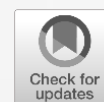


Short-term evaluation of the AIDET communication framework at a tertiary teaching hospital in Ghana

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Abstract

Background: Effective communication is crucial for health professionals who engage with patients daily. The AIDET (Acknowledge, Introduce, Duration, Explanation, and Thank you) communication framework can facilitate the attainment of patient-centered care by ensuring that clinical staff establish effective communication and interaction with patients.

Objective: This study aimed to assess the impact of the AIDET communication framework on improving patient satisfaction with healthcare services.

Methods: A two-group posttest design was employed to evaluate the short-term outcomes of AIDET in enhancing patient satisfaction scores and health worker-patient communication in Ghana. A modified AIDET tool and three components of the PSQ-III instrument (comprising communication, interpersonal interaction, and time) were administered to patients without AIDET experience (comparison group) from February to March 2021 and patients with AIDET experience (intervention group) from November 2021 to January 2022, following AIDET training intervention conducted from April to October 2021. Data analysis included the computation of frequencies, means (SD), and independent *t*-tests.

Results: Patients without AIDET experience viewed the importance of AIDET at 81.6%, compared to 96.6% for patients with AIDET experience. Overall, patients

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were not satisfied with all PSQ-III components combined. However, more than 80% of patients reported satisfaction with the time component of the PSQ-III, with a higher proportion (90.8%) for the intervention group. The patients in the intervention group rated the importance of AIDET significantly higher (48.51 ± 5.79) compared to patients in the comparison group (41.98 ± 6.53), with a mean difference of 6.53 (95% CI = -7.867 - 5.184; SD ± 0.68 ; $p < 0.001$).

Conclusion: The use of AIDET in communicating with patients and their relatives is well-positioned to assist health facilities in achieving higher patient satisfaction scores and positive patient outcomes. However, the study revealed that using AIDET may not yield all positive outcomes in the short term.

Keywords

Ghana; AIDET; health communication; patient satisfaction; personal satisfaction; patient-centered care

Background

Healthcare systems are increasingly transitioning into performance-based models, significantly focusing on discovering new approaches to enhance patient outcomes. These outcomes are undeniably intertwined with patient satisfaction. However, due to a communication gap, patient experience and satisfaction often fall short of expectations. Thus, effective communication is perceived as crucial for health professionals who engage with patients daily (Howick et al., 2018; Predila, 2020). The Institute for Healthcare Communication has highlighted that studies conducted over the last three decades affirm that a clinician's capacity to explain, listen, and empathize can profoundly impact patient satisfaction and the overall experience of care (Institute for Healthcare Communication, 2016).

In healthcare provision, the communication of health information is considered appropriate when it adopts a patient-centered approach. This involves communicating with the patient in a non-technical language, actively listening, and empathizing with them. Implementing the AIDET communication framework has been demonstrated to facilitate the realization of patient-centered care effectively. This framework ensures that healthcare providers and staff members actively listen, comprehend, and empathize with their patients and families (Joseph, 2020). When healthcare professionals neglect to employ the AIDET framework, patients frequently experience feelings of insignificance, neglect, and being uninformed (Barber, 2018).

AIDET is an effective technique to facilitate and enhance productive communication skills, thereby increasing the likelihood of a positive and enduring impact on patients. Burgener (2017) demonstrated that the AIDET

communication technique can decrease the likelihood of patients and their families pursuing legal action against healthcare organizations. The utilization of the AIDET communication framework by healthcare providers during patient interactions minimizes miscommunication (Allen et al., 2016; Scott, 2012). Consequently, its acceptance by leadership and employees within health facilities, along with its correct implementation, becomes a pivotal contributor to the patient satisfaction score of these facilities.

Fu et al. (2020) explored the impact of the AIDET communication model on reducing anxiety and enhancing patient satisfaction with care services. Their results indicated that patients experienced reduced anxiety when exposed to the AIDET mode of communication. They concluded that integrating the AIDET communication mode into nursing services during cataract daytime operations alleviates patient tension and anxiety associated with treatment, enhancing their satisfaction with care services.

Similarly, Joseph (2020) assessed the integration of the AIDET framework and its correlation with patient satisfaction in primary care settings. The findings revealed that implementing the AIDET framework significantly enhances patient satisfaction with healthcare providers. The study also highlighted the improvement in communication between providers and medical assistants with patients, consequently improving access to medical care (Joseph, 2020).

Patient-centered care necessitates the involvement of patients and their family members in mutual decision-making to enhance the quality of care and patient satisfaction. Achieving this objective hinges significantly on effective patient communication. Implementing the AIDET communication framework intervention is crucial in improving communication between health workers and patients, consequently impacting patient satisfaction scores. The study aimed to assess the influence of the AIDET communication framework on improving patient satisfaction with healthcare services.

Our study was grounded in the Theory of Planned Behavior, a health communication theory that posits individuals act rationally based on their attitudes, subjective norms, and perceived behavioral control. These factors underpin the decision-making process, even if they are not actively or consciously considered. The theory emphasizes the individual's intention as the pivotal factor in predicting behavior. Thompson (2014) states that the Theory of Planned Behavior anticipates people will act on their intentions when they possess the required skills for performing the behavior.

In the current study, where the AIDET communication framework was implemented for health worker-patient communication, the three factors of the Theory of Planned Behavior are described as follows: 1) Attitude includes the

perspective toward effective communication with patients in general and specifically using the AIDET approach. 2) Subjective norms involve social pressures, including the expectations of others and the significance an individual place on these expectations. In this context, patients anticipate good, easily understandable communication from healthcare professionals. 3) Perceived behavioral control relates to an individual's capability to execute a particular behavior. It specifically pertains to the self-efficacy of healthcare professionals regarding their adeptness in utilizing the AIDET communication framework.

Methods

Study Design

This study employed a two-group posttest design to assess the impact of the AIDET communication framework on enhancing patient satisfaction scores and health worker-patient communication. This design facilitated the observation of two distinct groups at two different time points: patients without AIDET experience (comparison group) and patients with AIDET experience (intervention group). Any changes in outcomes were linked to the intervention. This design was pivotal for the study as it provided a cost-effective approach to scrutinize the benefits of the intervention, offering a foundation for future investigations.

Samples/Participants

The study was conducted at the University of Ghana Medical Center (UGMC), an ultra-modern medical facility that provides world-class quaternary-level health services in Ghana, Africa, and beyond. UGMC focuses on service delivery, research, medical training, and simulation. It commenced operations in 2018, initially offering three outpatient department (OPD) services in Pediatrics, Obstetrics and gynecology, Family Medicine, and OPD Pharmacy. Currently, UGMC is fully operational, offering a comprehensive range of medical departments and units, including services such as General Surgery, Cardiology, Urology, Emergency Medicine, Diagnostics, Gastroenterology, Dermatology, Ophthalmology, etc.

The study population comprised patients (both in-patients and out-patients) accessing health services at UGMC. They were included to provide feedback for measuring the effectiveness of the AIDET communication intervention in UGMC. Throughout the study period, from March 2021 to December 2022, 60 to 100 patients accessing services at the OPD were recorded on a daily basis. Determining the study sample size based on the total number of patients accessing healthcare services at UGMC for comparison and intervention groups

can be challenging. The sample size for patients in both the comparison and intervention groups' surveys was determined using the following assumptions: a significance level (α) of 0.05, a statistical power ($1-\beta$) of 0.80, an assumed proportion of discordant pairs of 0.80, an assumed difference in the proportion of 0.1, and two-tailed tests. Stata IC version 16 software was utilized to calculate the sample size employing McNemar's test, comparing two correlated proportions and specifying the discordant proportion. According to the calculation, the study requires a minimum sample size of 155 patients for each patient survey.

Intervention

In this study, the health facility adopted the AIDET communication framework as the standard for health worker-patient communication, requiring training for all facility staff. With AIDET becoming mandatory, a favorable attitude towards the AIDET communication framework was presumed. The training was organized to enhance staff self-efficacy (perceived behavioral control) in utilizing the AIDET communication framework. Staff underwent instruction on employing the AIDET communication framework, watched videos demonstrating its application in patient communication, and engaged in role-playing exercises to practice AIDET strategies. To encourage AIDET adoption, we supported a positive subjective norm of staff by visibly displaying posters, pictures, and stickers on AIDET in consulting rooms and other work areas of health workers.

AIDET, an acronym standing for Acknowledge the patient; Introduce yourself; (Indicate the) Duration of the assessment, treatment or interaction; Explain the process and reasons for the evaluation, treatment or interaction; and Thanking the patient for their time and co-operation, and ask "If there is anything else that can be done for the patient while indicating your availability to help." The implementation of the AIDET communication framework commenced at UGMC in April 2021. As an organizational policy for delivering quality healthcare, all UGMC staff directly or indirectly interacting with patients underwent training on the AIDET framework throughout April to October 2021. The training manual was submitted for Continuing Professional Development (CPD) points certification to the Medical and Dental Council, Pharmacy Council, Allied Health Professional Council, and the Nursing and Midwifery Council. Each three-hour training session accommodated an average of 25 participants to ensure effectiveness. The sessions incorporated PowerPoint presentations, video demonstrations, role-playing activities, and competency quizzes to reinforce learning. Additionally, AIDET notices and signs were strategically placed in

patient rooms/wards, consulting rooms, and various locations within the facility to serve as reminders and encourage consistent use of the AIDET framework in patient communication.

Instruments

The instrument used for the study was a questionnaire, which included basic background information about the patients, an AIDET tool developed by the [Studer Group \(2005\)](#) and modified for this study, and a Patient Satisfaction Questionnaire PSQ-III developed by the [RAND Corporation \(n.d.\)](#); [Ware et al. \(1976\)](#) and modified for this study, consisting of components on communication, interpersonal interaction, and time. The Modified AIDET tool assessed the importance of AIDET to patients, while the modified PSQ-III evaluated patient satisfaction with staff and services. The modified AIDET tool consisted of 18 questions on a 3-point Likert scale, while the modified PSQ-III comprised 18 questions on a 5-point Likert scale.

Data Collection

Questionnaires were administered face-to-face to inpatients and outpatients who had completed their interaction with clinical staff on the day of discharge. The same questionnaire was used to collect data for both the comparison and intervention groups. This approach was taken to gauge the effectiveness of the AIDET communication framework implementation from the patient's perspective. Data collection for the comparison group took place between February and March 2021, while AIDET training for staff occurred between April 2021 and October 2021. The data collection for the intervention group occurred between November 2021 and January 2022.

Data Analysis

The Statistical Package for Social Sciences (SPSS) version 23 was utilized for data analysis. Patients' responses to the modified AIDET tool were scored from 18 (lowest) to 54 (highest). These scores were divided into two categories to illustrate respondents' views on AIDET. Scores below 36 (the midpoint) categorized AIDET as unimportant, whereas scores ranging from 36 to 54 classified AIDET as necessary. Likewise, the PSQ-III utilized a scoring system from 18 (lowest) to 90 (highest), with negatively worded statements reversed to measure patient satisfaction. PSQ-III scores were then converted to a range of 0 to 100 to represent a percentage score for patient satisfaction. Descriptive data analysis included frequency tables, percentages, and means and standard deviation computations. An independent *t*-test was performed to compare the

means of patient satisfaction and the importance attributed to AIDET between the two groups of patients.

Ethical Considerations

Permission to conduct the study was requested and granted by the hospital's management. Prior to questionnaire administration, all participants provided consent to participate in the study. Furthermore, as part of the data collection process, the names and other identifiers of the participants were not collected. The study was reviewed and approved by the University of Ghana Medical Centre Institutional Review Board (UGMC-IRB) under approval number UGMC-IRB/MSRC/0002/2020.

Results

Participants' Characteristics

The participants in the comparison group were predominantly outpatients (86.8%), whereas the majority of participants in the intervention group were mostly inpatients (60.9%). The age of participants ranged from 16 to 92 years in the comparison group (range = 77, mean = 43 ± 16.5 years), and in the intervention group, participants' ages ranged from 15 to 89 years (range = 74, mean = 41 ± 15 years). In both groups, there were more female patients than males, constituting approximately two-thirds of the patients (comparison group = 69.1%; intervention group = 64.4%) interviewed in both periods, compared to one-third of the patients who were males (comparison group = 30.9%; intervention group = 35.6%). Regarding education, about 76% of the patients held a university degree or its equivalent (Table 1).

Table 1 Background information on patients

Variables	Comparison group (N = 152)		Intervention group (N = 174)	
	f	%	f	%
Type of patient				
In-patient	20	13.2	106	60.9
Out-patient	132	86.8	68	39.1
Sex				
Male	47	30.9	62	35.6
Female	105	69.1	112	64.4
Education level				
No formal education	3	2.0	2	1.1
JHS/JSS/middle school	6	3.9	14	8.0
SHS/TVET	28	18.4	25	14.4
Tertiary	115	75.7	133	76.4
Age	Mean (SD) = 43 (± 16.5); Range = 77 (Min-Max = 16-92)		Mean (SD) = 41 (± 15.0); Range = 74 (Min-Max = 15-89)	

Patient View on the Elements of AIDET Communication Framework

Out of the 152 patients in the comparison group, the majority (81.6%) acknowledged the importance of using the AIDET communication framework in their interactions with patients and patient relatives. This percentage increased to 96.6% among the intervention group, signifying a higher recognition of the importance of the AIDET communication framework (Table 2). The observed proportional change indicates that staff incorporated some elements of the AIDET communication framework in their communication with patients and relatives. However, the extent of usage cannot be conclusively determined based solely on this proportional change observed within the specified period.

Table 2 Patient view on AIDET

	Comparison group (N = 152)		Intervention group (N = 174)	
	f	%	f	%
Not important	28	18.4	6	3.4
important	124	81.6	168	96.6

Patient Satisfaction with Provision of Health Services

The Patient Satisfaction score aimed to categorize and pinpoint the proportions of clients who were dissatisfied and satisfied with healthcare provision concerning communication, personal interaction, and their perception of time spent with healthcare providers. According to the results in Table 3, the majority of clients (over 80%) expressed dissatisfaction with the communication and personal interaction of staff. This aligns with the overall satisfaction levels, where over 95% of clients in both the comparison and intervention groups were dissatisfied with healthcare provision regarding these three assessed elements of satisfaction. However, satisfaction regarding the time, the majority of clients (84.2%) reported satisfaction. This satisfaction regarding the time spent with healthcare providers increased to 90.8% among clients in the intervention group.

Table 3 Description of patient satisfaction

	Comparison group (N = 152)		Intervention group (N = 174)	
	f	%	f	%
Communication				
Not satisfied	125	82.2	160	92.0
Satisfied	27	17.8	14	8.0
Personal interaction				
Not satisfied	148	97.4	170	97.7
Satisfied	4	2.6	4	2.3
Time				
Not satisfied	24	15.8	16	9.2
Satisfied	128	84.2	158	90.8
Overall satisfaction				
Not satisfied	146	96.1	166	95.4
Satisfied	6	3.9	8	4.6

The utilization of AIDET communication frameworks in hospitals has demonstrated an improvement in client satisfaction. Consequently, client satisfaction was evaluated for two groups to assess the impact of the AIDET training intervention. Table 4 outlines the assessment of three areas of client satisfaction: communication, personal interaction, and time. The results indicated that in the comparison group, patients recorded a mean score of 18.1711 (SD ± 2.82) for communication, falling below the potential midpoint. This suggests that client satisfaction with staff communication was below 50%, translating to a computed score of 39.89% (SD ± 10.07) within the 100% score range. Similarly, personal interaction showed a mean score (17.71; SD ± 2.859) below the anticipated midpoint. However, satisfaction with time had a score of 9.65 (SD ± 1.338), surpassing the potential midpoint, leading to an overall satisfaction score of 55% (SD ± 11.15). The overall satisfaction, with a mean score of 45.539 (SD ± 4.79), remained below the anticipated midpoint of 54, resulting in an overall client satisfaction of 38.23% (SD ± 6.66). The implementation of the AIDET training intervention was expected to enhance client satisfaction. However, the results from the intervention group displayed a decrease in scores for communication, personal interaction, and overall satisfaction. Nonetheless, satisfaction regarding time increased from a mean score of 9.65 (SD ± 1.34) among the comparison group to 10.34 (SD ± 1.54) among the intervention group. In percentage terms, client satisfaction scores with time increased from 55.4% (SD ± 11.15) to 61.16% (SD ± 12.84).

Table 4 Patient satisfaction scores

Patient satisfaction subscales	Score range					% (0 -100 range)	
	Low	High	Mid-Point	Mean	SD	Mean	SD
Comparison group							
Communication	7	35	21	18.17	2.82	39.89	10.07
Personal interaction	8	40	24	17.72	2.86	30.37	8.94
Time	3	15	9	9.65	1.34	55.43	11.15
Overall Satisfaction	18	90	54	45.54	4.79	38.23	6.66
Intervention group							
Communication	7	35	21	16.14	3.41	32.65	12.17
Personal interaction	8	40	24	16.53	2.79	26.65	8.73
Time	3	15	9	10.34	1.54	61.16	12.84
Overall Satisfaction	18	90	54	43.01	5.83	34.72	8.09

Evaluation of Patient Satisfaction and Importance of AIDET Communication Framework

An independent sample t-test was conducted to compare the means of patients' satisfaction scores between the comparison group and the intervention group. The results presented in Table 5 revealed that patients in the comparison group

rated the importance of AIDET with a mean of 41.98 (± 6.53), whereas the intervention group rated it with a mean of 48.51 (± 5.79). This resulted in a mean difference of 6.53 (95% CI = -7.867-5.184; SD ± 0.68 ; $p < 0.001$). These findings suggested that following the AIDET training and its implementation by staff, patients with AIDET experience rated its importance significantly higher than patients without AIDET experience. The difference in the observed means was statistically significant at an alpha level of 1%.

Further, patients scored satisfaction on communication, a component of the PSQ-III, at 39.89% (± 10.07) for those in the comparison group and 32.65% (± 12.17) for those in the intervention group, resulting in a mean difference of 7.24% (95% CI = 4.784-9.695; SD ± 1.25 ; $p < 0.001$). Similarly, patients scored satisfaction on Personal Interaction, another component of the PSQ-III, at 30.37% (± 8.94) for the comparison group and significantly lower at 26.65% (± 8.73) for the intervention group. A mean difference of 3.71% (95% CI = 1.786-5.641; SD ± 0.98 ; $p < 0.001$) was observed, indicating that patients in the comparison group rated communication and personal interaction of staff higher than those in the intervention group.

Table 5 Comparison of means between comparison and intervention groups

Variables		N	Mean (SD)	Mean diff (SD)	95% CI		Sig
					Lower	Upper	
AIDET	Comparison	152	41.98 (± 6.53)	-6.53 (± 0.68)	-7.86732	-5.18365	<0.001*
	Intervention	174	48.51 (± 5.79)				
Communication	Comparison	152	39.89 (± 10.07)	7.24 (± 1.25)	4.78436	9.69515	<0.001*
	Intervention	174	32.65 (± 12.17)				
Personal Interaction	Comparison	152	30.37 (± 8.94)	3.71 (± 0.98)	1.78602	5.64129	<0.001*
	Intervention	174	26.65 (± 8.73)				
Time	Comparison	152	55.43 (± 11.15)	-5.73 (± 1.34)	-8.37083	-3.09146	<0.001*
	Intervention	174	61.16 (± 12.84)				
Overall Satisfaction	Comparison	152	38.22 (± 6.66)	3.51 (± 0.83)	1.88045	5.13722	<0.001*
	Intervention	174	34.72 (± 8.09)				

*Statistically significant at 0.01 alpha

Despite the expectation that the AIDET communication would enhance patient satisfaction, it did not improve satisfaction with staff communication and personal interaction. However, regarding the third element of the PSQ-III considered in this study – patient satisfaction with time – the intervention group recorded a higher mean score (mean = 61.16%; SD ± 12.84) compared to the comparison group (mean = 55.43%; SD ± 11.15). The mean difference for patient satisfaction with time was recorded as 5.73% (95% CI = -8.370-3.091; SD ± 1.34 ; $p < 0.001$), indicating a significant improvement in patient satisfaction with time after AIDET communication framework training. This suggests that staff may predominantly utilize the duration component of the AIDET communication framework, resulting in improved client satisfaction with time.

However, despite the improvement in patient satisfaction with time, overall patient satisfaction (composed of PSQIII components – communication, personal interaction, and time) decreased from a satisfaction score of 38.22% (± 6.66) in the comparison group to 34.72% (± 8.09) in the intervention group. The mean difference in overall satisfaction of 3.51% (95% CI = 1.880-5.137; SD ± 0.83 ; $p < 0.001$) was statistically significant at a 1% alpha level. This indicates a reduction in overall patient satisfaction concerning PSQIII components relevant to the AIDET and general health worker-patient communication following the implementation of the AIDET communication framework.

Discussion

The AIDET communication framework was crucial in interacting with patients and their relatives, with almost all respondents in the intervention group acknowledging its significance. Patients in the intervention group rated the importance of the AIDET communication framework significantly higher after the staff training than patients in the comparison group. Therefore, patients exposed to the AIDET communication framework valued its importance more than those who recognized the significance of good communication with health professionals.

However, this trend was not reflected in client satisfaction assessed in three areas: communication, interpersonal interaction, and time. The study revealed that the majority of patients were dissatisfied with health professional communication and interpersonal interaction, influencing their overall satisfaction score. A similar study using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) found minimal effects on communication domain questions, suggesting that a single intervention might not sufficiently illustrate changes in patient outcomes ([Register et al., 2020](#)).

Moreover, research has indicated that patient satisfaction with health service delivery is influenced by various factors beyond good communication, including sociodemographic aspects such as education, age, religion, and place of residence ([Adhikari et al., 2021](#); [Amporfro et al., 2021](#); [Djordjevic & Vasiljevic, 2019](#)). Even within communication, satisfaction levels are influenced by the duration of communication, the time allocated for questions, and interest shown in patients' personal situations ([Katsaliaki, 2022](#)). Nevertheless, other studies have highlighted the significant impact of AIDET education on provider-patient communication, enhancing patient safety and satisfaction ([Roh et al., 2022](#); [Thangkratok et al., 2017](#)).

However, the component of time, examined through the PSQIII, significantly improved patient satisfaction scores. Patient satisfaction with staff

communication regarding time improved among the intervention group, suggesting that the UGMC staff prominently utilized the duration aspect of the AIDET framework. This is crucial as patients being aware of process durations can reduce their anxiety levels. This differs from the findings by [Allen et al. \(2016\)](#), where patients could not identify the duration element of AIDET, indicating that health workers were not communicating exact task times to patients.

Overall, the patient satisfaction score on PSQ-III components relevant to the AIDET communication framework decreased significantly post-implementation of the AIDET training, indicating its limited short-term effectiveness. However, the significant improvement in patient satisfaction with time suggests that the AIDET framework could potentially be effective in the long run, aligning with studies that found substantial improvements in patient care, doctor-patient communication, and satisfaction through the AIDET framework ([Joseph, 2020](#); [Li et al., 2022](#); [Roh et al., 2022](#)).

It is essential to acknowledge several limitations in interpreting these results. The evaluation period for the AIDET communication framework's impact was short, potentially insufficient to observe its full effects, as studies have noted impacts over a three-year period ([Scott, 2012](#)). Moreover, attitudes, a crucial component of the theory of planned behavior, typically take longer to form. Therefore, sustainable outcomes from AIDET implementation necessitate continuous and prolonged training, data collection, and analysis. Additionally, the inclusion of new staff trained during the intervention group data collection might have limited the impact on patients' satisfaction scores due to the shortened period for their training and exposure to the framework.

Conclusion

Effective communication with patients is crucial in healthcare as it ensures patient compliance, reduces anxiety levels, and enhances patient satisfaction. The adoption of the AIDET communication framework is aptly positioned to assist healthcare facilities in attaining higher patient satisfaction scores and favorable patient outcomes. However, as demonstrated by the study, the immediate implementation of AIDET may not yield all the expected positive outcomes. The effectiveness of AIDET becomes apparent over the long term, emphasizing the need for continuous training of health professionals and ongoing monitoring of its application in communication with patients.

Declaration of Conflicting Interest

The authors declared no conflict of interest in this study.

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Authors' Contributions

All authors made a significant contribution to the research according to ICMJE authorship criteria. JKB: Conceptualization and the draft of the manuscript (30%); DF: Supported data collection (10%); F.K: Review of the manuscript (5%); GK: Facilitation of training and review of the manuscript (25%); NAKD: Facilitation of training, conceptualization, and draft of the manuscript (30%). All authors reviewed and approved the manuscript.

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Data Availability Statement

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Declaration of the Use of AI in Scientific Writing

None declared.

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