

Effect of Coaching Technique on Nurse`s Performance in Care of Children Suffering from Thalassemia Major

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Abstract

Context: Nurse coaches play an essential role in efforts to assist people toward sustained health as the health-care system shifts from a disease-focused and reactive system to one proactively focused on culturally sensitive wellness, health promotion, and disease prevention.

Aim: The study aimed to evaluate the effect of coaching technique on nurses' performance in care of children suffering from thalassemia major.

Methods: A quasi-experimental research design was used to conduct the study. **Setting:** This study carried out in the inpatient Pediatric Medicine Departments at Benha University Hospital. **Sample:** A Purposive sample of (60) nurses and children suffering from thalassemia recruited from the above-mentioned setting. They were recruited regardless of their age, gender, qualifications, years of experience, and attendance of training courses. **Tools of data collection:** Five tools were used; **Tool (I):** A structured interviewing questionnaire: It was designed by the researchers after reviewing related literature and consisted of three parts: Part (1): Personal characteristics of nurses'. Part (2): Personal characteristics of the children. Part (3): Nurses' knowledge questionnaire. It consisted of two parts: A)The first part is concerned with the assessment of nurses' knowledge related to thalassemia. It included assessment of definition, causes, manifestation, the side effect of medication, treatment of thalassemia, a complication of blood transfusion, and treatment of complications of blood transfusion. B) Nurses' knowledge related to coaching program as define of coaching, steps, define of nursing coaching, the difference between health coaching and wellness coaching. **Tool (II):** Coaching practices rating scale, used by nurses as a self-assessment tool to reflect on the extent to which his or her coaching practices. **Tool (III):** Coaching behavior scale to assessed nurses coaching behaviors. **Tool (IV):** Observational checklists, it was developed by the researchers to assess nurses' practices toward the care of children with thalassemia.

Results: was a highly statistically significant difference observed between the studied nurses' complete knowledge, behavior, and practice and quality of life of children with thalassemia at pre, post, and follow up of coaching technique application.

Conclusion: The study concluded that implementation of the nursing coaching technique is a highly effective method to improve nurses' knowledge, attitude, and practice in the post and follow up of coaching application. **Recommendation:** Generalization coaching training program for all nurses in the hospital to improve their performance regarding the care of children with chronic disease.

Keywords: Coaching Technique, Performance, and Thalassemia Major, Children

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I. Introduction

Thalassemia is a group of hereditary hemolytic anemia, results in excessive destruction of red blood cells, which leads to anemia. There are two main types of Thalassemia, "alpha" and "beta." The names refer to the part of the hemoglobin molecule that is missing or mutated. Thalassemia's major cause is the homozygous inheritance of the partially dominant autosomal gene (Saha et al., 2016).

Thalassemia is an inherited hemoglobin disorder that is becoming a significant health problem in the world, especially in Mediterranean region, the Middle East, the Indian subcontinent, and world population is carriers of such disorders and beta-thalassemia. Children with thalassemia appear healthy at birth but develop anemia that becomes progressively worse due to the partial or total absence of hemoglobin. Because of this condition, children need regular blood transfusions to manage chronic anemia and hemoglobin levels. Regular blood transfusions lead to iron accumulation in organs and may disrupt organ function and damage organs. Iron overload causes most of the mortality and morbidity associated with thalassemia. Long term transfusions should be accompanied by therapy with iron-chelating agents (Grabmann & Schermuly, 2019).

β -thalassemia is highly prevalent, with 80 to 90 million people reported to be carriers across the world (1.5% of the global population). It included three primary forms. The first form is β -thalassemia major (TM),

also referred to as "Cooley's anemia." The second type is "Mediterranean anemia," also referred to as β -thalassemia intermedia (TI). The third form is thalassemia minor that called " β -thalassemia carrier," " β -thalassemia trait," or "heterozygous β -thalassemia." The extremely high frequency of hemoglobin disorders compared with other monogenic diseases reflects natural selection mediated by the relative resistance of carriers against (Origa, 2017).

Thalassemia is an inherited condition affecting the blood. There are different categories, which vary from a mild condition with no symptoms to a severe or life-threatening condition. For the more severe forms of thalassemia, modern treatment gives a good outlook, but lifelong monitoring and treatment are needed. Proper treatment is essential to prevent complications developing. Children have a lack of hemoglobin (anemic), with various symptoms. Meanwhile, the body tries to make more hemoglobin and more red blood cells. So, the blood system goes into overproduction mode, which can cause more symptoms and complications (Kenny, 2018).

Thalassemia has a negative impact on the quality of life (consider that QoL is removed from the title, used it at the minimum) due to the effects of the disease and its treatment, not only affecting children's physical function but also their social, emotional, and school function, leading to impaired quality of life. The most commonly affected domains previously reported were feelings of depression, anxiety, psychological problems, emotional burden, hopelessness, difficulty with social integration, and school problems. Similar conditions also affected their family members, such as sadness, disappointment, hopelessness, stress, depression, and anxiety about their children's lives (Grabmann & Schermuly, 2019).

Coaching is a crucial competency for leaders, managers, educators, researchers, and practitioners. Coaching helps nurses engage in conversations and relationships that are directed at enhancing professional development, career commitment, and health practice. Health coaching can be a useful strategy for nurses who want to help children achieve their goals. Health coaching enables nurses to use a focused form of communicating. Also, coaching helps nurses increase the enjoyment of and satisfaction with their current roles (Anderson & Funnell, 2010).

Coaching can be used to strengthen current knowledge, promote the acquisition of new skills. Coaches create a supportive and encouraging environment in which the learner acquires knowledge and skills. Coaching can be used to help nurses advance their careers and increase their job satisfaction. Organizations continue to look for ways to retain senior nurses and provide opportunities for junior nurses and to offer practical help and support to all nurses (Rush & Shelden, 2005).

Nursing intervention can at least reduce the effects of the disease on the quality of life for children with thalassemia through reviewing and assessment of the quality of life the children. The nurses have the closest relationship with children and their families. The nurses would be able to use appropriate methods and cause promotion in the quality of life and finally improve the life of these children (Scalone et al., 2008).

The professional nurse coach is a registered nurse who integrates coaching competencies into any setting or specialty area of practice to facilitate a process of change or development that helps individuals or groups realize their potential. The change process is grounded in an awareness that effective change must evolve from within before it can be manifested and maintained externally. Professional nurse coaching is a skilled, purposeful, results-oriented, and structured relationship-centered interaction with clients. It provided by registered nurses to promote the achievement of client goals. It first establishes a co-creative partnership with the client. Effective nurse coaching interactions involve the ability to develop a coaching partnership, to create a safe space, and to be sensitive to client issues of trust and vulnerability and then by identifying the client's priorities and areas for change to achieve pediatric patient goals (Dossey and Hess, 2013).

II. Significance of the study

Thalassemia is one of the most common autosomal recessive disorders worldwide with high prevalence in the Mediterranean, Middle-East, and Central Asia. Beta-thalassemia is caused by the reduced or absent beta globin chain synthesis of hemoglobin (Hb) tetramer, which is made up of two alpha-globin and two beta-globin chains ($\alpha_2\beta_2$). The clinical severity of beta-thalassemia is related to the imbalance between the alpha-globin and non-alpha globin chains. In Egypt, β -Thalassemia is the most frequent hemoglobinopathy. The carrier rate of this disease varies between 5.3-9%, and the gene frequency is 0.03%. It was estimated that 1000/1.5 million per year live birth born with thalassemia disease. Children with transfusion-dependent thalassemia typically should undergo blood transfusions once or twice a month, depending on the severity of the illness (Abdel Hakeem et al., 2018).

WHO statement relating to the process of giving guidance states the provision in the field of nursing using the coaching method as an effort to increase the professionalism of nurses (Herawati et al., 2018). The coaching technique is a way to achieve the best performance for nurses and hospitals. Coaching is one way to maximize performance. It does not provide new skills or knowledge but instead creates a coach to apply the knowledge and skills gained from previous experience to show the best performance.

III. Aim of the study

The study aimed to evaluate the effect of coaching technique on nurses' performance in care of children suffering from thalassemia major. Through the following steps:

- Assess nurses' knowledge toward the care of children suffering from thalassemia major.
- Assess nurses' practice regarding the care of children suffering from thalassemia major.
- Assess nursing behavior toward the care of children suffering from thalassemia major.
- Design and implement a coaching technique for nurses regarding the care of children suffering from thalassemia major.
- Evaluate the effect of coaching technique on the quality of life of children suffering from thalassemia.

3.1. Research hypotheses

- Nurses who will be trained on the coaching technique have their knowledge improved after training compared to their pre-intervention level.
- Nurses who will be trained on the coaching technique have their practice improved after training compared to their pre-intervention level.
- Nurses who will be trained on the coaching technique have their behaviors improved after training compared to their pre-intervention level.

3.2. Operational definition

Coaching: is partnering with clients in a thought-provoking and creative process that inspires them to maximize their personal and professional potential. It is a theoretical definition and review; operational definition means what is meant by the term in the current study.

IV. Subjects & Methods

4.1. Research design

The current study utilized a quasi-experimental (pre/post-test) design. Quasi-experimental research is research that resembles experimental research but is not true experimental research. Quasi-experimental research is similar to experimental research in that there is the manipulation of an independent variable. It differs from experimental research because either there is no control group, no random selection, no random assignment, and no active manipulation (Shuttlerworth, 2008).

4.2. Research Setting

This study was carried out at the inpatient Pediatric Medicine Departments at Benha University Hospital. Pediatric Medicine Departments on the fourth floor of the Hospital and contained four rooms. Each room consists of 4 children beds.

4.3. Subjects

A Purposive sample of (60) nurses and children suffering from thalassemia recruited from the above-mentioned setting. They recruited regardless of their age, gender, qualifications, years of experience, and attendance of training courses.

4.4. Tools of the study

There were five tools utilized to collect the required data. Those tools as the following:

4.4.1. Structured Interview Questionnaire

The researchers designed it after reviewing related references Rund, (2015). It was written in the Arabic language and is composed of two parts

Part (1): Personal characteristics of nurses, such as (age, gender, qualifications, and years of experience).

Part (2): Nurses' knowledge assessment questionnaire: It divided into two subsections:

The first section concerned with assessment of nurses' knowledge related to thalassemia. It included 13 open ended questions such as definition, causes, manifestation, side effect of medication, treatment of thalassemia, complication of blood transfusion and treatment of complication of blood transfusion, methods of prevention of blood transfusion complications, importance of Desfral, side effect of Desfral, iron-rich foods, important of oral care, and methods of protection from infection.

The second section concerned with assessment of the nurses' knowledge related to coaching in nursing: It included five multiple-choice questions such as the definition of coaching, steps, benefits, the definition of nursing coaching, the difference between health coaching and wellness coaching.

Scoring system

Nurses' knowledge was evaluated upon completion of the interview questionnaire sheet as the studied nurses' knowledge was checked with a model key answer, and accordingly, the complete, correct answer was given (one) scores, and (0) for incorrect or do not know answers. The level of nurses' knowledge regarding

thalassemia and coaching was categorized into the following:

Satisfactory = 75- ≤100%

Unsatisfactory = 50- <75%

4.4.2. Coaching Practices Rating Scale

It was adapted from *Rush & Shelden (2006)*. The scale can be used by nurses as a self-assessment tool to reflect on the extent to which his or her coaching practices are consistent with the coaching characteristics. This scale consisted of 14 statements (Acknowledged the learner's existing knowledge and abilities as the foundation for improving knowledge and skills, identified with the learner the targeted skills and a timeline for the coaching process, developed with the learner a plan for action/practice necessary to achieve targeted skill(s) following each coaching conversation). The scoring system for each item was scored as if it is No opportunity to measure (0), if it is none of the time (1), if it is some of the time (2), if it is about half the time (3) and if it is most of the time (4) and all of the time (5). Total score ranged from 14 to 70, categorized into either:

- The competent level from above 65%
- The incompetent level was below 40 %

4.4.3. Coaching Behavior Assessment Scale

It was adapted from *Williams et al., (2003)* to assess nurses' coaching behaviors. The coaching behavior questionnaire consists of 26 statements (When I need it, my coach's tone of voice is soothing and reassuring, my coach is appropriately composed and relaxed, my coach shows support for me even when I make a mistake, during timeouts and halftime, my coach emphasizes what should be done rather) with each responded to on a 5-point Likert scale ranged from never to always a problem.

Scoring system

The statements were scores as; If it is never (zero), if it is seldom a problem (1), if it is occasionally a problem (2), if it is often a problem (3) and if it is always a problem (4). Total scores were ranges from 26 to 104. The behavior level was categorized into either:

- Negative behavior < 60%
- Positive behavior from 60 to 100%

4.4.4. Nursing Practice Observation Checklists

It was developed by the researchers in the light of reviewing related references *Denisco and Barker, (2017)* to assess nurses' practices toward the care of children with thalassemia. It included five procedures' checklists: dental care, infection control, blood transfusion, treatment option, and nutrition, according to the actual nurses' responses. Each procedure divided into sub-items. Total procedure sub-items included 40 statements. The level of nurses' practice was categorized as either poor level (less than 50%), average level (50% to less than 85%), or good level of practice (85% to 100%).

4.5. Procedures

Tools validity was checked through a jury of three experts (professors) of pediatric nursing from the Faculty of Nursing Ain Shams, El-Menofia, Benha University, to test the content validity of the instruments and to judge its clarity, comprehensives, relevance, simplicity, and accuracy. All of their remarks were considered. Some items were rephrased to arrive at the final version of the tools. The tools were regarded as valid from the experts' point of view.

The reliability of the tools was applied using Chronbach's Alpha test. It was ($\alpha=0.95$) for the knowledge assessment questionnaire, ($\alpha=0.72$) for coaching practice and behavior scale and ($\alpha=0.859$) for nursing observation checklist. This value indicates a high degree of reliability for the study tools.

Ethical considerations and human rights: Official permission to conduct the study was obtained from the hospital managers and head of the Medical ward. The participation in the study was voluntary. Each nurse was informed about the purpose, procedure, benefits, and nature of the study, then oral consent obtained from them. Each nurse had the right to withdraw from the study at any time without any rationale. Subjects were informed that obtained data would not be included in any job evaluation. Confidentiality and anonymity of study subjects were assured through coding of all data, and all information has taken was protected.

Official permission for data collection was obtained from the hospitals' managers through the submission of official letters issued from the Dean of Benha Faculty of Nursing. The title, objectives, and outcomes of the study were illustrated as well as the main data items to be covered, and the study was carried out after gaining the necessary permission during the period from the beginning of November 2018 to the beginning of July 2019.

Pilot study was conducted on 10 % of the total study sample (6 nurses) to assess the feasibility of the research process, reliability, clarity, and applicability of the tools. It was also helped to estimate the time needed for data collection, as it was 30 minutes.

Fieldwork: Data were collected from the beginning of November 2018 to the beginning of July 2019. Immediately after the ethical approval was obtained from nurses. The researcher explained the questionnaire aims and items to all nurses included in the study. The total number of the studied sample (60 nurses). The study groups divided into (6 groups). Each group consists of (10 nurses).

The researchers then started to interview each nurse individually, and this took about 20-30 minutes for assessing knowledge. The researchers administered the coaching practices rating scale and coaching behavior assessment scale questionnaire sheets to nurses. The average time needed for the completion of these scales for each nurse was between 20–30 minutes. The researchers then started to assess the care provided by nurses during their actual work with thalassemia children (routine care) 3days/week (Morning and afternoon) (pretest) Implementation of the training program was done through group teaching, according to the number of subjects during the visit. The researchers were assessing nurses' knowledge, behavior, and practice after finishing the training program after one month's interval (post-test). The implementation of coaching program was conducted on three sessions:

The first session was an introductory session. It concerned with the orientation and explanation of reasons and importance of training program. The researcher explained the definition, causes, manifestation, the side effect of medication, treatment of thalassemia, the complication of blood transfusion, and treatment of complications of blood transfusion. Coaching in nursing, such as the define of coaching, steps, define of nursing coaching, difference between health coaching, and wellness coaching.

The second session concerned with an demonstration of dental care, infection control, blood transfusion and nutrition. Third session arranged for re-demonstration of daily dental care, infection control, blood transfusion, drug administration, and nutrition.

Coaching Program:

Steps of coaching technique Construction.

Coaching techniques and tools are used can change the direction of nurse and client's lives. Enhance and enable their nurses to reach their full potential, overcome and help them to accomplish sustainable success. Coaching techniques consist of the following:

1- The 5-minute pre-session Check in

Let nurses complete a short questionnaire before each coaching session. This helps nurses to recognize their progress and success since the last session. This technique helps nurses to mentally prepare for the upcoming meeting and makes your session prep super effective.

2-Use the SMART goal setting technique during coaching

SMART goal setting stands for Specific, Measurable, Attainable, Relevant and Time-Based. This technique brings a clear structure into goals. Each goal or milestone comes with clear and verifiable elements instead of vague resolutions.

3- Let nurses write down and share the gold nuggets after each session

Encourage nurses to share their gold nuggets from each session with you. It leaves them with a clear picture of how much value will get out from coaching. It's easy to help them get going with just a few simple questions like: „What was the most valuable takeaway from this session. This coaching technique helps to avoid misunderstandings. If all these notes are organized in a shared stream that is accessible to nurse can reread and recap these nuggets any time at later stages during the process.

4-Ask open-ended questions

Open-ended questions allow nurses to include more information, including feelings, attitudes, and understanding of the subject. This allows the coach to better access the nurses true thoughts and feelings on the topic.

5- Use the power of writing

Writing down plans and goals is the first step towards making them a reality. Writing is perfect to slow down the process and help clients recognize their progress and to express feelings or thoughts. Writing enhances nurses power of observation and focus during a change or development process. Regular writing has also been linked to improved mood and reduced stress levels.

6-Be fully present and focused

Take two minutes for yourself and breathe calmly before each session. Once your meeting has started try to avoid distractions and give nurses undivided attention. Make nurses more genuine interest. This may sound self-evident but is an important step toward building trust and a meaningful coaching relationship.

7-Follow-up and use ongoing feedback for invaluable information

Check in with regular questionnaires where nurses share their progress, experiences, success or challenges they might be facing. This ongoing feedback as a follow-up between sessions is a perfect way to monitor and evaluate the effectiveness of the coaching.

8- Assignment to strengthen accountability

worksheet, questionnaire or action item. They all support the work practices within a coaching session. They help nurses to reflect, take action and achieve necessary milestones towards their bigger goal. It helps nurses to keep the focus on their plans, ideas, and goals. Nurses take responsibility for their development, actions, and success during the coaching process and life in general.

9-Coaching models and techniques – The GROW model

The GROW model is a simple method for goal setting and problem-solving in coaching. It includes for stages:

G for Goal: The goal is what the nurses wants to accomplish. It should be defined as clear as possible. Nurses during this phase describes her current situation and how far she is away from her goal.

O for obstacles and options: What are the obstacles (roadblocks) that keep nurses from achieving the goal? Once these obstacles are identified you can find ways to overcome them – the options.

W for way forward: Once identified the options need to be converted into action steps that will nurses take to accomplish goal.

10- Positive coaching techniques – „My goal is achieved“

This tool is based on the famous miracle question and is a very motivational coaching technique. Nurses able to describe a perfect day once the desired goal is achieved. It shouldn't be just a vague description but a whole day from start to finish. How would she feel after waking up? What would she do? How would she feel? This technique will encourage them to use her positive imagination and visualize what she truly desires.

11-Use every session to become a better coach – Improve your skills

Every single session offers you the chance to become a better coach and to improve your coaching skills. Take five minutes immediately after nurses left session and write down some thoughts. You can track reactions to questions of a client. Think about methods and techniques you have used in the session and how they worked.

Reflect upon the overall success of the session. Is there something you would do differently if you could „replay“ the session? Add comments, plans, notes, and ideas for the next session.

12-Use the power of coaching software

A coaching software is a platform that supports you and nurses during the whole coaching process. A coaching software help to easily implement all the coaching techniques and tools, ensures the long-lasting and sustainable success and saves you a lot of time with your daily tasks like session prep, worksheet assignments, and documentation.

A. General objectives;

The aim of the coaching program was to improve the nurses' knowledge and practice regarding the care of children with thalassemia major.

B. Specific objectives;

-By the end of this program, each nurse should be able to:

(according to the given handout and questionnaire)

Define the blood

Identify the blood component.

Mention function of hemoglobin.

Define of thalassemia.

Determine the classification of thalassemia.

Mention the most common causes, factors for thalassemia.

Enumerate symptoms of thalassemia.

Enumerate type of thalassemia.

Determine lines of thalassemia treatment.

Mention diagnostic test for thalassemia.

List medical treatment for thalassemia.

Discuss methods of blood transfusion for a child with thalassemia.

Determine the nutritional requirements that should be given to the child.

Identify methods of Desefral administration.

Apply nursing interventions for the child during Desefral administration.

Enumerate side effects of Desefral administration.

Identify methods of prevention of thalassemia.

Enumerate methods to maintain child health.

Define of coaching
Enumerate steps of coaching
Define of nursing coaching
Differentiate between health coaching and wellness coaching
Discuss effective coaching in nursing practice

Teaching and Learning Methods:

Lectures, power points presentations, hand out, video tutorials, brainstorming, and group discussion.

Evaluation of training

During this period, the researchers were observed each nurse practice on morning and afternoon shifts using the nursing practice observation checklist by the same researchers. The time needed for each observation for each nurse was 20-30 minutes three times during providing care for children with thalassemia through pre and post and follow up using the same forms and assessed their knowledge and behaviors through nurses' self-administered questionnaire sheet. Nursing observation checklist was completed by the researchers after the implementation of the training course to assess nurses performance at pre and post and follow up.

Administrative design

4.6. Data analysis

The collected data revised, organized, tabulated, and analyzed by using SPSS (Statistical Package for the Social Science Software) statistical package version 20 on IBM compatible computer. Numerical data (Quantitative data) was presented in tables by using Mean, Standard deviation ($X \pm SD$), and analyzed by applying t-test for normally distributed variables. In contrast, qualitative data were expressed as frequency, and percentage and chi-square were used. Additionally, other statistical tests such as Independent t-test was used as a parametric test of significance for comparison between two samples means. F test was used to measure the relationship between quantitative variables.

P-value at 0.05 was used to determine significance regarding:

P-value $> .05$ to be statistically insignificant.

P-value ≤ 05 to be statistically significant.

P-value ≤ 001 to be highly statistically significant.

V. Results

Regarding nurses' age, more than half (58.33%) of the studied nurses had an age between 25-30 years old, with a mean age of 25.86 ± 3.00 . Concerning gender, more than three quarter (78.33%) of the studied nurses were female, more than half (58.33%) of the studied nurses had years of experience from 3-<6 years, with mean experience 5.13 ± 1.85 . Meanwhile, less than three quarter (66.66%) of studied nurses had a diploma in secondary nursing school.

Table (1): Shows a highly statistically significant improvement in knowledge for the studied nurses regarding definition, causes, manifestation, complications, primary treatment of thalassemia, complications, treatment and prevention of complication of blood transfusion at post and follow up application of coaching technique as compared to pre-application of coaching technique ($P < 0.001$).

Besides, a highly statistically significant improvement in knowledge for the studied nurses regarding the importance of treatment of thalassemia with Desfral or Elxgid, the side effect of Desefral, iron rich foods, importance of oral care, and methods of protection from infectious diseases at the post and follow up application of coaching technique as compared to pre-application of coaching technique ($P < 0.001$).

Table (2): Shows that a highly statistically significant improvement in knowledge for the studied nurses regarding define, steps, benefits, nursing coaching and the difference between health coaching and wellness coaching at the post and follow up application of coaching technique as compared to pre-application of coaching technique ($P < 0.001$).

Table (3)Presents a highly statistically significant difference in all items of nursing practice (dental care, prevent infection, blood transfusion, drug administration, and nutrition) at the post and follow-up coaching intervention as compared to the pre-coaching application ($X^2 = 70.53$, $P < 0.001$).

Figure (1): Shows that the majority (91.70% and 96.70%) of studied nurses had satisfactory knowledge towards children with thalassemia in the post and follow up coaching application as compared to the pre-coaching application ($F = 279.81$, $P < 0.001$).

Figure (2): Showed that majority (81.70% and 93.30%) of studied nurses had good practice towards children with thalassemia in the post and follow up coaching application as compared to the pre-coaching application ($F = 105.15$, $P < 0.001$).

Figure (3): Reflects that the majority (93.30% and 98.30%) of studied nurses had positive behavior towards children with thalassemia in the post and follow up coaching application as compared to the pre-coaching application (F 38.325, P<0.001).

Figure (4): Illustrates that the majority (87% &93%) of studied nurses had competent coaching practice in the post and follow-up as compared to pre-coaching. The majority (100%) of studied nurses had incompetent coaching practice.

Table 4 shows a highly statistically significant difference (P-value <0.001) between pre, post, and after three months of implementation of the training program concerning their total knowledge, behaviors, and practice score.

Table (1): Comparison of the studied nurses' knowledge related to Thalassemia pre, post, and follow up coaching technique (n=60).

Knowledge elements	Pre Mean ±SD	Post Mean ±SD	Paired t-test	P	Pre Mean ±SD	Follow up Mean ±SD	Paired t-test	P
Definition	1.16±0.36	2.00±0.00	22.79	<0.001	1.16±0.36	1.85±0.35	33.60	<0.001
Causes	1.29±0.45	2.00±0.00	15.56	<0.001	1.29±0.45	1.90±0.30	55.53	<0.001
Manifestations	1.95±0.21	3.00±0.00	47.93	<0.001	1.95±0.21	2.93±0.25	46.18	<0.001
Complications	1.00±0.00	2.00±0.00	-	-	1.00±0.00	1.82±0.38	11.80	<0.001
The primary treatment of thalassemia	1.64±0.48	2.00±0.00	7.46	<0.001	1.64±0.48	2.00±0.00	7.46	<0.001
The complication of blood transfusion	1.03±0.17	2.00±0.00	56.57	<0.001	1.03±0.17	2.00±0.00	56.57	<0.001
Treatment of complication of blood transfusion	1.30±0.46	2.00±0.00	15.14	<0.001	1.30±0.46	2.00±0.00	15.14	<0.001
Methods of prevention of blood transfusion complication	1.05±0.21	2.97±0.17	70.41	<0.001	1.05±0.21	2.76±0.55	22.08	<0.001
The importance of treatment with Desferal or Elxgid	1.60±0.49	2.00±0.00	55.15	<0.001	1.60±0.49	2.00±0.00	55.15	<0.001
The side effect of Desferal	0.64±0.84	1.20±1.47	7.40	<0.001	0.64±0.84	1.20±1.47	7.40	<0.001
The iron-rich foods	1.42±0.55	2.88±0.43	18.93	<0.001	1.42±0.55	2.96±0.19	25.24	<0.001
The importance of oral care	0.79±0.49	1.83±0.47	14.65	<0.001	0.79±0.49	1.72±0.56	16.79	<0.001
Methods of protection from infectious diseases	2.12±0.68	5.22±1.10	30.56	<0.001	2.12±0.68	3.97±1.45	22.74	<0.001

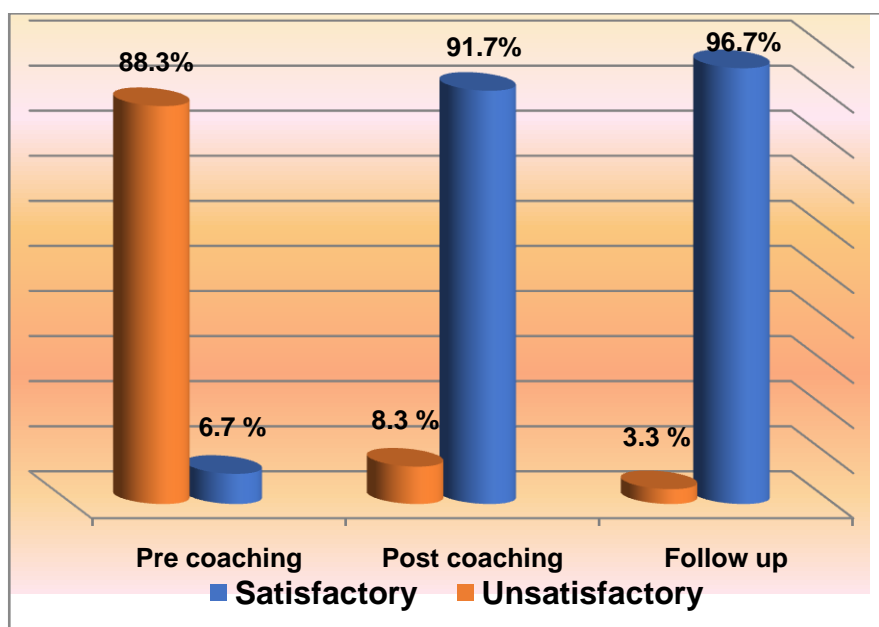


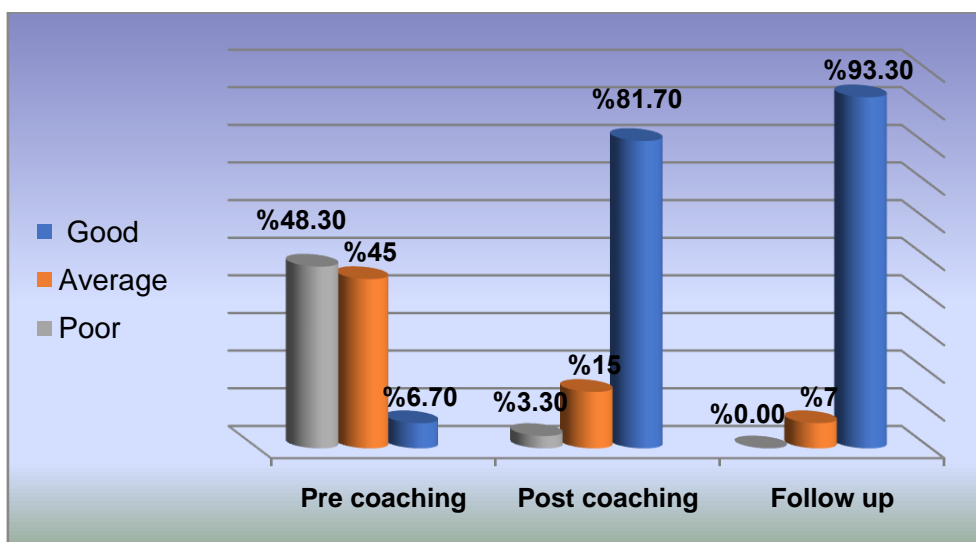
Fig (1): Total knowledge scores of studied nurses' regarding thalassemia and coaching pre, post and follow-up (n=60).

Table (2): Comparison of the studied nurse knowledge score regarding coaching at pre, post, and follow up application of coaching technique (n= 60)

Knowledge elements	Pre coaching		Post coaching		X ² test	P	Pre coaching		Follow up		X ² test	P
	The complete and correct answer	Incorrect and Unknown	Complete and Correct answer	Incorrect and Unknown			The complete and correct answer	Incorrect and Unknown	Complete and correct answer	Incorrect and Unknown		
	%	%	%	%			%	%	%	%		
Define of coaching	10%	90%	88.3%	11.7%	73.65	0.00	10%	90%	85%	15.0%	0.288	0.591
Steps of the coaching process	3.3%	96.7%	91.7%	8.3%	93.86	0.00	3.3%	96.7%	88.3%	11.7%	0.370	0.543
Benefits of nursing coaching	6.7%	93.3%	95%	5.0%	100.86	0.00	6.7%	93.3%	91.7%	8.3%	1.745	0.186
Define of nursing coaching	0.0%	100%	95%	5.0%	108.57	0.00	0.0%	100%	90%	10%	1.081	0.298
Difference between health and wellness coaching	0.0%	100%	96.7%	3.3%	112.25	0.00	0.0%	100%	96.7%	3.3%	1.365	0.243

Table (3):Comparison of the studied nurses' practice regarding thalassemia children care procedures at pre, post and follow up of coaching intervention (n=60)

Nursing care procedure	Pre coaching				Post coaching				X ² test	P	Follow up				X ² test	P
	Completely Done		Incompletely and not done		Completely Done		Incompletely and not done				Completely Done		Incompletely and not done			
	No.	%	No.	%	No.	%	No.	%			No.	%	No.	%		
Dental care	22	36.33	38	63.33	44	73.33	16	26.66	16.29	0.00	54	90.0	6	10.0	36.74	0.00
Prevent infection	7	11.66	53	88.33	51	85.00	9	15.0	64.60	0.00	53	88.33	7	11.66	70.53	0.00
Blood transfusion	23	38.33	37	61.66	41	68.33	19	31.66	10.84	0.00	56	93.33	4	6.66	40.34	0.00
Drug administration	12	20.0	48	80.0	46	76.66	14	23.33	38.57	0.00	54	90.0	6	10.0	59.39	0.00
Nutrition	8	13.33	52	86.66	48	80.00	12	20.0	53.57	0.00	51	85.0	9	15.0	61.65	0.00



Fig(2): Total nursing practice scores regarding the care of children with thalassemia through the coaching technique phases (n=60).

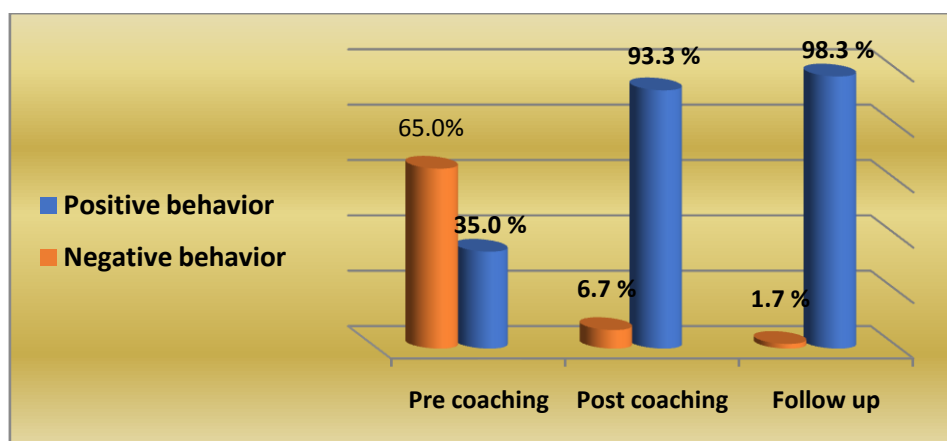


Fig (3): Total scores of studied nurses' behavior toward children with thalassemia through the coaching technique phases (n=60).

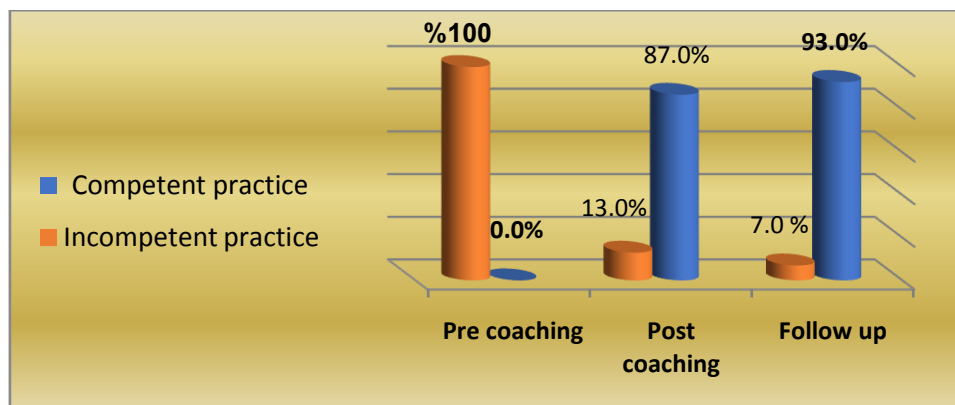


Fig (4): Total coaching practices of the studied nurses at pre, post, and follow up of coaching application (n=60).

Table (4): Comparison of total knowledge, behavior, and practice scores of nurses regarding children with thalassemia through coaching application phases (No 60).

Items	Study group (n=60)						F	p
	Pre coaching		Post coaching		Follow up			
	No.	%	No.	%	No.	%		
Total knowledge score								
Satisfactory	3	6.7%	55	91.7%	58	96.7%	279.811	.000
Unsatisfactory	57	88.3%	5	8.3%	2	3.3%		
Total behavior score								
Positive	21	35.0%	56	93.3%	59	98.3%	38.325	.000
Negative	39	65.0%	4	6.7%	1	1.7		
Total practice score								
Good	4	6.7%	49	81.7%	56	93.3%	105.159	.000
Average	27	45%	9	15%	4	6.7%		
Poor	29	48.3%	2	3.3%	0	0.0%		

VI. Discussion

Coaching method is a way to achieve the best performance for nurses and organizations. Coaching is one way to maximize performance. It does not provide new skills or knowledge but instead creates a coach to apply the knowledge, skills gained from previous experience to show the best performance. Nurse coaches who incorporate coaching into professional practice are developing across the entire spectrum of health, wellness, and healing. The use of nurse coaching strategies is designed to improve caregiver management skills, which can then improve children and caregiver outcomes. The coaching programs help the nurse to use posited behavioral self-efficacy mechanisms (Jordan et al., 2015).

Regarding the socio-demographic data of the studied nurses, the results of the current study showed that more than half of the studied nurses had an age between 25-30 years old, with a mean age of 25.86±3.00. This study following Misiukonis, (2011), who study "The conclusions middle managers draw from their beliefs about organizational coaching and their coaching practices." The study founded that, half percent of nurses were in age group from 25 to less than 35 years, with mean age 22.05±2.30, and 72.2% of them were females. The majority of nurses (55.5%) had a bachelor's degree of nursing.

Concerning gender, more than three quarter of the studied nurses were female, more than half of the studied nurses had years of experience from 3-< 6 years old, with mean experience 5.13 ±1.85, and less than three-quarters of studied nurses had a diploma of secondary nursing school. This study following Palit et al., (2012), who conducted "A study of the prevalence of thalassemia and its correlation with liver function test in different age and sex group in the Chittagong district of Bangladesh." The study illustrated that almost half had from 5 to less than ten years experiences in nursing career with mean 6.58±1.64.

Concerning the knowledge of studied nurses, there was a highly statistically significant improvement in knowledge for the studied nurses post and follow up after implementation of the coaching intervention. The improvement encompassed concept, causes, manifestation, complications, the side effect of the drug, primary treatment of thalassemia, the complication of blood transfusion and treatment of complication of blood transfusion at the post and follow up application of coaching program as compared to pre-application of coaching program (P=<0.001).

This finding may be attributed to coaching in nursing improved confidence and autonomy in one's role, improved job satisfaction and productivity, and the development of new knowledge and skills. This finding agreed with Chatterjee, (2008), who study the "Assessment of the knowledge of thalassemia in the thalassemia

patients and the treatment received by them,” who found that more than half of the studied children (60.0%) had poor knowledge level regarding thalassemia. Also, these findings agreed with *Ali, (2008)*, who study the “Effect of booklet and combined method on parents' awareness of children with β -thalassemia major disorder.” The study demonstrated that education in each of the booklet and combined groups had a significant positive effect on increasing knowledge of the children regarding thalassemia. Also, *Sushant et al., (2011)*, who study “Thalassemia Major:Advantages of separate thalassemia unit with regards to awareness and compliance.” The study reported that, the education whether through a booklet or combined methods have a significant positive effect on increasing knowledge of the nurses about care of children with thalassemia.

Concerning, studied nurses knowledge toward coaching, there was a highly statistically significant improvement in knowledge for the studied nurses regarding definition, steps, benefits, nursing coaching and the difference between health coaching and wellness coaching at post and follow up application of coaching program as compared to pre-application of coaching program ($P<0.001$). This finding may be attributed to coaching can help nurses acquire essential knowledge to manage change and solve problems effectively as individuals, as one-on-one care providers.

This study is in accordance with *Amentorp&Kofloed, (2010)*, who study “Coach training can improve the self-efficacy of neonatal nurses: A pilot study.” Coaching is a process that facilitates self-growth and provides information and skills to awaken the trainee's potential abilities, they illustrated that, the continuous feedback provided for each measurement in this coaching program might have contributed to enhancing confidence among child care teachers regarding their ability to provide management.

also, this study agreed with *Piamjariyakul et al., (2014)*, who study “the feasibility of a telephone coaching program on heart failure home management for caregivers.” They reported that coaching uses interactive approaches that engage clients to actively take part in problem-solving and decision making about their healthcare. These findings are supporting the first research hypothesis.

As regards studied nurses' behavior, there was a highly statistically significant improvement in the studied nurse behavior regarding children with thalassemia at the post and follow up application of coaching program as compared to pre-coaching program application. This result may be attributed to coaching is to help the nurse learn to regulate their behaviors in order to achieve success in the workplace. This study agreed with *Higgins (2009)*, who reported that coaching improved work attitude and was effective in enhancing core performance. Staff perceived that the coaching program directly affected effectiveness as staff felt that they were better equipped to undertake their roles through the support and guidance they received. Also, this study is in accordance with *Oakoh& Lee, (2018)*, who study the Effect of a first aid coaching program on first aid knowledge, confidence, and performance of child care teacher.” The study demonstrated that trainees showed significant improvements (43%) in their performance, which improve from a previous average score of 23.50 to an average of 33.70 in each performance capability test. Since coaching is goal-oriented and focuses on the issues currently facing a learner, it has the advantage of helping to motivate participants' creativity and their unique solutions. There were significant differences in pre-post knowledge scores between the experimental (5.17 ± 1.66) and control groups (3.20 ± 1.19). The knowledge scores were significantly higher compared in the experimental group than in the control group ($t=4.24, p=.001$).

Concerning nurses' practice, there were highly statistically significant differences in all items of nursing practice (dental care, prevent infection, blood transfusion, drug administration, and nutrition) at the post and follow up coaching application as compared to the pre-coaching application. This finding may be attributed to coaching is a valuable tool in helping nurses to maximize their potential and enhance their performance and can be used for team building, management of change, and staff development.

This study supported by *Godfrey et al., (2013)*, who study the “Improvement capability at the front lines of health care helping through leading and coaching.” The study reported that the benefit of coaching was related to the personal experience of learning and practicing improvement. The coaching program carved out time to actively coach a team, practice what they were learning and share with other coaches in training after the formal process ended.

Also, this study agreed with *DeCampli et al., (2010)*, who study “Beyond the classroom to coaching.” They explored that the improved management of staff appeared to lead to improvements in the quality of care given to pediatric patients. Coaching reduces conflict because problems are identified quickly and managed in a more effective manner. Also, this study followed *Byrne et al., (2017)*, who study the “Clinical coaches in nursing and midwifery practice: Facilitating point of care workplace learning and development.” The study reported that participants in the experimental group who received the intervention showed a 10.20 ± 4.51 point increase in the performance score, which was statistically significant ($t=12.40, p<.001$). Additionally, all performance scores for the coaching areas were significantly higher in the experimental group than in the control group ($t=3.92-9.28, p<.001$). Meanwhile, this study supported *Hill et al., (2015)*, findings who study the designing of effective health coaching interventions.” The study displayed the coaching program participants’

views about a positive impact of coaching on performance. Most of the participants (90%) reported that they had made changes in their clinical practice as a result of coaching. They reported that the coaching made them more effective, that it would assist with challenging conversations, effective communication, and improved patient satisfaction ratings. Coaching represents a method of teaching that requires little nurses' time and seems to have a positive impact.

VII. Conclusion

- Based on the results of the present study, the study was concluded that implementation of the nursing coaching technique is a highly effective method to improve nurses' knowledge, behaviors, and practice.

VIII. Recommendations

Based on the findings of the current study, the following recommendations were deduced

- Coaching courses should be included in the nursing curriculum.
- Coaching training programs should be introduced in the inpatient and outpatient settings of the hospital before, during, and after various medical procedures boost their learning skills.
- The same study can be conducted for parents of children with chronic disease through a meeting or mobile coaching program.
- Periodically follow up coaching training should be recommended to refine knowledge and practices for improvement nurses performances.
- Generalizing coaching training program for all nurses in the hospital to improve their performance regarding the care of children with chronic disease.

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