

**SOCIAL MEDIA BASED-TELEMEDICINE CONSULTATION  
APPROACHES TO TREATMENT OF PROSTATE CANCER AMONG  
MALE ADULTS IN NIGERIA**

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## **Abstract**

Prostate cancer is the second leading cause of death among cancer diseases worldwide. Despite its positive benefits and outcomes, telemedicine will only become a useful health service platform when people begin to use it. Descriptive method is used for this study. Descriptive method is appropriate when a researcher intends to access the opinions, views and thoughts of a group of people with regard to a research work. Hence, it was apt to adopt survey method to retrieve data from respondents using a free online Google form link. The Google form was used to construct a Likert scale format instrument. The Google form link thereafter created was shared on WhatsApp and Facebook groups purposively selected. Findings showed that Most respondents maintained that telemedicine counselling initiates health promotion and care coordination. Findings also showed that telemedicine counselling approaches provide health outcomes comparable to those of face-to-face encounters about prostate cancer treatment. It is recommended that initiation and continued use of telemedicine counselling approaches in the treatment plans of prostate cancer among patients and medical professionals would bring about new dimensions in the offering of medical services to prostate cancer patients by medical professionals in Nigeria. Adoption of the telemedicine medical counselling approaches ensure that men irrespective of level of education, locations, social or economic consideration have access to anti-prostate cancer treatments and medical advisories.

**Keywords: Social Media, Telemedicine, Treatment Plans, Prostate Cancer, Male Adults**

## Introduction

Prostate cancer is the most common cancer among men with 21.7 percent recorded from Ibadan Cancer Registry report and 28 percent recorded from Abuja Cancer Registry report (Nwaigwe et al., 2022). Prostate gland is an important reproductive organ found in men, but it leads to prostate inflammation, and ultimately prostate cancer if it is not well taken care of (Suresh, 2022). One out of every six men is projected to develop prostate cancer at some point in their lives (Ali, 2022). The prostate cancer, as Chang et al., (2020) maintain, is the most common cancer, and one of the reasons for death among adult males in the globe. The diagnostics of prostate cancer, as Sedlackova et al., (2021) note, are currently based on three pillars: prostate biomarker, panel, imaging techniques and histological verification. Majority of cases of prostate cancer are diagnosed in men older than 65 years of age (Sedlackova et al. 2021). Patients with prostate cancer are at the increased risk of complicated severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection. Literature on prostate cancer with regard to telemedicine consultations is very scanty or non-existent. Prostate cancer that is resistant to castration has been a prominent health challenge in the lives of older men (Asogwa et al., 2022).

It is impossible to consider a healthcare system without information and communication technology. ICT, on many fronts, has enabled better delivery of healthcare to patients, and also ensures medical professionals are greatly relieved of having physical contacts with too many patients in health facilities across the globe, especially during COVID-19 pandemics in 2019. COVID-19 pandemics compelled healthcare professionals and healthcare seekers to adopt the use of telemedicine in the healthcare system globally (Nasab et al., 2023). Health interventions via smartphones, electronic devices, videoconferencing, personal computers, laptops, and other information and communication technology devices enabled more efficient healthcare seeking and delivery system. Widespread adoption and continued use of mobile healthcare technologies have led to a substantially improved accessibility and quality of health services globally (Shen et al., 2019). Social media-based telemedicine enables sharing of health information between medical practitioners and patients of prostate cancer, using zoom, video and audio calls and other digital and electronic devices (Alim and Shukla, 2019). Information and communication technologies entails computerised gadgets enabling doctors, nurses and other health professionals to provide healthcare services to patients of prostate cancer thousands of miles away (Orori, 2019).

The emergence of telemedicine enables medical professionals and patients of prostate cancer to compile data and receive feedback regarding key symptoms, risk behaviour and management (Alvarez-Perea et al., 2019). Telemedicine technology offers a solution to prostate cancer treatment adherence, but the relative effect of various types of telemedicine interventions has not been systematically studied (R et al., 2019). Although, many agencies, hospitals and medical organisations have developed social media platforms to interact with the patients and members of the public, there have been limited studies regarding the use of social media-based telemedicine in Nigeria (Kwan e al. 2023). Studies on how telemedicine is applied for healthcare exchange system between healthcare professionals and patients are extremely scanty in Nigeria. Consequently, in what ways do social media-based telemedicine counselling approaches promote adherence to treatment plans of prostate cancer among male adults in Nigeria? And what factors have ‘effectivised’ social media-based telemedicine counselling approaches, rather than face-to-face consultations, to reduce the increasing rate of prostate cancer among male adults in Nigeria? These call for systematic investigations.

## **Literature Review**

### **Theoretical Back-Up**

Latest developments on information and communication technology have birthed a new method of healthcare information exchange system. Information and Communication technology, as Anaeto Onabajo and Osifeso (2012) maintain, have potentials to transform any environment by giving birth to new social orders and pop-culture, and in a communication sense, media technology could both be a channel and a message simultaneously to media audience. The gaps between Health professionals and patients of prostate cancer have been bridged by new information and communication technologies. Telemedicine has displaced physical visits to health facilities by patients of prostate cancer, and the need to attend to a large number of patients through physical contact at health facility by medical professionals. This study is anchored on technological determinism theory. This theory was propounded by McLuhan in 1962. The theory ascribes changes in technological innovations to changes in healthcare delivery system (Ani, 2023). The basic assumption of this theory is relevant and applicable to this study because medical professionals and patients of prostate cancer are now digital natives, as they embrace information and communication technologies or digital tools and devices in the sharing of relevant healthcare information system. The theory assumes that for any society to attain development, technology is of utmost importance. Technological determinism theory assumes that media technology

influences how individuals in a society think, feel and act (Nwafor et al., 2023). The implication of the assumptions of this theory is that media audience learn and think the way they do because of their exposure to media technology (Nwafor et al., 2023).

### **Social Media-Based Telemedicine and Prostate Cancer Consultations**

Advances in technology have led to growth in virtual consultations, remote monitoring, mobile health, and digital therapeutics applied to healthcare delivery system globally (Shah et al., 2022). The number of social media users in the world is estimated to increase from 4.26 billion in 2021 to 5.85 billion in 2027 (Kwan et al., 2023). Social media has been increasing in popularity due to its prevalent accessibility and availability, cost-effectiveness and availability of information on different spheres of life (Kwan et al., 2023). Social media plays a crucial role in hospitals' internal and external communications, image and perceptions (Kumalasari and Sulistiadi, 2022). Social media is extremely important for everyone, including those seeking health services (Kumalasari and Sulistiadi, 2022). The use of social media for communication by hospitals provides health information to patients, telemedicine, influences patients' visits, promote health education, displaces limited health facilities and can reach greater number of patients and relevant publics of hospitals at the same time. The use of social media-based telemedicine approaches has proved to be useful for networking, communication, education and information dissemination (Kwan et al., 2023). Social media has become an integral part of human existence and its use has become increasingly intertwined with medical profession (Wong et al., 2019). During curfews, wars and pandemic, social media has proved useful in building and sustaining communications between patients and medical practitioners.

Telemedicine, also known as telehealth, is an exchange of remote medical consultations between a patient and a medical professional. Social media-based telemedicine has proved useful during pandemic such as COVID-19 pandemic, wars, curfews. Telemedicine, as Angga et al. (2022) observe, is referred to as the remote provision of services, including promotion, prevention, treatments, diagnoses and recovery elements, provided by health professionals who adopt the use of information and communication technology to enable data and information exchange. Telemedicine has become a cutting-edge approach feasible for prostate cancer management among men globally (Gautama, 2023). Patients are given unreserved access to medical professionals to make a complaint about their state of health. Prostate cancer is the most commonly diagnosed male cancer in the world, followed by breast and cervix uteri cancers (Patrick et al., 2022). The application

of telemedicine was maximised during pandemics in 2019 (AlSalloum et al., 2023). Prostate cancer is the second leading cause of death among cancer diseases worldwide (Britto et al., 2022). Despite its positive benefits and outcomes, telemedicine will only become a useful health service platform when people begin to use it (Hegazy et al., 2023). While health professionals represent the primary users of telemedicine in the healthcare system (Hegazy et al., 2023), healthcare seekers represent the secondary users of the telemedicine. The use of telemedicine in the provision of health advisories to healthcare seekers has brought about stress-free medical work on the part of the health workers (Hegazy et al., 2023). Telemedicine is a valid alternative to face-to-face access to professional healthcare advisories.

Remote consulting is an emerging healthcare model in the management of prostate cancer and other chronic health conditions (Starvrou et al., 2022). Tele-consultation possesses the potential to become the commonest practice of medical consultations in future (O'Neill et al. 2022). Long waiting time for treatment in the out-patient department has impacted patients' experience and multi-channels means have been made available for patients of prostate cancer to get medical services, especially those who live in remote areas (Abebe et al., 2019). Tele-medical consultations have been an important channel by which healthcare professionals connect with the patients of prostate cancer, especially during lockdown, crisis, wars and quarantine restrictions (Prithviraj, 2022). Tele-consultation has the potential to employ video conferencing technologies to diagnose and provide advice, regarding prostate cancer treatment across a distance (Chatterjee et al., 2022). Tele-consultation, as Chatterjee et al., (2022) posit, enables tele-monitoring, tele-surgery and tele-education. Telemedicine cannot replace the face-to-face consultations between medical professionals and patients of prostate cancer, but has complemented it (Suleymanova et al., 2022). The significance of tele-consultation lies in the convenience it offers both medical practitioners and patients, eliminating the need for direct physical visit to receive medical care or treatment advice (Suleymanova et al., 2022).

Using telemedicine offers some benefits to both doctors and patients. It promotes de-hospitalisation, effective interactions of partners, effective telemonitoring, more sustainable healthcare interventions, leading to reduced healthcare and social costs (Bianca et al., 2019). Telemedicine reduces the cost of healthcare system, eliminate the need for room sanitation, and other consumable, replaced by video calls, and travel cost and geographical barriers are also eliminated (Fakhruzzaman et al., 2022). Telehealth provides convenience for patients and clinicians, is faster and

patients and medical professionals could have access to one another from a location, irrespective of the distance. Telemedicine is extremely useful in underserved communities with a shortage or absence of clinical care such as in remote and far-flung areas. Telemedicine has proved to be extremely helpful during pandemics and disasters to limit the contagion of diseases and save the lives of the patients and lives of the healthcare professionals.

However, some limitations of telemedicine have been examined. Some patients, according to Barwise et al., (2023), could not express themselves while talking to medical professionals and some of the patients also feel medical professional cannot physically examine them very well from a distance (Barwise et al., 2023). Violence against medical practitioners has also been minimised with the adoption of information and communication technology to attend to medical needs of patients of prostate cancer. Apart from network disruptions, ethical and legal issues are also areas of concerns with regard to informed consent, equality of access, data protection and confidentiality, and quality of service (Fitriana and Achadi, 2022).

### **Tele-cancer and Adherence to Treatment Plans of Prostate Cancer**

Telemedicine is very crucial to promote the effectiveness of medication adherence (Gautama 2023). The application of telemedicine to the treatment of prostate cancer has a number of significant advantages. The main benefit of telemedicine is the initiation and sustenance of long-term relationships between medical professionals and patients of prostate cancer (Gautama, 2023). In this digital age, remote communication between medical professionals and patients has become inevitable to manage unforeseen health situations. Skype video telemedicine consults, most especially are gaining popularity to examine patients of prostate cancer from distant locations (Hwang et al., 2019). Instagram is a free photo and video-sharing social media application that has been utilised extensively between seekers of healthcare service and medical practitioners (Wong et al., 2019). Telemedicine can support the continuity of self-management of chronic illnesses and positively impact the future delivery of healthcare system (Gautama, 2023). Digitising healthcare delivery system has proved helpful not only during the pandemic, but also limit and halt the spread of deadly viruses. Telemedicine, through the use of information and communication technology and modern electronic devices, helps deliver healthcare services over long distances (Assaye and Shimie, 2022). Tele-cancer presupposes the use of information and communication technologies modern electronic technologies or devices for interaction between a patient of prostate cancer and a medical professional. Electronic technologies or devices that are predominantly used for treatment consultations between cancer patients and medical professionals

are the smartphones, emails, videos, and social media-based platforms such as Whatsapp Video calls, Facebook, Instagram, Tiktok and Twitter. Tele-cancer consultations have dislodged a geographical barrier between patients of prostate cancer and medical professionals. During lockdown and travel restrictions, patients and the medical professionals' resort to the use of information and communication technologies to exchange and access health information and healthcare system. Telemedicine, either mhealth or web-based, enables healthcare professionals to give health advisories, manage and monitor prostate cancer recovery process (Gautama, 2023).

Like any other ailments, early detection and treatment of prostate cancer give the patients a better chance of survival (Nwaigwe et al., 2022). Prostate cancer is reputed to affect the elderly men with a media age of presentation being 68 years (Haritha et al., 2022). According to Chatterjee (2012), prostate cancer is growing at alarming rates and ignorance is responsible for the increasingly alarming rates of prostate cancer among male adults between the age groups of 51 and 70 years. The best techniques for the diagnosis of prostate cancer according to Patric et al., (2022), is prostate biopsy. To diagnose prostate cancer disease, supervised machine learning and the researchers increasingly used deep learning techniques (Britto et al., 2022). The management and treatment of prostate cancer is undergoing rapid changes. Novel imaging tools for diagnosis have been introduced and treatment of high-risk localized, locally advanced and metastatic disease has changed very much in recent years (Templeton et al., 2023). However, resource limitations, early detection, diagnosis, and curative treatments are not available for many men and there are barriers to the treatment of advanced stage metastatic prostate cancer (Bosland et al., 2023). Treatment outcomes are important to guide decision-making in clinical practice (Menges et al., 2023). However, none of the possible treatments such as active surveillance, watchful waiting, radical prostatectomy or radiation therapy have been proven superior in terms of prostate cancer control (Han et al., 2023). Prostate cancer treatment can significantly impact the erectile functions, and penile rehabilitation has been proposed to improve the impacts (Prasad et al., 2023). Low risk prostate cancer patients are active candidates for active surveillance (Whang et al., 2023). More and more urologists are doing active surveillance for favourable intermediate risk prostate cancer patients (Whang et al., 2023). Clinical guidelines recommend a combination of chemotherapy, radiotherapy and surgery for the management of newly diagnosed prostate cancer (Millican and Wong,

2023). However, standard of treatment may be high risk or not feasible after prior treatment for prostate cancer (Millican and Wong, 2023).

## Methodology

Descriptive method is used for this study. E-questionnaire was distributed among doctors via social media announcements, specific doctors' associations in messengers and direct messages. Descriptive method is appropriate when a researcher intends to access the opinions, views and thoughts of a group of people with regard to a research work. Hence, it was apt to adopt survey method to retrieve data from respondents using a free online Google form link. The Google form was used to construct a Likert scale format instrument. The Google form link thereafter created was shared on WhatsApp and Facebook groups purposively selected. The respondents were different medical groups and medical associations. The sample size of this study is 210. The google form filled online were sent to Facebook and Whatsapp platforms or groups of respondents across Nigeria. The message which accompanied the URL link encouraged participants to further share the link. Of the 210 respondents, only 200 of those copies of questionnaire were properly and returned.

## Results

**Table One: Have you used any of the social media for telemedicine counselling on Prostate Cancer?**

<b>Options Percentage</b>		<b>Frequency</b>
<b>Yes</b>	<b>101</b>	<b>50.8%</b>
<b>No</b>	<b>99</b>	<b>49.2%</b>
<b>Total</b>	<b>200</b>	<b>100</b>

**Source: Fieldwork, 2024**

Table 1 shows that 101 respondents representing 50.8% stated that they have used a social media platform for telemedicine counselling approaches for treatment plans of prostate cancer, while 98 respondents representing 49.2% stated they have not used a social media platform for telemedicine counselling approaches for treatment plans of prostate cancer in the past.

**Table Two: In what ways do telemedicine counselling approaches promote adherence to treatment plans of Prostate cancer among Male Adults in Nigeria?**

<b>Options</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Surveillance of Prostate Cancer Recurrence</b>	40	20%
<b>Subsequent Prostate Cancer Screening</b>	27	13.5%
<b>Management of Long-and Short-Term Psycho-Social Effects</b>	37	18.5%
<b>Health Promotion and Coordination of Prostate Cancer</b>	53	23.5%
<b>Proper Monitoring of the Healing Process of the Patients of Prostate Cancer</b>	43	21.5%
<b>Total</b>	200	100

**Source: Fieldwork, 2024**

Table 2 shows that 40 respondents representing 20% affirmed that telemedicine counselling promotes surveillance for prostate cancer treatment, 27 respondents representing 13.5% stated that telemedicine counselling promote subsequent prostate cancer screening, 37 representing 18.5% stated that telemedicine counselling promote management of long-term and short-term psycho-social effects of prostate cancer, 53 respondents representing 26.5% maintained that telemedicine counselling initiates health promotion and care coordination about prostate cancer, while 43 respondents representing 21.5% averred that telemedicine counselling aids effective monitoring of the healing process of the patients of prostate cancer.

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<b>Total</b>	<b>200</b>	<b>100</b>

Source: Fieldwork, 2024

Table 3 shows that 30 respondents representing 15% maintained that telemedicine counselling expands prostate cancer patients' access to healthcare irrespective of geographical locations, 42 respondents representing 21% affirmed that

telemedicine counselling improves prostate cancer patients' healthcare satisfaction, 30 respondents representing 15% affirmed that telemedicine counselling approaches reduce disparities in prostate cancer patients' care delivery system, 84 respondents representing 42% affirmed that telemedicine counselling approaches provide health outcomes comparable to those of face-to-face encounters about prostate cancer treatment, while 14 respondents representing 7% maintained that telemedicine counselling approaches reduce inefficiency in the provision of healthcare

## **Discussions**

Most respondents maintained that telemedicine counselling initiates health promotion and care coordination. The findings corroborate Alvarez-Perea et al., (2019) whose study found that emergence of telemedicine enables medical professionals and patients of prostate cancer to compile data and receive feedback regarding key symptoms, risk behaviour and management. Telemedicine technology offers a solution to prostate cancer treatment adherence,

Telemedicine counselling approaches provide health outcomes comparable to those of face-to-face encounters about prostate cancer treatment. The findings corroborate Hegazy et al., (2023) whose study found that use of telemedicine in the provision of health advisories to healthcare seekers has brought about stress-free medical work on the part of the health workers. Telemedicine is a valid alternative to face-to-face access to professional healthcare advisories. Long waiting time for treatment in the out-patient department has impacted patients' experience and multi-channels means have been made available for patients of prostate cancer to get medical services, especially those who live in remote areas.

## **Conclusion**

The emergence of telemedicine enables medical professionals and patients of prostate cancer to compile data and receive feedback regarding key symptoms, risk behaviour and management. Telemedicine technology offers a solution to prostate cancer treatment adherence, but the relative effect of various types of telemedicine interventions has not been systematically studied.

Although, many agencies, hospitals and medical organisations have developed social media platforms to interact with the patients and members of the public, there have been limited studies regarding the use of social media-based telemedicine in Nigeria. Studies on how telemedicine is applied for healthcare exchange system between healthcare professionals and patients are extremely scanty in Nigeria

## **Recommendations**

It is recommended that initiation and continued use of telemedicine counselling approaches in the treatment plans of prostate cancer among patients and medical professionals would bring about new dimensions in the offering of medical services to prostate cancer patients by medical professionals in Nigeria. Adoption of the telemedicine medical counselling approaches ensure that women irrespective of level of education, locations, social or economic consideration have access to anti-breast cancer treatments and medical advisories.

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