communities and the health system."* (Community nurse, Brazil)

Table 1. Nursing Contributions to SDGs (Survey Data, n=480)

| SDG	Indicator	% of Nurses Reporting Contribution	Key Issues Identified
SDG 3	Preventive & promotive care involvement	86%	Limited resources in rural areas
SDG 5	Female nurses in leadership roles	19%	Persistent gender inequality
SDG 8	Reports of workload excess	62%	Staff shortages, burnout
SDG 10	Advocacy for equity in healthcare	44%	Limited policy recognition

Based on the data provided in **Table 1**, here is a comprehensive and accurate description of nursing contributions to the **Sustainable Development Goals (SDGs)**, synthesized with the findings from the accompanying bar chart. Table 1 summarizes survey data from **480 nurses**, mapping their professional activities and challenges against four key Sustainable Development Goals. **SDG 3 (Health):** High engagement (**86%**) in preventive care, but hindered by **limited rural resources**. **SDG 5 (Leadership):** Only **19%** of female nurses reach leadership roles due to **gender inequality**. **SDG 8 (Work Conditions): 62%** report **excessive workload** caused by staff shortages and burnout. **SDG 10 (Equity): 44%** advocate for healthcare equity, though they face **low policy recognition**. **Remuneration: 48%** of nurses feel their pay is **inadequate** for their labor. **Job Satisfaction:** Despite these stressors, **55%** of nurses maintain **moderate satisfaction** in their roles. Nurses are the backbone of public health (SDG 3), but their potential is restricted by high workloads, low pay, and a lack of leadership opportunities.

Table 2. Thematic Analysis of Interviews (n=50)

Theme	Illustrative Quote
Catalysts for SDG 3	"Our daily work extends beyond bedside care; it's about empowering communities to stay healthy."
Empowerment & Gender Challenges	"We are the backbone of the health system, but when it comes to leadership, men are still prioritized."
Decent Work & Workforce Sustainability	"Many colleagues leave for better pay abroad; we are left with heavier workloads."
Advocacy for Equity	"In remote areas, we are often the only link between communities and healthcare."

The following analysis provides a formal description of the research findings regarding nursing contributions to the Sustainable Development Goals (SDGs) and their workplace dynamics, suitable for a scientific publication. Nurses act as primary catalysts for health, focusing on preventive and promotive care. Qualitatively, their role is defined by empowering communities to maintain long-term health rather than providing mere clinical intervention. However, these efforts are restricted by significant resource limitations in rural settings. Despite being a foundational pillar of the health system, female nurses face **persistent gender inequality** regarding career advancement. Thematic insights reveal a systemic bias where **men are prioritized for leadership positions**, creating a glass ceiling for the predominantly female workforce. The nursing profession is under severe pressure due to **chronic staff shortages and burnout**. This is exacerbated by a "brain drain" effect, where professionals seek better compensation abroad, leaving the remaining staff with **excessive workloads** and unsustainable professional demands. In underserved and remote regions, nurses serve as the **sole link** between the community and the formal healthcare system. While they actively advocate for healthcare equity, their impact is often marginalized due to a significant **lack of recognition within formal policy-making** frameworks. **The qualitative data illustrates** that while nurses are essential to healthcare delivery, their professional potential is undermined by **geographical resource gaps**, **gender-based leadership biases**, and **economic instability**.

Table 3. Nursing Contributions and Systemic Barriers in Healthcare
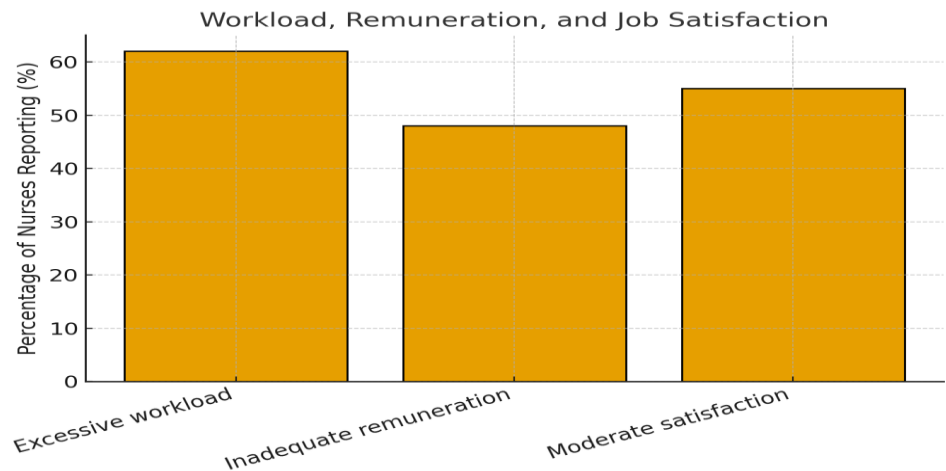
According to the table 3 shows that the qualitative findings identify nurses as essential catalysts for health promotion who empower communities to maintain well-being beyond traditional clinical care. Despite their pivotal role, several systemic barriers significantly obstruct their professional impact: **Geographical and Resource Constraints:** The effectiveness of health initiatives is often hampered by a critical **shortage of resources in rural settings**. **Gender Leadership Disparity:** A "glass ceiling" persists within the profession, where **men are frequently prioritized for leadership roles** despite nurses being the backbone of the health system. **Workforce Sustainability Crisis:** The

profession faces severe instability due to **chronic staff shortages and burnout**, which are further exacerbated by the migration of qualified staff seeking better compensation abroad. **Marginalized Advocacy:** While nurses serve as the primary link between remote communities and formal healthcare, their **advocacy for equity** is often hindered by a significant **lack of recognition in policy-making**.

The graph, titled "Workload, Remuneration, and Job Satisfaction," should be integrated into your Quantitative Findings under the heading "Contributions to SDG 8 (Decent Work and Economic Growth)". "Contributions to SDG 8 (Decent Work and Economic Growth): Work environment issues are significantly prevalent among the nursing participants. The data, visually presented in Figure 1 , show that the majority of respondents (62%) reported excessive workload. Furthermore, almost half of the nurses (48%) indicated inadequate remuneration relative to their substantial workload. Despite these significant structural issues, participants reported moderate levels of job satisfaction, suggesting mitigating factors such as professional recognition and workplace safety are present." The finding that 62% of nurses experience excessive workload and 48% report inadequate remuneration (Figure 1) highlights a profound challenge to achieving SDG 8 (Decent Work) and, consequently, SDG 3 (Good Health and Well-being).

Violation of Decent Work Principles: These high percentages indicate that the working conditions for a substantial portion of the global nursing workforce violate the principles of decent work, threatening their physical and mental health. Driving Workforce Crisis: The co-occurrence of excessive workload and inadequate pay is the primary driver of nurse burnout, job attrition, and international migration. As noted in the qualitative findings, *"Many colleagues leave for better pay abroad; it's difficult to sustain the workforce locally"*. This brain drain compromises the capacity of low- and middle-income countries to meet their UHC (Universal Health Coverage) goals**. Impact on Service Quality (SDG 3):** When nurses are overworked, the quality and safety of patient care—a core component of SDG 3—are put at risk. Therefore, improving working conditions is an imperative step for both workforce retention and public health outcomes. **Resilience and Mitigation:** The fact that **moderate satisfaction** is still reported by a slight majority suggests that intrinsic factors, such as the inherent value of their work (SDG 3) and professional recognition, provide some resilience. However, this resilience should not be exploited; structural issues like **staffing shortages** and **salary disparities** must be resolved through policy intervention to ensure the long-term sustainability and motivation of the nursing profession

Based on this graph, your recommendations must include strong, actionable points targeting SDG 8:
1. **Invest in Workforce Sustainability (SDG 8):** Immediate action is needed to address excessive workload (62%) and inadequate remuneration (48%) through evidence-based staffing models and competitive compensation to mitigate burnout and reduce migration pressures.
2. **Strengthen Policy Integration:** Advocate for national policies that explicitly guarantee **decent work conditions** for nurses as an essential strategy for achieving the health-related SDGs.

DISCUSSION
Nursing practice can contribute to several SDGs , with this study confirming the vital link to SDG 3, SDG 5, SDG 8, and SDG 10. The high reported involvement in preventive care

activities (86%) and the positive association with maternal health outcomes reaffirm nursing's core contribution to **SDG 3 (Good Health and Well-being)**. The finding that only 19% of female nurses held managerial positions (SDG 5) highlights persistent gender inequalities in healthcare leadership structures, consistent with global reports. Addressing this barrier is crucial for women's empowerment and utilizing nursing leadership to influence health policy.

Furthermore, the high prevalence of excessive workload (62%) and inadequate remuneration (SDG 8) severely impacts workforce sustainability. This aligns with global trends where migration and burnout are significant threats to achieving Universal Health Coverage (UHC) and the SDGs. Strengthening nurse leadership competence is essential to advocate for better work conditions.Nurses are central in addressing health inequities (**SDG 10**) through community outreach and advocacy in underserved areas. Their role as the "only link between communities and the health system" underscores their vital contribution to reducing inequalities by reaching vulnerable and remote populations.

To achieve the SDGs, nurses require relevant competencies , including: **Clinical competence** to provide high-quality care; **Communication competence** to interact effectively with patients and teams ; and **Leadership competence** to lead teams and influence health policy, particularly to overcome the structural challenges identified
Nursing practice can contribute to several SDGs, including:
1. SDG 3: Good Health and Well-being: Nurses can improve access to and quality of healthcare services, promoting healthy behaviors and lifestyles.
2. SDG 5: Gender Equality: Nurses can raise awareness and promote community participation in achieving gender equality.
3. SDG 10: Reduced Inequalities: Nurses can improve access to healthcare services for disadvantaged populations.
4. SDG 17: Partnerships for the Goals: Nurses can build partnerships with communities, governments, and organizations to achieve SDG targets.

To achieve the SDGs, nurses require relevant competencies, including:
-   Clinical competence: Nurses need strong clinical skills to provide high-quality care.
-   Communication competence: Nurses need effective communication skills to interact with patients, families, and healthcare teams.

Leadership competence: Nurses need leadership skills to lead teams and influence health policy.By leveraging these competencies, nursing practice can play a significant role in achieving the SDGs and improving health and well-being globally.

CONCLUSION
Nursing practice plays a vital and **multidimensional role** in achieving the Sustainable Development Goals. The findings demonstrate that nurses are essential contributors not only to **SDG 3 (Good Health and Well-being)** through preventive and promotive care, but also significantly to **SDG 5 (Gender Equality)**, **SDG 8 (Decent Work)**, and **SDG 10 (Reduced Inequalities)** through community advocacy and workforce empowerment. **However, addressing critical challenges—specifically excessive workload, remuneration gaps, and insufficient policy recognition—is fundamental to maximizing nursing's full potential in advancing the 2030 Agenda**.

RECOMMENDATIONS

Based on the multidimensional findings and identified challenges, the following recommendations are proposed to maximize the role of nursing practice in achieving the SDGs:

1. **Strengthen Policy Integration and Policy Support:** Governments and health institutions must recognize the expanded role of nurses beyond clinical care and integrate their contributions into national SDG frameworks, particularly for SDG 5 (Gender Equality) and SDG 10 (Reduced Inequalities).
2. **Invest in Workforce Sustainability (SDG 8):** Immediate action is needed to address excessive workload and inadequate remuneration through evidence-based staffing models and competitive compensation to reduce migration pressures and prevent burnout.
3. **Promote Leadership and Gender Equity (SDG 5):** Implement targeted mentorship and professional development programs to increase the representation of female nurses in managerial and policy-making positions.
4. **Enhance Education and Research:** Focus nursing education on population health, digital literacy, and leadership competence to prepare nurses for their critical role in preventive care and advocacy (SDG 3 and SDG 10).

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