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EFFECT OF APPLYING AIDET COMMUNICATION MODEL AND SUPPORTIVE CARE DURING LABOR ON BIRTH EXPERIENCE

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Abstract

Background: Childbirth is a significant and unforgettable event in a woman's life. Many primiparous women face the process alone with lack of support, experiencing fear of the unknown, fatigue, lack of previous experience, fear of complications, and may be influenced by negative birth stories. Therefore, the aim of the current study was to evaluate effect of applying AIDET communication model and supportive care during labor on birth experience. Design: A quasi experimental research design (pretest / posttest non-equivalent control group design) was adopted. The study was conducted at The current study was carried out at the fourth floor of obstetric and gynecological building in Al Gamaa hospitals which is affiliated to the general organization for teaching hospitals in Zagazig town El Sharquia government.- Sample: A convenience sample of 124 primiparous women in the beginning of active phase (cervical dilation of 4 cm). Tools: 1) Structured Interview Questionnaire Schedule 2) Numerical Pain Rating Scale (NPRS); 3) Anxiety Assessment Scale for Pregnant Women in Labor (AASPWL) 4) partograph; and 5) The birth satisfaction scale (BSS). Results: No significant differences were observed at 4 cm cervical dilatation. However, pain scores at 5 cm and 6 cm were significantly lower in the intervention group ($p < .001$). Anxiety levels at 6 cm were significantly reduced in the study group ($p < .001$), with a large effect size. Birth satisfaction scores were significantly higher among women receiving the intervention ($p < .001$). No significant difference was found in labor duration ($p > .05$).. Conclusion: It can be concluded from the current study that the AIDET communication model and supportive care had a positive impact on pain, anxiety, and birth satisfaction, but they did not significantly influence the duration of the labor process among primiparous women. Recommendations: Based on the findings of this study, the following are recommended: Implement the AIDET Framework as a Standard of Care: Hospital and unit managers in Egyptian maternity settings should formally integrate the AIDET (Acknowledge, Introduce, Duration, Explanation, Thank You) communication model into routine intrapartum nursing protocols. It should be recognized not as an optional courtesy but as a required clinical intervention for all primiparous women. Develop and Mandate Structured Training Programs: The Ministry of Health and Population, in collaboration with the Egyptian Nursing Syndicate, should develop a standardized training curriculum and workshops to educate labor and delivery nurses on the correct application of the AIDET model alongside supportive care techniques. Training should include simulation and role-playing for competency. Create a Supportive Work Environment.

Keywords: AIDET, Supportive Care, Birth Experience.

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1. INTRODUCTION

Childbirth is a significant and unforgettable event in a woman's life. Many primiparous women face the process alone with lack of support, experiencing fear of the unknown, fatigue, lack of previous experience, fear of complications, and may be influenced by negative birth stories. Anxiety is notably higher by 20–30% in primiparous women compared to multiparous women. In primiparous women, severe anxiety may impair cognitive functioning, hinder informed decision-making, reduce communication abilities, and lead to feelings of isolation or overwhelming. About 17–40% of primiparous women experience anxiety, often influenced by factors such as inadequate explanations, lack of informed consent, and ineffective communication (Wigert et al., 2020).Karlstrom, Dahlberg, and Hildingsson, (2022) in their study of “communication in labor midwives strategies to manage pain and empower women” reported that, ineffective communication from healthcare providers lead to activate "fear- tension- pain cycle” where stress increases muscle tension, sensation with pain and prolonged labor. Lack of adequate support due to healthcare staff shortages, and work overload, leading to heightened anxiety, pain, and birth dissatisfaction. Also, Van, Kasperink, Hollander, Verhoeven, Kingma, and de Jonge (2021) in their study of “client-care provider interaction during labour and birth” reported that, 16% of primiparous women reported negative birth experience due to non-empathetic communication. Primiparous women who felt unheard, reported severe pain and required interventions than others. Buback, Kinyua, Akinyi, Walker, and Afulani (2022) in their study reported that, ineffective communications in the form of 57% of providers never introduce themselves to women and 38% of women are never able to be in the birthing position of their choice. Additionally, 33% of providers did not always explain why they are doing examinations or procedures and 73% of women were not always asked for permission before performing physical examination that affect negatively on labor process and increase primiparous women anxiety levels. According to the World Health Organization (2022), anxiety is a mental health condition marked by excessive fear and worry about future events. Severe anxiety and fear during labor may activate the release of stress hormones such as adrenaline, noradrenaline, and cortisol from the adrenal gland. These hormones elevate heart rate and blood pressure, reduce uterine blood flow, disrupt contraction patterns, impair placental function, decrease pain tolerance, and increase muscle tension. Such physiological changes contribute to prolonged labor, a higher likelihood of medical interventions such as epidurals, assisted births, cesarean sections, and an overall less positive childbirth experience (Fauziyah & Anggraeni, 2023).

Regarding effective communication and supportive care from health care staff can help primiparous women to feel control, contribute to a positive experience, and reducing fear and anxiety feeling. Effective communication and supportive care during labor lower anxiety level, through decrease releasing of stress hormones and increase secretion of relaxation hormones as dopamine, serotonin and endorphin that act as normal pain killers that inhibit effect of stress hormones. These hormones enhance blood flow to pelvic area, increase contraction and decrease uterine inertia. The effective communication and supportive care for primiparous women during childbirth leads to a positive childbirth

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experience which meet the needs and expectations of primiparous women, increase delivery birth satisfaction and help to control her stress and anxiety (Shamoradifar, et al., 2022).The AIDET is a communication framework was first presented by Studer group (2005) and became widely used in training for healthcare professions over recent years. The AIDET acronym is an appreviation for five words; (A) stands for; acknowledge, take the initiative to greet patient warmly and keep smiling, treat patient with respect such as a sitting position, stand up to greet, slightly lower upper body, make eye contact and hold patient hands to feel supported; (I) stand for introducing yourself to patient politely and let them know who you are and what is your role in their care. The language of the introduction should be proficient, relaxed, and confident, avoids patient's emotional tension, eliminates patient's anxiety and enhances patient's sense of dependence, security and trust (Shamoradifar, et al, 2022). (D) Stands for —duration; included accurate time expectation for tests and the time that care provider will spend with the patient. (E) Stands for —explaining any procedures to patient. All the questions and confusions that will rise need to be patiently explained. (T) Stands for —thanks finally, express gratitude to the patient, thank them for their trust, cooperation. Understanding and asking them what they need to help before leaving while saying —Thank you for your cooperation (Shamoradifar, et al, 2022). Study done by Yang, Luo, Du, Guan, & Peng (2023) entitled "the implementation and effect evaluation of AIDET standard communication health education mode" reported that, the rapid establishment of a harmonious and trusting nurse–patient relationship between primiparous women and nurses that help to improve patient acceptance of information when giving health education and increase patient birth satisfaction, reduce their unfamiliarity with the surrounded environment, intervention procedure and decrease the anxiety.In the same line Nguyen, (2019) investigate "the effect of AIDET communications delivered by front desk staff on patient experience and satisfaction at a medical practice" the study showed that, 76% of physicians and 85% of patients believed good communication is an important part of health care, that increase patient satisfaction and their impressions varied greatly. Supportive care during labor refers to nonmedical care directed toward easing the anxiety, discomfort, loneliness, and exhaustion of the primiparous women to use her own strengths and ensure that her needs and wishes are known and respected. It includes non- medical interventions like message that relieves back pain especially in posterior position through enhance releasing of relaxation hormones and decrease stress hormones, help women with mobility through encouraging movement, upright positioning (standing, walking, hands-and-knees) that helps fetal decent and reduce labor duration, advocacy role in helping women shared with decision making, respecting women's preferences and rights (Nasser, AbdElhady, Wageh & Sabry 2023). Cankaya and Can, (2021) in their study "The effect of continuous supportive care on birth pain, birth fear, midwifery care perception, oxytocin use, and delivery time during the intrapartum period" reported that The participants in the intervention group receiving continuous intrapartum supportive care had less fear of birth and lower birth pain in the active and transitional stages of labor, their midwifery care perception increased, and the duration of labor was shorter ($P < 0.05$). In Egypt there are relatively scarce researches in obstetric field

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examined the effect of applying AIDET communication model and supportive care on birth experience. Therefore, this study aims to investigate effect of applying AIDET communication model and supportive care during labor on birth experience.Significance of the Study From the research clinical experience, Primiparous women are supported by their family members throughout pregnancy. This support is interrupted during labor in governmental hospitals as the primiparous women enter labor department alone. A shortage of health care staff, lack of one- to-one care, and work overload which led to ineffective communication between the care providers and primiparous women. In addition, most hospitals in Egypt do not allow relatives and companionship during labor that increase primiparous women's anxiety and fear. Therefore, it seems that identifying appropriate and effective intervention methods can help to improve the childbirth experience and birth satisfaction.In the study of El Sayed et al (2020) at Zagazig university hospitals highlighted that, primiparous women often report feeling unheard during labor and worsening pain experience during labor. Osman, Elsayed, and Metwally, (2019) reported that, cesarean delivery, preterm labor and prolonged labor were higher in women with severe anxiety level (93.8%, 18.8 % & 81.2% respectively). Effective communication as maintaining eye contact, verbal reassurance, shared decision making lower pain level by promoting relaxation and reducing stress hormones and increase birth satisfaction level (Shanmugam & Ramu, 2024).In addition to the study of Fouad, Shalaby, Ibrahim, abbas, 2020 mentioned that many women deliver at Zagazig university hospitals reported that lack of emotional support, inadequate communication from health care providers and insufficient involvement in decision making during labor. Another women experienced that neglect, verbal abuse and harsh treatment (Fouad, Shalaby, Ibrahim, abbas, 2020).In Egypt there are scares researches explore the link between the effect of communication and supportive care on birth experience, this study addressing an important research gap in Egypt. The findings of the study will support the integration of effective communication strategies and supportive care into nursing curriculum. In clinical practice, the findings will emphasize the value of empathetic, structured communication and supportive care in enhancing maternal outcomes. Implementing the AIDET model in labor and delivery units can standardize patient-provider interactions. In the field of research, this study will serve as a foundation for future investigations, guiding policy development, and maternal health interventions aimed to improve childbirth outcomes in Egypt.

Operational definitions

Supportive care: in the current study means assistance primiparous women with non-medical interventions like message especially in posterior position, help women with mobility through encouraging movement, (standing, walking, hands-and-knees) , advocacy role in helping women shared with decision making and respecting women's preferences and rights.

Birth experience: in the current study means anxiety, labor course and birth satisfaction among primiparous women as measured by anxiety assessment scale, numerical pain rating scale, WHO Partograph (2018) and birth satisfaction scale.

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2. METHODS

2.1 Aim

The aim of the current study is to evaluate effect of applying AIDET communication model and supportive care during labor on birth experience.

Research Hypotheses: To fulfill the aim of this study the following research hypotheses are formulated:

H1: Primiparous women who will receive AIDET communication model and Supportive Care will experience lower anxiety level during labor process than those who don't.

H2: Primiparous women who will receive AIDET communication model and Supportive Care will report lower labor pain level during first stage of labor process than those who don't.

H3: Primiparous women who will receive AIDET communication model and Supportive Care will have decreased duration of labor process than those who don't.

H4: Primiparous women who will receive AIDET communication model and Supportive Care will have higher birth satisfaction score of labor process than those who don't.

2.2 Design

A quasi experimental research design (pretest / posttest non-equivalent control group design) will be adopted to achieve the aim of the current study. In this study, the investigator collected data from the control group first then the study group.

2.3 Setting

The current study will be carried out at the fourth floor of obstetric and gynecological building in Al Gamaa hospitals which is affiliated to the general organization for teaching hospitals in Zagazig town El Sharquia government.

Participants

A convenience sample of 124 primiparous women in the beginning of active phase (cervical dilation of 4 cm) were recruited for the study, divided into two groups (study and control group) .Primiparous women were recruited according to the following inclusion criteria; primiparous women aged from 18 to 35years; low-risk pregnancy ; gestational age ≥ 37 weeks; single fetus with cephalic presentation; spontaneous onset of labor; cervical dilation of 4 cm (in active phase of labor) and willing to participate in the study . The exclusion criteria will be, primiparous women with high risk pregnancy; primiparous women who attend antenatal preparation classes.

Data Collection Tools

2.4 Five tools were used to collect data: 1) Structured Interview Questionnaire Schedule 2) Numerical Pain Rating Scale (NPRS); 3) Anxiety Assessment Scale for Pregnant Women in Labor (AASPWL) 4) partograph; and 5) The birth satisfaction scale (BSS).

Tool 1. Structured Interview Questionnaire Schedule

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This tool was developed by the researcher and will include two sections: The first section will include data related to demographic characteristics such as age, educational level, occupation, residence. The second section will include data related to current obstetrical history as primiparous obstetric code, gravidity, last menstrual period and gestational age.

Tool 2. Numerical Pain Rating Scale (NRS):It is adopted from Hartrick, Kovan, & Shapiro, (2003) and is used to assess pain intensity in women during labor. The NRS is widely recognized as a valid and reliable tool for assessing pain intensity. The reliability of The NRS is 0.93-0.97. the NRS allows women to verbally rate their pain on a scale from 0 to 10 or to mark a point on a line that best represents their pain level. Content of the scale and its items: The NRS consists of a single-item scale, where women are asked to rate their current pain level using a numerical range from 0 to 10, 0 = No pain and 10 = the most intense pain imaginable. Primiparous women verbally indicate their pain score place a dot on a continuous line to indicate their pain level.Interpretation and Scoring: Pain intensity is categorized based on the reported score: 1 – 3 Mild pain, 4 – 6 Moderate pain and 7 – 10 severe pain.

Tool 3. Anxiety Assessment Scale for Pregnant Women in Labor (AASPWL)

The Anxiety Assessment Scale for Pregnant Women in Labor (AASPWL) was adopted from the scale developed by Durat, Çulhacik, Doğu, Turan, Atasoy, & Toker, (2018) to accurately measure anxiety levels in pregnant women during labor. The scale was translated into Arabic by the researcher and reviewed by experts to ensure linguistic and conceptual accuracy. The AASPWL is an essential tool for addressing the psychological needs of women in labor.Content of the Scale and Its Items: The AASPWL comprises 9 items, divided into two sub-dimensions, birth Process and Motherhood Constellation. The scale includes statements that reflect specific anxieties related to labor, such as "I'm worried that something will happen to me in childbirth". Each item is rated on a 5-point Likert scale, ranging from 1 = Not at all anxious to 5 = extremely anxious. The Arabic version of the AASPWL was implemented in this study to accurately measure anxiety levels for pregnant women during labor, ensuring culturally appropriate assessment and intervention.

Interpretation and Scoring: The total score is calculated by summing the responses across all nine items, with a higher score indicating greater levels of anxiety. Anxiety levels are categorized as follows: 9 – 18 low anxiety, 19 – 27 moderate anxiety, 28 – 36 high anxiety and 37 – 45 severe anxiety.

Tool 4. WHO Partograph (2018) is standardized tool was first developed by Friedman (1954) and later modified by Philpott (1972) with the addition of alert/action lines. The WHO has updated the Partograph (2018) multiple times, which emphasizes woman-centered care and reduces unnecessary interventions. WHO Partograph (2018) is a graphical tool used to monitor the progress of labor and the well-being of the mother and fetus during childbirth. It provides a visual representation of key labor parameters, helping healthcare providers detect abnormalities early and make timely clinical decisions to prevent complications such as prolonged labor, obstructed labor, and fetal distress. Key

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Features of a WHO Partograph (2018) are “1-Labor Progress Monitoring: Tracks cervical dilation (plotted against time) to identify slow or abnormal labor progression: Includes descent of the fetal head and uterine contractions. WHO Partograph (2018) is valid and reliable to use.Recording*:- Contractions are assessed *every 30 minutes* during the active phase of labor. The number of contractions per 10 minutes is plotted alongside their duration.*Interpretation*:- uterine contraction frequency is 3-5contraction per 10 minutes. duration 40-60 seconds per contraction, less than this causes weak contraction and prolonged labor and more than this cause hypertonic contraction and labor complication.

Tool 5. The birth satisfaction Scale (BSS)

The BSS is a 10-item self-report measure of birth experience, developed by Hollins, Martin (2014) which is comprised of 10 questions in total. BSS: Cronbach’s alpha ranges from 0.79 to 0.89 across subscales. It is indicating that the reliability of the questionnaire is good and it is valid to use.The questions include: (1)I came through childbirth virtually unscathed; (2)I thought my labor was excessively long, (3)I found giving birth a distressing experience, (4)I was not distressed at all during labor, (5)I felt very anxious during my labor and birth; (6)I felt out of control during my birth experience, (7)The delivery room staff encouraged me to make decisions about how I wanted my birth to progress; (8)I felt well supported by staff during my labor and birth; (9)The staff communicated well with me during labor; (10)The delivery room was clean and hygienic.Interpretation and Scoring: It will be scored by the Likert 5-level method, which is expressed according to the degree of birth satisfaction. Responses range from *"Strongly Disagree" (0)* to *"Strongly Agree" (4)*. The score from*0–15*: Low satisfaction,*16–30*: Moderate satisfaction and from*31–40*: High satisfaction.

2.5 Validity and Reliability

Unstandardized tools were submitted to three experts in the field of maternity nursing to test content validity, clarity of sentences, and appropriateness of content. Modifications were carried out according to the expert's judgment before seeking the approval of the ethical committee while reliability of the study tools were tested by using Cronbach's α (alpha); the calculated reliability score was 0.91.

2.6 Procedure

Before collecting data, the researcher will review the recent literature to construct and prepare the needed tools for data collection. After attaining the study approval letter from the Research Ethics Committee of Faculty of Nursing, Cairo University, and official permission to conduct the proposed study will be obtained from the hospital administrators.

Interviewing. The researcher will visit the obstetric and gynecological department in Al Gamaa hospitals three days per week (Saturday, Sunday and Monday) from 9 am to 3 pm and will meet primiparous women at laboring unit. All primiparous women who accept

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to participate in the study will be interviewed to collect data related to their demographic characteristics, and obstetrical history.

The researcher will start to collect data from the control group, after completing the sample collection from the control group. The researcher will start to collect data at the same days from the study group. Individual interviews will take about 5-10 minutes which will be conducted in the labor department with each primiparous woman for both groups before intervention using structured interview questionnaire schedule.

Assessment. After admission the researcher will observe primiparous women during labor for both groups to assess primiparous women anxiety immediately after admission (4cm dilatation) using anxiety assessment scale and pain using numerical pain rating scale.

Intervention: The researcher will apply the AIDET communication model and supportive care when engaging with the study group during the active labor phase. Upon arrival at the labor unit, the researcher will meet with primiparous women, addressing them by name, using a warm smile, maintaining eye contact, and offering reassuring touch to foster trust. The researcher will introduce herself, state her role, and assure the women of her presence throughout the entire delivery process. Additionally, she will introduce relevant healthcare team members the women might encounter.

Clear, concise, and easy-to-understand information will be provided, avoiding complex medical jargon and using visuals when needed. The researcher will also explain the timing of her stay and clarify each procedure step (e.g., components of I.V solution, its uses, and causes of vaginal examination and what will be next in each labor step).

She will respect the women's preferences, answer their questions with a positive attitude, and provide emotional support through empathy, encouragement, praise, confidence, and active listening. Moreover pregnant women to express their needs and preferences, keep women constantly informed of what is happening, answer their questions, assist primiparous women with mobility through encouraging movement, upright positioning (standing, walking, hands-and-knees) and advocacy role in helping women shared with decision making , respecting women's preferences and rights. Assure them about the confidentiality all times. the control group will receive routine care inside the hospital without any intervention from the researcher.

Monitoring and Evaluation. The researcher will follow up pain level every hour using numerical pain rating scale and monitor anxiety level at 6 cm dilatation using anxiety assessment scale. evaluation will be conducted during labor for both groups on their assigned days to avoid interference.

Assessments administered to both groups include: Anxiety Assessment Scale for Pregnant Women in Labor (AASPWL) to measure anxiety levels twice at admission and during active labor at 6 cm dilatation before the transitional phase. Numerical Pain Rating Scale (NRS) to measure pain intensity hourly during the first stage of labor. Assessments will conclude at the end of the second stage of labor.

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The birth satisfaction scale (BSS) to measure birth satisfaction level at fourth stage of labor and WHO Partograph (2018) to assess labor duration. Pre-post data will be gathered for both groups in a supportive manner to compare changes in birth experience.

Statistical Analysis

The Statistical Package for the Social Science (SPSS) IBM version 25 computer software package will be used for statistical analysis of data, as it contains the test of significance given in the standard statistical books.

Collected data will be summarized and tabulated by using descriptive statistics in the form of mean, standard deviation, and frequency percentage. Parametric inferential statistics (T-test & Chi-square) will be used to examine the differences between the study and control group. The level of significance will be P- value < 0.05.

3. RESULTS

Table 1: Demographic characteristics of the study sample (N = 124)

Variables	Category	Study Group		Control Group	
		N = 62	%	N = 62	%
Age	From 15 to 30 year	51	82.3	50	80.6
	From 30 to 40 year	11	17.7	12	19.4
Educational level	Higher education	17	27.4	11	17.7
	Intermediate education	35	56.5	35	56.5
	Reads and writes	10	16.1	16	25.8
Place of residence	Rural	39	62.9	37	59.7
	Urban	23	37.1	25	40.3
Employment status	Working	34	54.8	40	64.5
	Not working	28	45.2	22	35.5
Gravidity	Primigravida	55	88.7	56	90.3
	multigravida	7	11.3	6	9.7
Date of last menstrual period	37 to 38 weeks	25	40.3	19	30.6
	More than 38 to 39 weeks	18	29.0	21	33.9
	More than 39-40 weeks	19	30.6	22	35.5
Gestational age	Normal	62	100.0	62	100.0

Table 1 presents the demographic characteristics of the study sample, which included 124 primiparous women divided equally into the study group (n = 62) and the control group (n = 62).Regarding age, most of participants in both groups were between 15 and 30 years, representing 82.3% of the study group and 80.6% of the control group, while a smaller proportion were aged between 30 and 40 years.

In terms of educational level, more than half of the participants in both groups had intermediate education 56.5%. Higher education was reported by 27.4% of the study group compared to 17.7% of the control group, whereas the proportion of participants who could read and write was higher in the control group 25.8% than in the study group 16.1%.

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Concerning place of residence, most participants in both groups lived in rural areas, accounting for 62.9% of the study group and 59.7% of the control group. As for employment status, more than half of the study group 54.8% and nearly two-thirds of the control group 64.5% were working.

With respect to gravidity, most participants in both groups were primigravida, representing 88.7% of the study group and 90.3% of the control group. Regarding the date of the last menstrual period, participants were distributed across 37-40 weeks with relatively comparable percentages between the two groups. Finally, all participants in both groups had a normal gestational age 100%. Figure 1 illustrates the distribution of participants by these demographic characteristics.

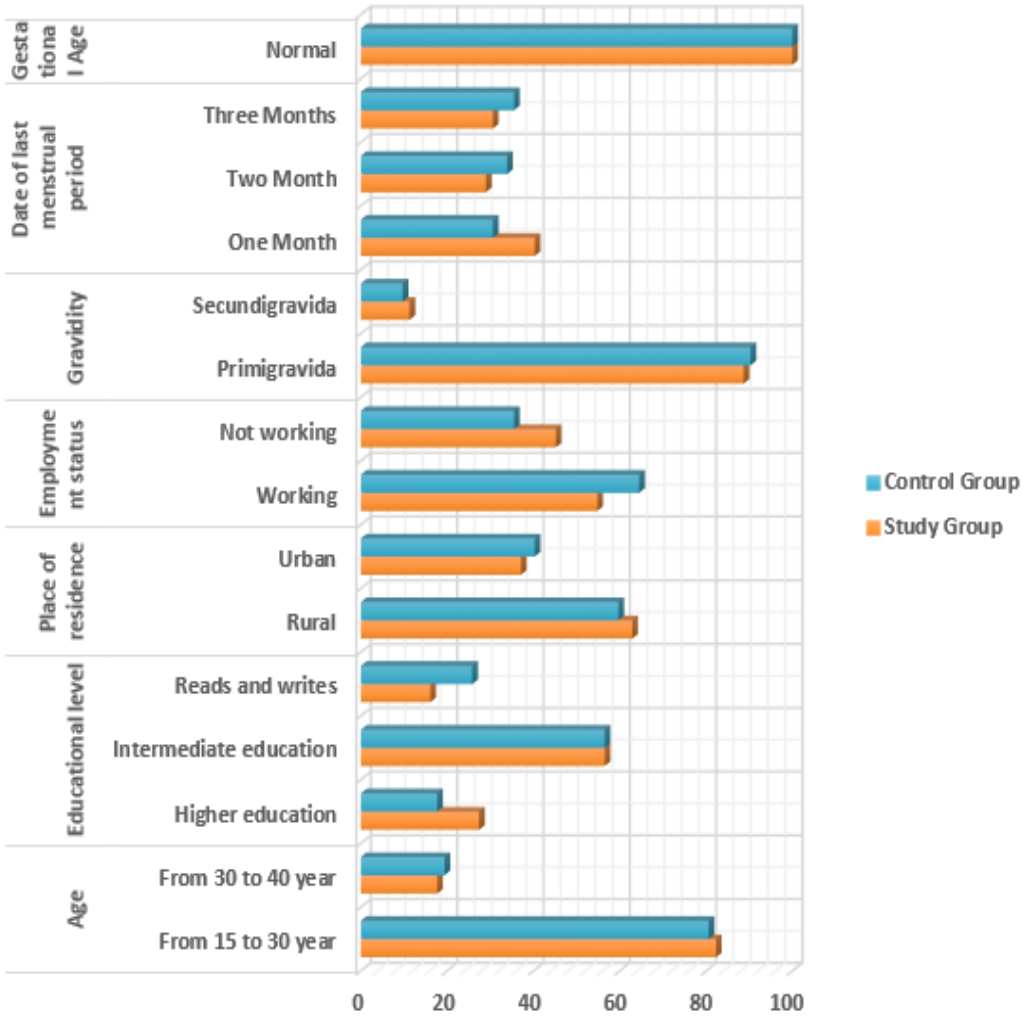

Figure 1: Distribution of participants (primiparous women) according to demographic characteristics

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Table 2: Reliability analysis of the study variables

Variable	No. of Items	Cronbach's Alpha
Labor anxiety scale at 4 cm cervical dilatation	9	.845
Labor anxiety scale at 6 cm cervical dilatation	9	.972
Birth satisfaction scale-revised	10	.996

As presented in Table 2, the Cronbach's alpha coefficient for the labor anxiety scale was 0.845 at 4 cm cervical dilatation, indicating good internal consistency, and 0.972 at 6 cm, reflecting excellent reliability. Furthermore, the Revised Birth satisfaction scale demonstrated a very high level of internal consistency, with Cronbach's alpha value of 0.996. All obtained alpha values exceeded the acceptable threshold of 0.70, confirming that the study instruments were reliable and suitable for use in the current research.

Table 3: Evaluation of the levels of pain rating between each group.

Pain Rating	Group	Mild		Moderate		Severe	
		N	%	N	%	N	%
Pain rating at 4 cm cervical dilatation	Study Group	55	88.7	7	11.3	-	-
	Control Group	55	88.7	7	11.3	-	-
Pain rating at 5 cm cervical dilatation	Study Group	47	75.8	15	24.2	-	-
	Control Group	19	30.6	43	69.4	-	-
Pain rating at 6 cm cervical dilatation	Study Group	-	-	48	77.4	14	22.6
	Control Group	-	-	21	33.9	41	66.1

Table 3 illustrates the distribution of pain rating levels among primiparous women in both the study and control groups at different stages of cervical dilatation. At 4 cm cervical dilatation, most participants in both groups reported mild pain, accounting for 88.7% in each group, while 11.3% reported moderate pain. None of the participants in either group reported severe pain at this stage, indicating a similar painful perception between the two groups.

At 5 cm cervical dilatation, a noticeable difference was observed between the two groups. In the study group, most participants reported mild pain 75.8%, followed by moderate pain 24.2%. In contrast, the control group predominantly experienced moderate pain, reported by 69.4% of participants, while only 30.6% reported mild pain. No cases of severe pain were reported in either group at this stage.

At 6 cm cervical dilatation, pain intensity increased in both groups; however, the study group showed a more favorable pain profile. In the study group, 77.4% of participants reported moderate pain, while 22.6% experienced severe pain. Conversely, in the control group, most participants 66.1% reported severe pain, compared to 33.9% who reported moderate pain. No participants in either group reported mild pain at this stage. Figure 2 shows these results:

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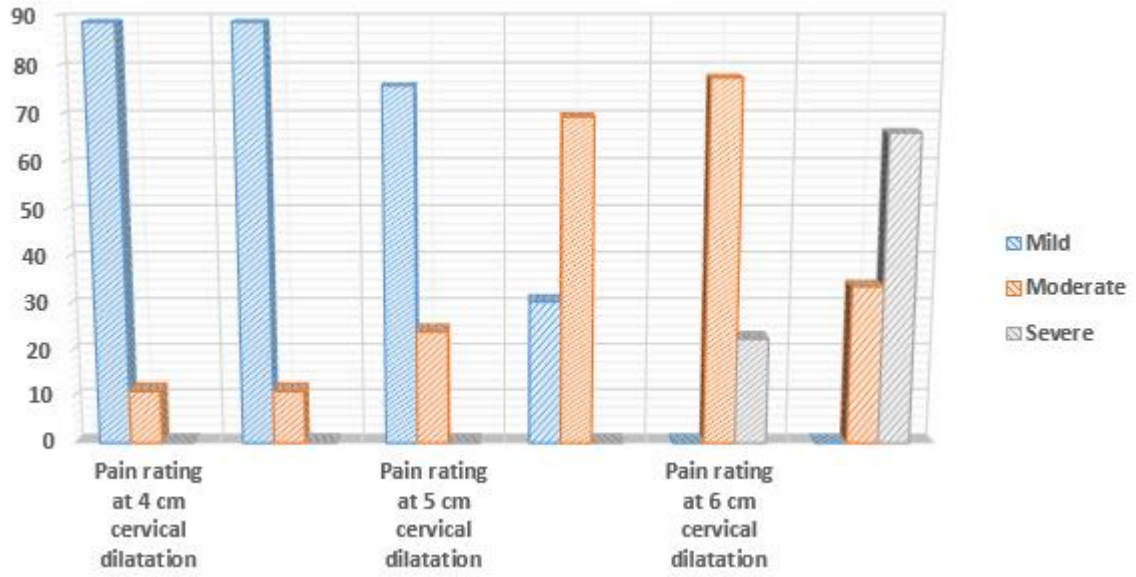

Figure 2: Distribution of primiparous women' pain rating between each group

We note that the findings indicate that primiparous women in the study group experienced lower pain intensity during labor progression compared to those in the control group, particularly at 5 cm and 6 cm cervical dilatation. These results suggest a positive effect of applying the AIDET communication model and supportive care on pain perception during labor.

Table 4: Descriptive statistics of labor anxiety scale at 4 cm cervical dilatation

Items	Group	Mean	Std. Deviation	Friedman test		
				Mean Rank	Chi-Square	Sig.
I'm afraid to be alone during childbirth	Study	4.35	.655	1.47	.533	.465
	Control	4.52	.535	1.53		
I'm exhausted/tired right now	Study	4.40	.712	1.55	1.059	.303
	Control	4.35	.515	1.45		
I feel so happy thinking about my baby	Study	4.42	.691	1.56	1.485	.223
	Control	4.35	.515	1.44		
I'm worried that something will happen to me in childbirth	Study	4.34	.651	1.46	.862	.353
	Control	4.52	.535	1.54		
I'm afraid of hurting my baby during childbirth	Study	4.42	.691	1.56	1.485	.223
	Control	4.35	.515	1.44		
I feel powerless	Study	4.42	.691	1.56	1.485	.223
	Control	4.35	.515	1.44		
I feel like crying/ I could cry at any moment	Study	4.32	.696	1.46	.806	.369
	Control	4.52	.535	1.54		
When I feel like I'm in pain, thinking that birth is approaching	Study	4.34	.723	1.47	.533	.465
	Control	4.52	.535	1.53		
The birth process is a process worth holding my baby in my arms	Study	4.34	.676	1.46	.806	.369
	Control	4.52	.535	1.54		

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Table 4 presents the descriptive statistics of the labor anxiety scale items for primiparous women in the study and control groups at 4 cm cervical dilatation. The results include the mean scores, standard deviations, and mean ranks of the items, in addition to the Friedman test values. Overall, the mean scores of the anxiety items were relatively high in both groups, indicating noticeable levels of labor-related anxiety at this stage of cervical dilatation. In the study group, mean scores ranged from 4.32 ± 0.696 to 4.42 ± 0.691, while in the control group, mean scores ranged from 4.35 ± 0.515 to 4.52 ± 0.535.

Table 5: Evaluation of the levels of labor anxiety at 4 cm cervical dilatation between each group.

Labor anxiety levels at 4 cm cervical dilatation	Study Group		Control Group	
	N	%	N	%
Low Anxiety	-	-	-	-
Moderate Anxiety	-	-	-	-
High Anxiety	12	19.4	20	32.3
Severe Anxiety	50	80.6	42	67.7

As shown in Table 5, most primiparous women in both groups experienced high to severe levels of labor anxiety at 4 cm cervical dilatation. In the study group, 80.6% of participants reported severe anxiety, while 19.4% experienced high anxiety. Similarly, in the control group, 67.7% of participants reported severe anxiety, whereas 32.3% reported high anxiety. Notably, none of the participants in either group reported low or moderate anxiety at this stage of labor. These findings reflect the heightened emotional response experienced by primiparous women during the early active phase of labor. Figure 3 shows these results:

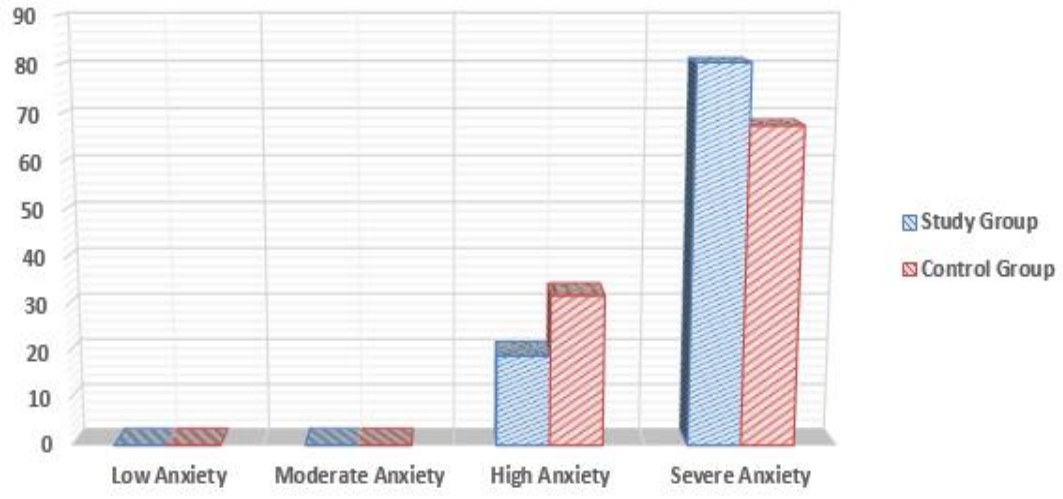

Figure 3: Distribution of primiparous women' anxiety at 4 cm cervical dilatation between each group

Following the descriptive statistics of the labor anxiety scale items for primiparous women in the study and control groups at 6 cm cervical dilatation in Table 6.

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Table 6: Descriptive statistics of labor anxiety scale at 6 cm cervical dilatation

Items	Group	Mean	Std. Deviation	Friedman test		
				Mean Rank	Chi-Square	Sig.
I'm afraid to be alone during childbirth	Study	2.73	.705	1.03	58.000	.000
	Control	4.61	.554	1.97		
I'm exhausted/tired right now	Study	2.68	.471	1.02	59.000	.000
	Control	4.23	.612	1.98		
I feel so happy thinking about my baby	Study	2.73	.705	1.07	53.000	.000
	Control	4.24	.619	1.93		
I'm worried that something will happen to me in childbirth	Study	2.63	.659	1.03	58.000	.000
	Control	4.61	.554	1.97		
I'm afraid of hurting my baby during childbirth	Study	2.66	.676	1.07	53.000	.000
	Control	4.23	.612	1.93		
I feel powerless	Study	2.68	.647	1.05	56.000	.000
	Control	4.24	.619	1.95		
I feel like crying/ I could cry at any moment	Study	2.68	.672	1.02	59.000	.000
	Control	4.61	.554	1.98		
When I feel like I'm in pain, thinking that birth is approaching	Study	2.73	.682	1.03	58.000	.000
	Control	4.63	.550	1.97		
The birth process is a process worth holding my baby in my arms	Study	2.58	.497	1.02	60.000	.000
	Control	4.61	.554	1.98		

As shown in Table 6, the findings demonstrate a clear difference in anxiety levels between the two groups at this stage of labor. In the study group, mean scores across all anxiety items were notably lower, ranging from 2.58 ± 0.497 to 2.73 ± 0.705, indicating a reduction in anxiety levels. In contrast, the control group showed consistently higher mean scores, ranging from 4.23 ± 0.612 to 4.63 ± 0.550, reflecting elevated anxiety levels. These results indicate a marked divergence in labor anxiety responses between the study and control groups during the advanced stage of labor, as reflected by the statistically significant differences observed across all items of the labor anxiety scale. The Friedman test results revealed statistically significant differences in the relative importance of all anxiety items between the study and control groups at 6 cm cervical dilatation, with chi-square values ranging from 53.000 to 60.000 and ($p < 0.001$).

The following Table 7 summarizes the overall levels of labor anxiety at 6 cm cervical dilatation for both the study and control groups.

Table 7: Evaluation of the levels of labor anxiety at 6 cm cervical dilatation between each group.

Labor anxiety levels at 6 cm cervical dilatation	Study Group		Control Group	
	N	%	N	%
Low Anxiety	3	4.8	-	-
Moderate Anxiety	51	82.3	-	-
High Anxiety	8	12.9	12	19.4
Severe Anxiety	-	-	50	80.6

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As shown in Table 7, most of participants in the study group experienced moderate anxiety, accounting for 82.3%, while 12.9% reported high anxiety and 4.8% reported low anxiety. Notably, none of the participants in the study group experienced severe anxiety at 6 cm cervical dilatation. In contrast, the control group demonstrated markedly higher anxiety levels. Most participants 80.6%, experienced severe anxiety, while 19.4% reported high anxiety. No participants in the control group reported low or moderate anxiety at this stage. These findings indicate a substantial reduction in labor anxiety levels among women in the study group compared to the control group at 6 cm cervical dilatation. The shift toward lower anxiety categories in the study group, alongside the predominance of severe anxiety in the control group, highlights a clear divergence between the two groups during the active phase of labor. Figure 4 shows these results:

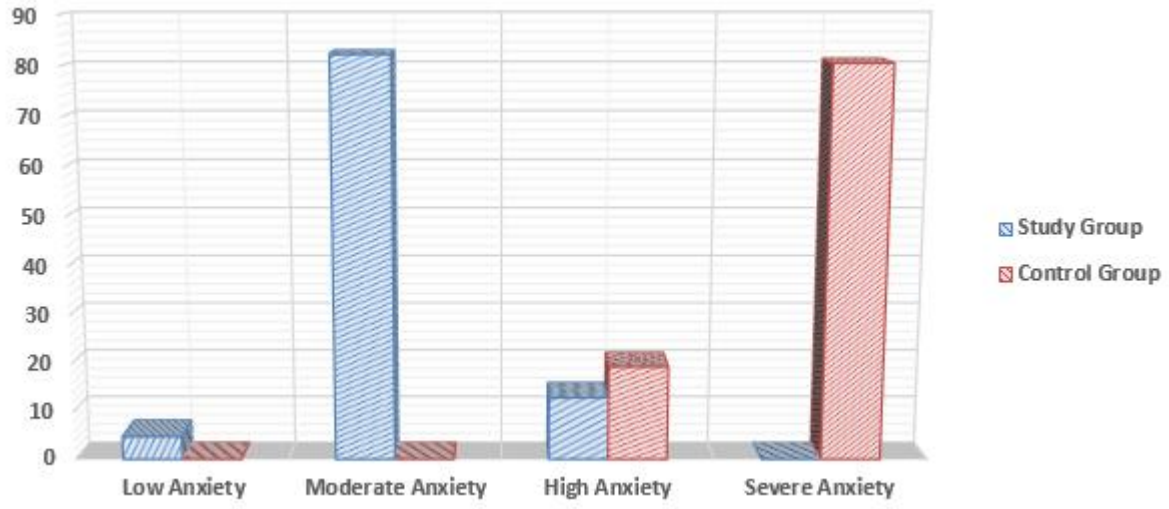

Figure 4: Distribution of primiparous women' anxiety at 6 cm cervical dilatation between each group

4. DISCUSSION

This study aimed to assess the effect of applying the AIDET communication model and supportive care during labor on birth experience. Upon arrival at the labor unit, the researcher will meet with primiparous women, addressing them by name, using a warm smile, maintaining eye contact, and offering reassuring touch to foster trust. The researcher will introduce herself, state her role, and assure the women of her presence throughout the entire delivery process. Additionally, she will introduce relevant healthcare team members the women might encounter. Clear, concise, and easy-to-understand information will be provided, avoiding complex medical jargon and using visuals when needed. The researcher will also explain the timing of her stay and clarify each procedure step (e.g., components of I.V solution, its uses, and causes of vaginal examination and what will be next in each labor step). She will respect the women's preferences, answer their questions with a positive attitude, and provide emotional support through empathy, encouragement, praise, confidence, and active listening. Moreover pregnant women to

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express their needs and preferences, keep women constantly informed of what is happening, answer their questions, assist primiparous women with mobility through encouraging movement, upright positioning (standing, walking, hands-and-knees) and advocacy role in helping women shared with decision making , respecting women's preferences and rights.

Assure them about the confidentiality all times. The study's findings supported the research hypothesis that Primiparous women who received AIDET communication model and Supportive Care experienced lower anxiety, pain level and high satisfaction level during labor process than those who don't.. "The current study showed that women in the study group who received AIDET communication model and supportive care did not have a decreased duration of labor compared to those who didn't, with no statistically significant difference between the two groups ($p > .05$)."

These findings are supported by the results of a recent study entitled "The Nurse's Role and Communication Strategies in Alleviating Fear and Anxiety During Pregnancy and Childbirth," which included 435 pregnant women. The study demonstrated a significant relationship between effective communication and women's perception of pain, showing that when nurses employed supportive communication strategies, women reported feeling more relaxed and comfortable during pregnancy and labor.

Also, Karlström et al. (2024) conducted a longitudinal study titled "Women's Perceived Support During Labour and Its Association with Postpartum Psychological Well-Being," involving 368 women in Sweden. The researchers found that women who rated midwives' communication as clear, empathetic, and continuous were significantly more likely to report high satisfaction and lower postpartum depressive symptoms ($p < 0.01$). The authors concluded that emotional validation and consistent presence during labor were central to women's positive appraisal of childbirth.

This result is supported by Zhang et al. (2020) in their prospective cohort study entitled "Supportive Care and Its Impact on Labor Outcomes and Maternal Psychological Well-Being," which included a sample of 1,200 low-risk women across multiple maternity units. The researchers found that although continuous supportive care significantly improved maternal emotional well-being and reduced reported anxiety levels during labor, it did not produce a statistically significant reduction in total labor duration. The authors concluded that supportive interventions primarily influence psychological adaptation rather than the physiological progression of labor.

In contrast to, Gupta et al. (2025) conducted a prospective cohort study titled "Role of Emotional and Physical Support on Labor Progression," which included 320 primiparous women, and found that women who received continuous doula support had a shorter mean duration of the first stage of labor ($p = 0.03$) compared with those receiving routine care. The authors suggested that decreased fear, reduced catecholamine levels, and improved maternal relaxation might accelerate uterine contractions, indicating that supportive interventions can have physiological as well as psychological benefits under certain conditions.

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5. CONCLUSION

This study concludes that applying the AIDET communication model alongside supportive care during labor is an effective nursing intervention for reducing pain and anxiety and enhancing birth satisfaction among primiparous women in Egypt. Although it did not shorten the duration of labor, the intervention significantly improved the psychological and emotional aspects of the childbirth experience. These findings support the integration of structured communication frameworks into routine intrapartum care to promote positive birth experiences.

6. RECOMMENDATIONS

Based on the findings of this study, the following are recommended:

1. Implement the AIDET Framework as a Standard of Care: Hospital and unit managers in Egyptian maternity settings should formally integrate the AIDET (Acknowledge, Introduce, Duration, Explanation, and Thank You) communication model into routine intrapartum nursing protocols. It should be recognized not as an optional courtesy but as a required clinical intervention for all primiparous women.
2. Develop and Mandate Structured Training Programs: The Ministry of Health and Population, in collaboration with the Egyptian Nursing Syndicate, should develop a standardized training curriculum and workshops to educate labor and delivery nurses on the correct application of the AIDET model alongside supportive care techniques. Training should include simulation and role-playing for competency.
3. Create a Supportive Work Environment: Nursing administrators should advocate for reasonable nurse-to-patient ratios in labor units to enable nurses to spend adequate time providing the continuous, attentive communication that the intervention requires. This is a fundamental prerequisite for its successful implementation.

Declarations Ethical Considerations

A primary approval was obtained from the research ethics committee conducted at the Faculty of Nursing at Cairo University in November, 2025. An official permission was granted from the director of obstetric and gynaecological building in Al Gamaa hospitals. The investigator explained to the women the purpose and nature of the study and its importance. In addition, informed written consents were obtained from women who were willing to participate in the study after ensuring that their participation was voluntary and the trial posed no risk or hazards to them. In addition, each woman was assured that she has the right to withdraw from the study at any time with no consequences to her care. Then, confidentiality and anonymity was assured through the coding of data by the investigator and keeping the data in a secret place. Final approval was obtained after completing the data collection on February, 2026.

Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that they have no competing interests.

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