Immune Thrombocytopenia: Effect of Self Care Guidance on Patients Quality of Life and Bleeding Control

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Abstract

Background: ITP can impact on many aspects of patients' life such as work, relationships and daily living. Proper nursing guidance can enhance the quality of life and reduce bleeding incidence. Aim: Evaluate the effect of self care guidance on quality of life and bleeding incidence for patients with immune thrombocytopenia. Design: A quasi experimental design was used. Sample: 60 adult patients were randomly assigned into 2 equal groups, 30 study and 30 control. Setting: The study conducted Internal medicine department and Hematological outpatient clinic at Assiut University Hospital. Tools: (I): Patient's assessment sheet, (II): ITP Life Quality Index (ILQI) and (III): The ITP Bleeding Scale (IBLS). Results: A statistically significant differences between study and control groups related to quality of life and bleeding incidence post implementation of self care guidance. Conclusion: The implementation of self care guidance has a positive effect on patient quality of life and reduce bleeding incidence. Recommendations: self care guidance should serve as the basis for routine nursing care for patients with immune thrombocytopenia to improve their quality of life and reduce bleeding incidence.

Introduction

Immune thrombocytopenia (ITP) is considers an autoimmune disorder it characterized by immunologic destruction of platelets, resulting in increased risk of bleeding, it the primary symptom that reported by patients with ITP. Severity of bleeding range from mild bruising and mucosal bleeding to severe hemorrhage (Cooper et al., 2021). ITP impact on patients' quality of life which affect the entire patient' life, includes work, activities of daily living, emotional health and energy level (Provan et al., 2019).

ITP negatively impacting the patient quality of life (QoL), the primary goal of treatment is prevention of life-threatening bleeding that requires lifelong treatment of adult patients (Chakrabarti et al., 2021).

Improvement in health-related QoL (HRQoL) parameter was considered the important objective of ITP treatment in the updated guidelines (Sestøl et al., 2018).

ITP has a substantive, multifarious impact on patients' quality of life and the goal of therapy is to cease bleeding and prevent future hemorrhage. The first-line therapy is indicated for patient with bleeding complications and who is at increased risk of bleeding, the decision to initiate therapy not only depend on platelet count and risk of bleeding, it is depends on other factors such as quality of life and patient' lifestyle variables. Improving quality of life and patient outcomes are important considerations when evaluating benefits of treatments (Neunert et al., 2019).

Operational definitions:

-Immune thrombocytopenic purpura (ITP): It is characterized by low platelet count less than 100,000/μL and normal white blood cell (WBC) count and hemoglobin level. and presence of red-purple rash called purpura. It leads to increased risk of bleeding. ITP considers a type of thrombocytopenic purpura (Nicole & Anthony, 2022).

- Self care guidance education: Is a tool to support self-care, interventions of self care include evidence-based, quality drugs, devices, diagnostics and/or digital products which provided fully or partially outside of formal health services and can be used with or without health worker (World health organization, 2022).

- Quality of life: Is the degree to which an individual is healthy, comfortable and capable to participate in or enjoy life events (Jenkinson, 2024).

- Incidence of bleeding: The number of significant bleeding episodes which occurs in a defined time during the patient's life (Tosetto et al., 2013).

Significance of the study:

Patients with immune thrombocytopenia suffer from bleeding, fatigue and it has a significant impact on daily activities, emotional health and social role, that negatively impact on patients' quality of life. Therefore the present study will be conducted to provide those patients with self care guidance education to improve quality of life and reduce bleeding incidence for patients with immune thrombocytopenia.

Aims of the Study

This study was conducted to evaluate the effect of self care guidance on quality of life and bleeding incidence for patients with immune thrombocytopenia.

Research hypotheses

H0: Quality of life and bleeding incidence for patients with immune thrombocytopenia will not be affected after implementation of self care guidance.

H1: Quality of life and bleeding incidence for patients with immune thrombocytopenia will be improved after after implementation of self care guidance.

H2: Quality of life and bleeding incidence for patients with immune thrombocytopenia will be reduced after after implementation of self care guidance.

Materials and Method
Design:

Quasi experimental (study - control) design. This type of studies includes working with independent variables random assignment of participants terms (Mohajan, 2020). The Self Care Guidance considered the independent variables while the dependent variable was: Patients Quality of Life and bleeding incidence.
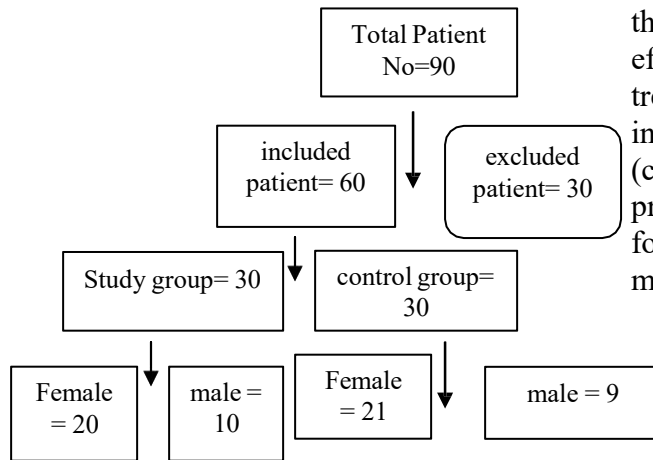
Setting:

This study was conducted in Internal medicine department and Hematological outpatient clinic at Assiut University Hospital. Internal medicine department located at the ninth floor. serves the biggest region of population from both rural and urban area, consisted of two sectors (male and female) each sector consists of five rooms each room has four beds. The Hematological outpatient clinic is located on the ground floor of the outpatient clinic building at Assiut University Hospitals divided into two clinics, the first one for clinical diagnosis and another is to following up for patients with ITP. It attached to meeting room to instruct and teaching patients contain 30 chairs and data show projector.

Sampling and sample size: Throughout nine months 90 ATP patients were admitted at the above mentioned settings (**Assuit university hospital record , 2023**) . Among whom 60 consecutive patients fulfilling the inclusion criteria of the study (age from 18 - 55 years, who are willing to participate in this study, recently diagnosis within three months first line management); randomly were divided into two equal groups (30 patients for each) as follow:

• Control group who followed the routine prescribed medication only.
• Study group to whom assigned to pre and post study and receiving suggested self care

guidance , in addition to prescribed medication.

- An overview of sample recruitment for the present study is presented in the following :

```
                Total Patient
                   No=90
                      |
                      v
included                    excluded
patient= 60                 patient= 30
                      |
                      v
Study group= 30          control group=
                             30
      |                           |
      v                           v
Female   male =      Female         male = 9
= 20      10         = 21
```

Exclusion criteria:
Patients with other type of thrombocytopenia , not recently diagnosis more than three months , patients with other causes of bleeding tendency as (liver disease, cancer …., et).

Sample size: It was calculated using using Epi Info (Epidemiological Information system) Software Version 6. The study's power was 80%, and there was a 95% confidence level in the acquired data.

The following formula was used:

$$n = \frac{(z\alpha/2)2 \times pq}{d2}$$

where :
n= sample size .
p=percentage.
q=1-p.
d= desired degree of precision.
Z= is the standard normal value at the level of confidence desired , usually at 95% confidence level .

Tools: In order to collect the necessary data for the study two tools were used:
Tool I. Structured Interviewing Questionnaire:
It was developed by the researcher based on current national and international literatures. It include two parts .

Part I : Socio-demographic data for the patient as age, gender, marital status, level of education, occupation, and residence.
Part II- Clinical base data: It includes laboratory investigations assessment to confirm the diagnosis with ATP and to evaluate the effect of self care guidance and prescribed treatment for patient with ATP on bleeding incidence and quality of life . It included: (complete blood count , coagulation time) and pretest for subsequent evaluation and twice for follow up (post one and three month) to monitor the rate of these parameters.

Tool II. ITP Life Quality Index (ILQI): It was developed by (Grant et al., 2018). This tool was used to assess patient' quality of life. ILQI was used for evaluating how patients experience ITP and its treatment. This cover many aspects of ITP, including diagnosis, symptoms, HRQoL, emotional well-being and impact on work, who patients seek support after diagnosis, treatment and satisfaction with therapies, (Susan , 2021).
ILQI included 10 items, generally have four options of response from 'never' to 'all of the time and three items (1, 2 and 5) have additional response options for patient. Using the mean of all items transformed to reflect the initial maximum total score of 40. The calculation for total ILQI (alternative) score as follows:
- ILQI total (alternative) score = total sum score of all answered items/number of items with a score $\geq 1 \times 10$.
 - Score of ≥ 20 for (impaired HRQoL) and score of ≥ 30 for (significantly impaired HRQoL).
HRQoL validiaty and reliability:
Reliability was supported (Cronbach's alpha = 0.90). ILQI scores increased with ITP severity. ILQI scores correlated with measures of fatigue and emotional well-being. **(Viana et al , 2021)**
Tool III: The ITP Bleeding Scale (IBLS): It was developed by (Page et al., 2007). The bleeding scale comprises grades of severity (from 0 to 2) assessed in 9 anatomical sites: skin, oral (each of them recorded from history and physical exam), epistaxis, pulmonary,

gastro-intestinal, gynecological, intracranial and subconjuctival hemorrhage.

The ITP Bleeding Scale (IBLS) validity and reliability:

IBLS scale is a novel bleeding assessment system comprising 11 site-specific grades. This tool used for monitoring bleeding and to aid in the development of laboratory parameters which correlate with underlying bleeding propensity in thrombocytopenia. (Lemke, 2007).

Tool IV Self care guidance booklet:

It was designed by the researcher depending on literature reviews Using simple Arabic language with illustrations in the form of booklet.

It included the following: ***Part I:*** Suggested Nursing guidelines: It developed by **(Jinna & Khandhar, 2024)**. and comprised the following: definition, causes, manifestations, treatment, complications, safety measures to prevent bleeding, importance of giving prescribed medication , physical activity, follow up visits schedule.

Part II: Ideal diet plan for ITP patients :

It was approved by the doctor (**Yomna Refaat Mahboub, Lecturer** , *Hematology, Faculty of Medicine, Assiut University who participate in this study)* as maintaining a nutritious diet is crucial for ITP patients as it helps optimize overall health, supports immune function, aids in preventing infections, and assists in the production of healthy platelets. It included:

Iron: Iron-rich foods like lean meats, poultry, fish, fortified cereals, legumes, and leafy greens can help combat anaemia and promote healthy blood cell production.

Vitamin C: Foods like citrus fruits, berries, kiwi, tomatoes, and bell peppers are rich in vitamin C, which aids in iron absorption and collagen synthesis.

Vitamin K: Leafy greens (kale, spinach, broccoli), cabbage, Brussels sprouts, and fermented foods (natto) contain vitamin K, which supports blood clotting.

Omega-3 Fatty Acids: Cold-water fish (salmon, mackerel, sardines), flaxseeds, chia seeds, and walnuts are excellent sources of omega-3 fatty acids, which can reduce inflammation and improve platelet function.

Antioxidants: Brightly coloured fruits and vegetables such as berries, cherries, spinach, kale, and beets contain antioxidants that support overall health and may help manage ITP symptoms.

Tools face validity:

Face validity: After the researcher created the instruments, the part-validation of the instruments was reviewed by a group of five experts. Two of the experts were hematologists, and the others were medical-surgical nursing staff. The experts reviewed the content validity of the instruments. No modification for data collection instrument.

Tools reliability:

It refers to the degree the thing it is supposed to be measuring. Cronbach's alpha coefficient was used to examine the reliability of the tools. Reliability of tool I, II, III and IV was (0.83, 0.86, 0.88 and 0.87 respectively).

Pilot study: It was carried out on 10% (6 patients) in order to evaluate the suitability, accuracy, and amount of time needed for each tool. Obtained data was analyzed; No modification for data collection instrument, so the 10% of subjects were included. The pilot study found that the average time needed to complete the tools (30 min).

The patients in the pilot study were included in the study population.

Fieldwork:

Data was gathered from April 2023 to January 2024, for nine months; the researchers attended to the study settings three days through a week between 9:00 am to 1:00 pm. Both the director of the internal medicine Department and the head of the hospital officially approved the study's conduct. Steps have been taken to protect patients' ethical rights. After being fully told about the purpose and design of the study, each patient was requested to sign a written consent form. There were four stages to the study: Planning, implementation, assessment, and evaluation.

Phase I- Preparatory Phase:

Administrative approval:

During this period; the hospital's administrator, nursing supervisors, and internal medicine

department and hematology outpatient clinic received formal approval from the researchers to carry out the study , A written approval was obtained from the director of internal medicine department to carry out the study and from responsible physician for accepting the self care guidance for patients with ITP. It also includes a recent review of relevant literature to collect necessary data for study following a review of literature; the study materials and nursing intervention protocol were developed.

Ethical considerations:

The research proposal was approved by the Ethical Committee in the Faculty of Nursing, Assiut University. Official approvals were obtained from internal medicine department and hematology outpatient clinic at the Main Assiut University Hospital The study adhered to accepted ethical standards for clinical research. Patients who participated in the study were given the opportunity to give their consent after being informed of its scope and objectives. The study participants had no risk when the research was applied. Anonymity and confidentiality were guaranteed. The participants were given the opportunity to refuse participation and they could withdraw at any stage of the data collection without giving any reason without any change in care given to patient. The studied sample also assured that any information collected would be confidential and used for the research purpose only.

Phase II- Assessment phase (Pretest):

Once the study was approved to conduct the intended research, interview was conducted with patients to discuss the goal and nature of the study and ensure privacy and confidentiality. Researcher started to recruit the sample according to eligibility criteria and divided this sample into two groups randomly. The information obtained from collecting data served as baseline or pretest data.

Researcher used tool (I) structured interviewing questionnaire include socio-demographic and Clinical base data for the patient. The researchers used tool (II) ITP Life Quality Index to assess quality of life and tool (III) the ITP Bleeding Scale to assess bleeding incidence for patients with immune thrombocytopenia. The average time taken for filling the study tools was 40-50 minutes depending on the response of patients.

Phase III: Implementation phase:

The researcher met with the patients individually, and administered the self care guidance utilized simple terms appropriate for the patient's educational background. The study group was given a copy of the self care guidance which conducted through two sessions for each patient and the duration of each session was around 20 to 30 minutes. The patients had the time to ask questions, express their feeling.

The first session: The content included information regarding immune thrombocytopenia, definition, causes, manifestations, treatment and complications.

The second session: The content of this session included information regarding safety measures to prevent bleeding, healthy diet, physical activity, follow up visits schedule.

Phase V: Evaluation phase:

After three month on follow-up appointment both groups were evaluated. The researcher assess quality of life using (**Tool II) ,** and assess bleeding incidence using (**Tool III),** while clinical base data (**part two Tool I)** evaluated twice (one and three month) .

- Clinical base data , quality of life and bleeding incidence among study group evaluated after self care guidance education in comparison with control group. After result findings, self care guidance education was provided by the researchers to control group.

-The time and place for follow up were arranged within the out patients clinic of hematology at Assiut University Hospital for reevaluation.

*Statistical analysis***:**

The obtained data were coded, categorized, analyzed and tabulated. Descriptive statistics as mean, percentage, and standard deviations using SPSS version 23. Statistical significant differences were considered at P. value less than 0.05. To determine significant difference for numeric variables using t-test. While for non-parametric chi square test was used and correlations were done by Pearson Correlation.

Results

Table (1) Shows distribution of studied sample according to their sociodemographic characteristics. It showed that, age of both groups (study and control) ranged from (30-40), more than half of patients were female in both groups (66.7.0% and 70.0%) in both study and control group respectively. Concerning to marital status the majority of patients were married with percent (83.4% in study group and 83.4% for control group). Regarding to level of education, the study group shows more than half of patients were secondary level of education with percent 66.7% while 63.3% in control group have the same level of education, Housewife patients represented (50%) in study and (56.6 %) in control groups.

Table (2) Shows distribution and significant difference of the study and control groups according to their clinical base data and laboratory investigation one month post implementing self care guidance , There is statistical difference between study and control groups one month post implementing self care guidance in WBC with p-value (0.015) , Hb , Platelet with p-value (0.014 and 0.002) and Prothrombine time with p-value (0.000).

Table (3) Exploring a comparison between the two studied groups according to their clinical base data and laboratory investigation three month post implementing self care guidance, Illustrated that there is highly statistical difference between study and control groups three month post implementing self care guidance in Hb, RPCS and Platelet with p-value (0.002, 0.001 and 0.002).

Table (4) Show a comparison between study and control group according to related to ISTH-SSC Bleeding Assessment Tool (three month post implementing self care guidance). It revealed that, the subjects of both study and control groups had a statistical difference between study and control groups three month post implementing self care guidance regarding bleeding from minor wounds with p-value 0.043, oral cavity with p-value 0.003, Epistaxis, Menorrhagia, Cutaneous and Post-partum hemorrhage, and cavity with p-value

0.000.

Table (5) Reveals Comparison between studied groups related to patients' ISTH-SSC Bleeding Assessment pre , post one and three months post implementing self care guidance Results revealed that, there was that there is no statistical difference between pre-study and pre-control groups regarding patients' ISTH-SSC Bleeding Assessment , while there is highly statistical difference between post-study and post-control groups regarding patients' ISTH-SSC Bleeding Assessment with p-value 0.002   .

Table (6) Represented the comparison between studied groups related to patients' Life quality scores pre , post one and three months post implementing self care guidance, There is no statistical difference between pre-study and pre-control groups regarding patients' quality of Life scores, while there is highly statistical difference between post-study and post-control groups regarding patients' is very highly statistical difference between post-study and post-control groups regarding quality of Life scores of patients with p-value 0.000 .

Table (7) Illustrates comparison between studied groups related to patients' Life quality three month post implementing self care guidance , It revealed that   there is statistical difference between study and control groups three month post implementing self care guidance regarding quality of Life scores of patients   with   p-value   0.000   .

Figure (1) Illustrated Pearson correlation between study and control groups related to ILQI Scale and ISTH-SSC scale **,** shows that there is a very positive correlation between patients' ILQI Scale and ISTH-SSC scale. By improving the patients' life quality, the patient's   bleeding   improved.

Discussion:
Current study was conducted to evaluate the effect of self care guidance on quality of life of patients and bleeding incidence. The results of

the current study showed a significant improvement regarding patient's quality of life scores, bleeding incidence was reduced post implementation of self care guidance than control group. Highly statistical difference between study and control groups was present. Also the results demonstrate that the defined methodology is successful and that the set hypotheses were realized.

In relation of patient demographics; present study showed that vast majority of groups their ages ranged between 30 and 40 years old were female, this supported with Kubrusly et al., (2023) who founded the mean age of participants was (41 ± 16.1) years old, females were highly predominant in all age groups, with mean female/male ratio 4.7:1. Also Grimaldi-et al., (2016) noted that, the most observed ITP cases were during early and middle adulthood.

Several authors in contrast with those and concluded that the incidence rate of ITP increases with age Moulis et al., (2014) reported growing incidences after 60 years of age. From view of the predominance of female in this study and other studies, it is important to analyze the relationships between ITP, autoimmunity and female and reviewing the mechanism which responsible for increased women' immune activity. Andrès, (2016) explain that estrogens promote, able to influence the immune response via several mechanisms, but recently, they showed along with other sex hormones to exert their effects on immune effector cells. In researcher opinion females were more common exposed to many stressors in their life than male and this has negatively affect immune system and it is functions.

Regarding to laboratory test the majority of patients had abnormal laboratory test in study and control group before implementation of self-care guidance, there is highly statistical difference between study and control groups regarding Hb, RPCS and Platelet, ISTH-SSC Bleeding Assessment and bleeding incidence was reduced post implementation of self-care guidance. In researcher opinion it is due to self care guidance this enhance knowledge of patients

about the disease process, treatment and self care interventions to prevent complications.

In the same line (Chakrabarti et al., 2021) reported that patients predominantly reported bleeding, fatigue, and anxiety with unstable platelet count. In addition physician perspectives on the frequency and severity of the most common symptoms and their impact on patients' QoL.

Concerning quality of life the current findings illustrated improvement regarding life quality scores of patients after 3 months implementation of self-care guidance than before of it. There is very highly statistical difference between study and control groups with p-value 0.000. In this regard Maheri et al., (2016) mentioned that that proper nursing guidance can enhance patients' quality of life and noted increasing the mean score quality of life between study and control groups.

Galen et al., (2021) cleared that patient who receive education can be serves as a benchmark to promote awareness of unique challenges and support diagnosis and overall multidisciplinary management. They give a framework to provide patients with equitable care and enhance adherence to management which is expected to positively impact QoL.

In addition Azami et al., (2018) stated that the greater improvements in QoL in the study were suggested to available booklet, educational session and supervision via phone calls in the intervention group.

Maheri et al., (2016) found that nursing care can be enhance the quality of life However, which findings revealed that the mean level of hemoglobin from 8.57 ± 1.24 to 9.46 ± 1.24 was significantly increased in the experimental group.

Also Bussel& Cines, (2022) added that disease symptoms interfere with daily living activities, anxiety, fear, depression and embarrassment as a result of bruising and bleeding symptoms as epistaxis or oral blood blisters, also patients isolation, social inadequacy and frustration with inability to control their health. The side effects of treatments such as the use of corticosteroids, which exacerbate some of these associated

complications. Together, ITP has significant effect on patient's quality of life.

Furthermore Efficace et al., (2016) illustrated the negative impact of ITP on social role and activities, further studies support these findings. In group discussion, patients reported limitation in their social and leisure daily activities due to visible signs of bruising led to restricted social engagement.

Other studies with Tsukune et al., (2016) reported that fatigue score was found significantly worse in ITP patiens. Additionally Cooper et al., (2021) proven in their study that, Forty-three percent of patients reported that ITP affect their regular activities. Fifty-two percent of physicians mentioned that ITP had a negative impact on their patients' ability to done daily activities, half of patients who worked reported that ITP affects their work productivity and may completely prevented from working.

Likewise Sun & Luo, (2021) noted that the observation group had higher quality of life score after intervention when compared with control group. Nursing education plays an important role in clinical practices. Systematic nursing interventions are an important means to improve clinical efficacy and speed up patients' recovery, which may affect patients with bleeding, it has a positive effect on the quality of life, systematic nursing interventions such as health education, psychological care, medication, diet, infection control, and follow-up after discharge.

The current finding cleared that patient's bleeding incidence was reduced post implementation of self care guidance than control group. There were highly statistical differences between study and control groups with p. value 0.002. There was positive correlation between quality of life and bleeding incidence of study group pre and post self care guidance. By improving the patient's bleeding incidence, the patients' quality of life improved.

Sun & Luo, (2021) confirmed that health education is conducive to patients' awareness about diseases, and further promotes the patient's medication compliance,

thereby improving the patient's efficacy. The results of this study showed that the effectiveness rate of the observation group was higher than that of the control group. The quality of life score and the nursing satisfaction rate of the observation group after intervention was higher than that of the control group. Thus the effect of systematic nursing is remarkable, and can shorten the time bleeding and normalizing biochemical indicators.

In addition Chakrabarti et al., (2021) reported that based on the patients assessment, study highlights the need for education/training on all aspects of disease management, especially fatigue, anxiety, and general awareness among patients. Additionally Hurst et al., (2020) concluded that, assessment and improvement of HRQoL parameters require a multidimensional approach should be tailored for the patients.

Conclusion:
The implementation of self care guidance has a positive effect on patient quality of life and reduce bleeding incidence.

Recommendations:
- The self care guidance should serve as the basis for routine nursing care for patients with immune thrombocytopenia to improve their quality of life and reduce bleeding incidence.
- Inform the patient about the importance of regular follow up to , avoid complications that could lower their quality of life.
- Encourage more investigation or researches to pinpoint the obstacles leading to reduce quality of life and increase bleeding incidence.
- It is advised that the current study be repeated using a larger probability sample drawn from various geographic regions for the generalization of the findings.

Table (1): Distribution of studied groups related to sociodemographic data: (n = 30)

Items	Study		Control		T-test	P-value
	No. (n=30)	%	No. (n=30)	%		
Age:						
18 to < 30	8	26.7	9	30.0	0.342	0.561
30 to < 40	14	46.7	11	36.7		
40 to < 50	5	16.7	6	20.0		
50 to < 60	2	6.6	3	10.0		
60 to < 65	1	3.3	1	3.3		
Mean ± SD	**35.7 ± 10.1**		**36.2 ± 11.1**			
Range	**19 – 61**		**19 – 61**			
Gender:						
Male	10	33.3	9	30.0	0.297	0.588
Female	20	66.7	21	70.0		
Marital status:						
Single	3	10	2	6.7	0.001	0.971
Married	25	83.4	26	86.7		
Divorced	1	3.3	1	3.3		
Widow	1	3.3	1	3.3		
Level of education:						
Illiterate	1	3.3	3	10.0	0.015	0.903
Secondary	20	66.7	19	63.3		
High education	4	13.3	3	10.0		
Read and write	5	16.7	5	16.7		
Occupation:						
Office work	2	6.7	2	6.7	0.012	0.915
Farmer	6	20.0	5	16.7		
Professional	4	13.3	3	10.0		
Student	3	10.0	3	10.0		
Housewife	15	50	17	56.6		

T-test analysis was used to compare the mean difference between the two groups

Independent sample T-test   * Statistical significant differences (p < 0.05)

Table (2): Comparison between study and control group related to clinical base data and laboratory investigation (one month post implementing self care guidance):

Items	Post 1-month Study		Post 1-month Control		F-test	P-value
	No. (n=30)	%	No. (n=30)	%		
Hb:						
Normal (M: 13.5–18 g/Dl , F: 12–15 g/dL)	11	36.7	3	10.0	31.569	0.014**
Abnormal< or > (M: 13.5–18 g/Dl , F: 12–15 g/dL)	19	63.3	27	90.0		
WBC:						
Normal (4.0 to 10 k/mcL)	25	83.3	20	66.7	9.321	0.015*
Abnormal< or > (4.0 to 10 k/mcL)	5	16.7	10	33.3		
RPCS:						
Normal (3.93 to 5.69 million/mm3)	22	73.3	10	33.3	1.226	0.141
Abnormal< or > 3.93 to 5.69million/mm3	8	26.7	20	66.7		
Platelet:						
Normal (150,000 to 450,000/mcL)	21	70.0	7	23.3	1.329	0.002**
Abnormal < or > (150,000 to 450,000/mcL)	9	30.0	23	76.7		
Prothrombine time:						
Normal (25 to 30 seconds)	30	100.0	29	96.7	1.329	0.000***
Abnormal < or > (25 to 30 seconds)	-	-	1	3.3		
Prothrombine concentration:						
Normal (85%-100%)	30	100.0	28	93.3	9.609	0.155
Abnormal < or > (85%-100%)	-	-	2	6.7		
INR:						
Normal (0.8-1.1)	30	100.0	28	93.3	4.291	0.321
Abnormal < or > (0.8-1.1)	-	-	2	6.7		

Independent sample T-test .

* Statistical significant differences (p < 0.05) .

Table (3): Comparison between study and control group related to laboratory test (three month post implementing self care guidance)::

Items	Post 3-months Study		Post 3-months Control		F-test	P-value
	No. (n=30)	%	No. (n=30)	%		
Hb:						
Normal (M: 13.5–18 g/Dl , F: 12–15 g/dL)	24	80.0	4	13.3	1.914	0.002**
Abnormal< or > (M: 13.5–18 g/Dl , F: 12–15 g/dL)	6	20.0	26	86.7		
WBC:						
Normal (4.0 to 10 k/mcL)	30	100.0	30	100.0	-	-
Abnormal< or > (4.0 to 10 k/mcL)	-	-	-	-		
RPCS:						
Normal (3.93 to 5.69 million/mm3)	29	96.7	17	56.7	186.649	0.001**
Abnormal< or > 3.93 to 5.69million/mm3)	1	3.3	13	43.3		
Platelet:						
Normal (150,000 to 450,000/mcL)	27	90.0	14	46.7	173.235	0.002**
Abnormal < or > (150,000 to 450,000/mcL)	3	10.0	16	53.3		
Prothrombine time:						
Normal (25 to 30 seconds)	30	100.0	29	96.7	0.989	0.561
Abnormal < or > (25 to 30 seconds)	-	-	1	3.3		
Prothrombine concentration:						
Normal (85%-100%)	30	100.0	29	96.7	0.989	0.561
Abnormal < or > (85%-100%)	-	-	1	3.3		
INR:						
Normal (0.8-1.1)	30	100.0	29	96.7	0.989	0.561
Abnormal < or > (0.8-1.1)	-	-	1	3.3		

Independent sample T-test .
 * Statistical significant differences (p < 0.05)

Table (4): Comparison between study and control group related to ISTH-SSC Bleeding Assessment Tool (three month post implementing self care guidance):

Items	Post 3 months Study		Post 3 months Control		F-test	P-value
	No. (n=30)	%	No. (n=30)	%		
Epistaxis:						
Present	-	-	8	26.7	784.0	0.000***
Not present	30	100.0	22	73.3		
Cutaneous:						
Present	2	6.7	19	63.3	1973.0	0.000***
Not present	28	93.3	11	36.7		
Bleeding from minor wounds:						
Present	-	-	22	73.3	9.609	0.043*
Not present	30	100.0	8	26.7		
Oral cavity:						
Present	-	-	28	93.3	9.609	0.003**
Not present	30	100.0	2	6.7		
Present	-	-	-	-		
Not present	30	100.0	30	100.0		
Menorrhagia:	Female n=20		Female n=21		27.844	0.000***
Present	1	5.0	15	71.4		
Not present	19	95.0	6	28.6		
Post-partum hemorrhage:	Female n=20		Female n=21		1881.0	0.000***
Present	-	-	12	57.1		
Not present	20	100.0	9	42.9		
Present	-	-	-	-		
Not present	30	100.0	30	100.0		

* Statistical significant differences (p < 0.05)   Independent sample T-test

N.B :GI bleeding , Hematuria, Dental extraction , Surgery , Muscle hematomas , Hemarthrosis , CNS bleeding and Other bleedings not present in all patient in both study and control group .

Table (5): Comparison between studied groups related to patients' ISTH-SSC Bleeding Assessment (pre , post one and three months post implementing self care guidance):

Items	Study Groups (n=30)						Control Group (n=30)						P-value 1	P-value 2	P-value 3
	Pre		Post 1 month		Post 3 month		Pre		Post 1 month		Post 3 month				
	No	%	No	%	No	%	No	%	No	%	No	%			
Present	30	100.0	14	46.7	4	13.3	30	100.0	24	80.0	21	70.0	-	0.008*	0.002**
Not present	-	-	16	53.3	26	86.7	-	-	6	20.0	9	30.0			

Independent sample T-test .   * Statistical significant differences (p < 0.05).
P-value1: relation between pre study group & pre control group .
P-value2: relation between post 1-month study group & post 1-month control group .
P-value3: relation between post 3-month study group & post 3-month control group .

Table (6): Comparison between studied groups related to patients' Life quality scores (pre ,post one and three months post implementing self care guidance:

Items	Study Groups (n=30)						Control Group (n=30)						P-value 1	P-value 2	P-value 3
	Pre		Post 1 month		Post 3 month		Pre		Post 1 month		Post 3 month				
	No	%	No	%	No	%	No	%	No	%	No	%			
Impaired ≥ 20 − 29	3	10.0	17	56.7	26	86.6	4	13.3	3	10.0	2	6.7	0.430	0.001**	0.000***
Significantly impaired ≥ 30	27	90.0	13	43.3	4	13.4	26	86.7	27	90.0	28	93.3			

Independent sample T-test .   * Statistical significant differences (p < 0.05).
P-value1: relation between pre study group & pre control group .
P-value2: relation between post 1-month study group & post 1-month control group.
P-value3: relation between post 3-month study group & post 3-month control group .

Table (7): Comparison between studied groups related to patients' Life quality three month post implementing self care guidance:

How often ITP impacted on your life ?	Post 3 months Study (N=30)								Post 3 months Control (N=30)								F-test	P-value
	Never		Sometimes		More than half the time		All the time		Never		Sometimes		More than half the time		All the time			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
1- Working life or studies.	11	36.7	13	43.3	5	16.7	1	3.3	1	3.3	2	6.7	5	16.7	22	73.3	897.0	0.000 ***
2- Take time off work.	12	40.0	14	46.7	3	10.0	1	3.3	2	6.7	3	10.0	6	20.0	19	63.3	1.235	0.000 ***
3- Ability of concentrate.	13	43.3	15	50.0	2	6.7	0	0.0	2	6.7	2	6.7	5	16.7	21	70.0	8.325	0.000 ***
4- Social life	12	40.0	16	53.4	1	3.3	1	3.3	1	3.3	1	3.3	4	13.3	24	80.0	27.844	0.000 ***
5- Sex life	11	36.7	17	56.6	2	6.7	0	0.0	1	3.3	2	6.7	5	16.7	22	73.3	1425.0	0.000 ***
6- Energy level.	13	43.3	14	46.7	3	10.0	0	0.0	2	6.7	3	10.0	6	20.0	19	63.3	925.0	0.000 ***
7- Undertaking of daily tasks	14	46.7	13	43.3	2	6.7	1	3.3	1	3.3	2	6.7	5	16.7	22	73.3	23.254	0.000 ***
8- Support people close to you	12	40.0	14	46.6	2	6.7	2	6.7	2	6.7	1	3.3	4	13.3	23	76.7	1.369	0.000 ***
9- Hobbies.	13	43.4	13	43.3	3	10.0	1	3.3	1	3.3	2	6.7	3	10.0	24	80.0	256.0	0.000 ***
10- Normal capacity to exercise	10	33.3	14	46.7	4	13.3	2	6.7	1	3.3	3	10.0	6	20.0	20	66.7	1.987	0.000 ***

* Statistical significant differences (p < 0.05)

Independent sample T-test

Figure (1): Pearson correlation between study and control groups related to ILQI Scale and ISTH-SSC scale:
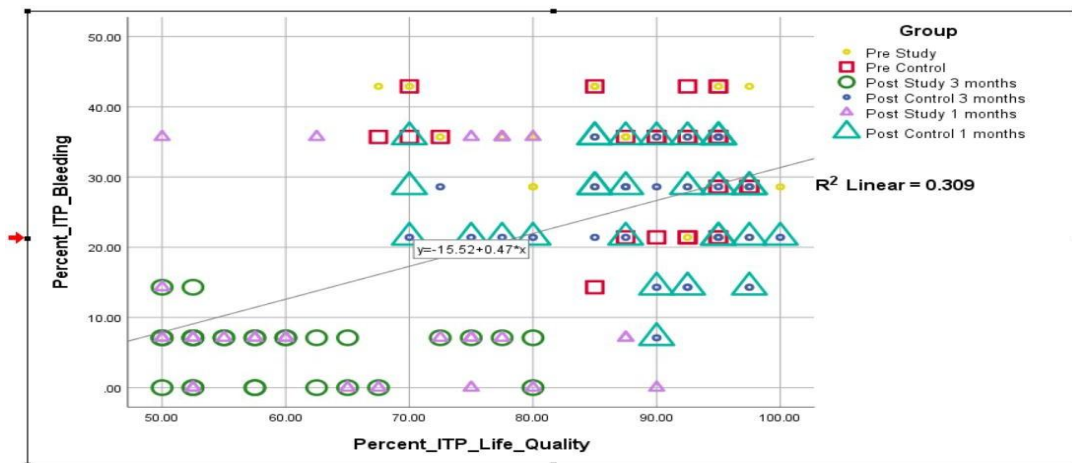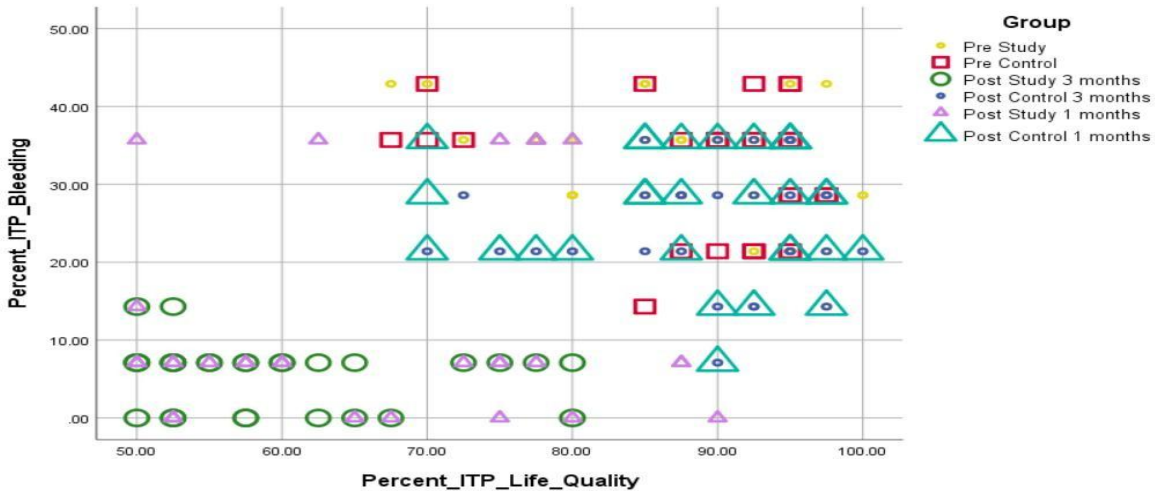
The correlation is significant at the 0.01 level.

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