

Effect of Educational Guidelines on Physical and Psychological Health Needs Management of Patients Undergoing Percutaneous Balloon Mitral Valvotomy

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Abstract: The purpose; This study aimed to evaluate the effect of educational guidelines on health needs management for patients undergoing percutaneous balloon mitral valvotomy (PBMV) Design: A quasi-experimental design was utilized in this study Setting: the study was conducted at Eldemrashed and Ain Shams Specialized Hospitals affiliated to Ain Shams university hospitals. Sample: A purposive sample of (80) adult patients included both genders undergoing PBMV, from the above mentioned settings. Tools: four tools were regarding PBMV health needs management 1) Patients' interviewing questionnaire (pre / post /follow-up tests) 2). An observation checklist (pre / post tests/ follow-up tests) to evaluate studied patients' practices in relation to PBMV health needs management. 3) Hamilton Anxiety Rating Scale (pre / post tests) to assess anxiety level. 4) Numerical pain scale (pre / post tests/ follow-up tests) to assess pain severity level. Results: most of studied patients were males 55.0 % with the age above 35 years and married. There were a high statistical significant differences as regards to Physical, psychological, social, and spiritual health needs management post educational guidelines for PBMV 16.9, 54.6,11.0, 31.5 respectively. Concerning pain level and anxiety there were an improvement post educational guidelines 39.8 ± 22.6 , 45.0 ± 28.3 respectively. Conclusion: On light of the present study results, the educational guidelines had a positive effect on health needs (physical, social, psychological, spiritual and educational) management for patients undergoing percutaneous balloon mitral valvotomy (PBMV). In addition, significant reduction was observed in post and follow – up tests regarding anxiety and pain levels. Recommendations: Further studies should be carried out on a large number of patients with percutaneous balloon mitral valvotomy (PBMV) for evidence of the results and generalization.

Keywords: Percutaneous Balloon Mitral Valvotomy (PBMV), Educational guidelines.

1. INTRODUCTION

Mitral stenosis is an obstruction of blood flowing from the left atrium into the left ventricle caused by rheumatic endocarditis. Eventually. It is a progressive disease consisting of a slow, stable course in the early years followed by an accelerated course later in life. Once symptoms develop, it is almost a decade before they become disabling (Libby *et al.*, 2016 and Chambers & Bridgewater, 2013) .

In the early 1980s surgery was the only possible treatment for severe valvular stenosis, then a percutaneous balloon valvuloplasty appeared as a new alternative to valve replacement. Inoue in 1982 was the first to perform this procedure. The good results obtained with the technique have led to its increasing worldwide use and its position as the second most important procedure in the field of intervention (Song *et al.*, 2015 & Ramin, 2014).

Percutaneous Balloon Mitral valvotomy (PBMV) is the treatment of choice for symptomatic mitral valve stenosis and recommended for older adults with surgical risks. This technique enlarges the orifice of a heart valve that has been narrowed by a congenital defect, calcification, rheumatic fever, or aging. Moreover, as a “bridge to surgery” when heart function is severely compromised. The PBMV is considered as an invasive technique which performed in cardiac catheterization laboratory under either general or local anesthesia. A balloon catheter is inserted into the femoral vein or artery, then advanced into the heart and positioned with the balloon straddling the stenotic valve guided by fluoroscopy (Mick et al., 2015, Rakes & John, 2011 and Rifaie et al., 2009).

The prevalence of rheumatic disease is higher in developing nations than in the United States. In India, for example, the prevalence is approximately 100-150 cases per 100,000 and in Africa the prevalence is 35 cases per 100,000 (Lu et al., 2016 and Helen & John, 2015). In an Egyptian study, the prevalence of rheumatic heart disease (RHD) was 3.4/1000. Approximately 20 million cases of rheumatic fever occur in third world countries annually, with a correspondingly high incidence of advanced mitral stenosis later in life. A genetic predisposition to develop RHD appears to be important in Egypt (Omar et al., 2011 & Rashed, 2010).

The needs were defined as ‘the requirements of individuals to enable them to achieve, maintain or restore an acceptable level of social independence or quality of life. Health is defined as a “state of complete physical, mental and social wellbeing not merely absence of the disease or infirmity”. This definition indicates that it is not only the physical needs of ill patients that need to be addressed but also their psychological, social, spiritual, and environmental needs (Kathryn & Michaelene, 2015 and WHO, 2009).

The health needs include: physical such as: daily living activities, physical preparation, investigations and treatment, post-procedural pain management, control of nausea and vomiting, postoperative diet, complications management, procedural access site care and self-care post discharge. Psychological such as: reducing anxiety from pain and complications added to emotional support. Social such as: patient's social activities, work, driving and social support. Spiritual such as: relation with God and motivation. Educational such as: information about PBMV procedure and self – care practices (Allen et al., 2013 and Lewis et al., 2011).

Significance of the study:

Patients with mitral valve disease need an educational guideline about (PBMV) before and after the procedure. Educational guidelines can help them to prevent complications, carry out prescribed therapy and solve their problems. It can also prevent crisis situations and reduce the potential for re-hospitalization. Patients should receive effective discharge instructions will be prepared for transition of care from hospital to home. (Zaki et al., 2014 and Potter & Perry, 2011). Furthermore, results of this study could be helpful for health professionals specially nurses in planning and implementing care for such group of patients in the future. Best practices guidelines are not available for nurses working in Cardiology Departments. So, the current guidelines were developed for nurses to update and upgrade their knowledge and skills and to be reference guide whenever needed, also, it should be utilized and integrated through educational modalities, in order to assist nurses to be competent in delivering care for such patients and a consequent improvement in post session's outcomes is achieved, this best practices' guideline.

Aim of the Study:

The current study aimed to evaluate the effect of educational guidelines on physical and psychological functioning among patients undergoing percutaneous balloon mitral valvotomy.

This aim has been achieved through the followings:

- 1- Assess the knowledge of patients regarding PBMV
- 2- Assess patients' health needs management.
3. Assess patients' practices regarding PBMV health needs management,
- 3- Develop, implement and evaluate the effectiveness of educational guidelines on health needs management of patients undergoing PBMV.

Hypothesis:

In order to achieve the aim of this study, it was hypothesized that, the implementation of an educational guidelines will have a positive significant effect educational guidelines on health needs management, for patients undergoing percutaneous balloon mitral valvotomy.

Operational definitions:

- Health needs management means the care needed for many physical, psychological , and social needs.
- Educational guidelines: means theoretical and practical sessions based on their health needs for patients regarding PBMV.

2. SUBJECTS AND METHODS

Research design:

A quasi-experimental design was utilized to conduct this study

Setting:

The present study was conducted in the Cardiology Departments at Eldemrdash and Ain Shams Specialized Hospitals affiliated to Ain Shams university hospitals.

Subjects:

A purposive sample of (80) adult patients undergoing PBMV from both genders were included in the study. They were selected according to statistical and power analysis in the department within the year 2015 in the Cardiology Departments at Eldemrdash and Ain Shams Specialized Hospitals. They were recruited according to the following criteria.

Inclusion criteria:

Conscious adult patients with mitral stenosis undergoing PBMV were taken with no co-morbid conditions not exposed to such educational training and willing to participate in this research willing to participate in this study.

Tools of data collection:
I- Patients` interviewing questionnaire (pre / post tests).

It was designed by the researchers in light of the relevant and related literatures and written in simple Arabic language. Data obtained were related to:

A) Demographic characteristics of the patients:

characteristics of the studied Patients which included: age, gender, level of education, marital status, occupation, income and residence.

B) Patients' clinical data:

It was used to assess data using Patients' medical records to identify past, present medical history, diagnosis, investigations and treatment.

C) Patients` needs assessment sheet included:

- **Physical needs** such as (resuming activities of daily living, follow prescribed diet, perform exercises, maintain Hygienic measures, sufficient sleeping hours, and relive fatigue).
- **Psychological needs** such as (reducing anxiety, sense of safety, coping, fear of complications and fear of loneliness).
- **Social needs** such as (patients' social support, recreation activities, sexual change, work adjustment, need for assistance, financial burden and feeling of usefulness).
- **Spiritual needs** such as (satisfaction improvement, inner peace sensation, future positive vision and increase spiritual practices).

D) Patients' knowledge assessment form:

It was derived from reviewing relevant and recent literatures (fawzy 2010 & aslanabad, golmohammadi, sohrabi, and ,kazemi ,2011). It was used to assess patient knowledge regarding PBMV (definition / causes of mitral stenosis, manifestations, treatment, advantages of the procedure) health education regarding psychological & social support and discharge instructions e.g.: Wound care, infection control, diet, follow up, drugs, investigations and daily activities.

Scoring system:

One point was scored for each correct answer and zero for the incorrect ones. The points were summed and converted into a percentage scoring, the total scoring system was classified as, satisfactory level of knowledge ($\geq 70\%$), and unsatisfactory level of knowledge ($<70\%$).

II - An observation checklist (pre / post tests and follow-up).

It was adopted from (Smeltzer et al. (2010), Lewis et al. (2011), Janice & Herry (2011), Potter & Perry (2011) and it developed and filled by the researchers to evaluate studied patients' practices in relation to PBMV health needs management (wound care, hygienic measures, ambulation, deep breathing, coughing and extremity exercises in addition to psychological and social support).

Scoring system:

A correct practice had (1) score, while the incorrect (zero). The total was either inadequately done (less than 80%) or adequately done (80% and more).

III- Hamilton Anxiety Rating Scale;

It was developed by Hamilton (1959) and modified by the researchers. This scale formed of thirteen variables: anxious mood, tension, insomnia, cognitive changes, depression, somatic(sensory), cardiovascular, respiration, gastrointestinal, genitourinary, autonomic symptoms, somatic (muscular) and the behavior at the interview. Testing reliability of the scale items was done using alpha cronbach test = 0.83.

Scoring system:

Answers were (0-3) scores and total score ranged from 0-39, the following categorization were adapted: no anxiety (zero), mild anxiety (0 - less than 23), moderate anxiety (23 - less than 29) and severe anxiety (29 - 39).

IV- Numerical pain scale:

It was developed by *Compbell (1995)* to measure pain severity. It was consisted of a line divided by numbered points from (0-10). Patients' answers were sorted as follows: no pain (zero), mild pain (0 - less than 4), moderate pain (4-less than 7) and severe pain (7 - 10).

Content validity:

It was assured by a group of experts from Cardiology and Medical– Surgical Nursing. Their opinions were collected as regards to tools format layout, consistency and scoring system. Tools` contents were tested regarding to the knowledge accuracy, relevance and competence.

Research implementation**Administrative design:**

The necessary official approvals were obtained from the administrators of the Cardiology Departments at Eldemrdash and Ain Shams Specialized Hospitals Letters of request were issued to them from the Faculty of Nursing at Ain Shams University explaining aim of the study and its expected outcomes.

Ethical Issues:

Before the initial interview, an oral consent was secured from each subject after being informed about the nature, purpose and benefits of the study. Patients were also informed that participation is voluntary and about their right to withdraw at

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any time without giving reasons. Confidentiality of any obtained information was ensuring through coding of all data. The researchers reassured patients that the data would be used only for the research purpose.

Pilot study:

A pilot trial was conducted on 10% of the total study subjects to test the clarity and practicability of the tools, in addition to sample and settings. Pilot sample were later included in the study as there were no radical modifications in the tools.

Fieldwork:

Procedure:

To carry out the study, the necessary approval was obtained from the director of pre mentioned setting. The aim of the study and the procedures were explained to patients to obtain their cooperation for data collection. The study was implemented during the period from January 2015 to July 2015. Patients were recruited according to the eligibility criteria. The researchers interviewed each patient individually, explained to him/her the purpose and procedures of the study. Those who agreed were interviewed using the data collection tools. The data were collected within 3 days/week at morning and afternoon shift before the procedure technique, on the same day of diagnosis when the patients came to the out patient's clinics. Filling in the tools was done by the researchers according to the patients' understanding and health condition. The educational guidelines were designed based on analysis of assessment of the health needs of the studied patients in pre assessment by using the pre constructed tools. The content was written in simple Arabic language and consistent with the related literatures. Moreover, met patients' level of understanding. The educational guidelines were presented in theoretical and practical sessions. Samples were divided into small groups including 5 – 6 patients and repeated sessions included all patients, each group obtained 4 sessions (2 theories and 2 practices). In addition, each patient was guided by simple written instructions, and then orientation about objectives, contents and expected outcomes was done.

- The theoretical part was conducted through lectures and group discussions, using data show and poster as a media. It was taken in 2 sessions (each session for 45 minutes) and cover the following items: wound care, signs and symptoms of wound infection, hygiene, medications, follow up visits, return to work, sexual condition, traveling preparations, diet regimen, religious practices, physical activities, follow – up visits, complications and unusual signs. Patients were handled the guidelines booklet, with some explanations from the researchers regarding its use. At the end of the sessions, its effectiveness was evaluated through a posttest and follow up after one months later, using the same data collection tools.

Statistical Design:

The Data entry and statistical analysis were done using SPSS 16.0 statistical software package. They were presented in tables and charts using numbers, percentages, means, standard deviations and t – test. Level of significance was threshold at 0.05.

3. RESULTS

Table (1): demographic characteristics of the studied patients (n=80)

Items	Patients (No)	%
Age / yrs.		
≤ 35 years	27	33.8
>35 years	53	66.2
Gender		
Male	44	55.0
Female	36	45.0
Marital status		
Single	20	25.0
Married	60	75.0
BMI		
Under weight (<18.5kg)	45	

Normal weight (18.5 – 25 kg)	12	56.2
Over weight (>25)	23	15.0 28.8
Residence		
Urban	45	56.2
Rural	35	43.8
Education		
Illiterate	12	15.0
Primary	28	35.0
Secondary	25	31.3
University	15	18.7
Job		
Not working	25	31.3
Working	55	68.7

Table (1) shows demographic characteristics of the studied patients that. 55.0% were males, 75.0 % married, 68.7% working and 66.2% within the age above 35 years. As regards to educational levels, about one third of them had primary and secondary school (35.0 & 31.3 respectively). Concerning BMI and residence, 56.2 % of them were underweight and from urban area.

Table (2): Presentation of studied patients` physical health needs management pre/post and Follow- up guidelines (n=80)

Items	Patients		
	Pre	Post	Follow- up
Implement physical activities	78 (97.5)	55 (68.8)	15(18.8)
Follow correct diet	75 (93.8)	45 (56.3)	10(12.5)
Perform exercises	69 (86.3)	50 (62.5)	17(21.3)
Maintain hygiene	60 (75.0)	23 (28.8)	5(6.3)
Enough sleeping times	70 (87.5)	43 (53.8)	15(18.8)
Relive fatigue	74 (92.5)	48 (60.0)	13(16.3)
Mean No ± SD	70.4 ± 6.9	43.8 ±12.3	12.4 ± 4.9
T – value	T1 between pre & post tests = 16.9*		
	T2 between post & follow- up tests = 21.3*		

*Significant at $p < 0.05$

Table (2) reveals a statistically significant difference between the studied patients` physical health needs management pre/post. ($t= 16.9, p < 0.05$), whereas mean of studied group in post test were lower than pre test (43.8 ± 12.3 & 70.4 ± 6.9 respectively). Moreover, significant difference was indicated in follow up tests compared to post tests ($t = 21.3$).

Table (3): Presentation of studied patients` psychological health needs management pre/post and Follow- up implementation of guidelines (n=80)

Items	Patients		
	Pre	Post	Follow- up
Anxiety reduction	78 (97.5)	22 (27.5)	5(6.3)
Increase sense of safety and security	75 (93.8)	25 (31.3)	3(3.8)
Health condition adjustment	69 (86.3)	37 (46.3)	18(22.5)
Fear from complications	76 (95.0)	24 (30.0)	6(7.5)
Decrease sense of loneliness	65 (81.3)	20 (25.0)	3(3.8)
Mean No ± SD	74.5 ± 3.9	27.0 ± 6.8	17.5 ± 11.9
T – value	T1 between pre & post tests = 54.6*		
	T2 between post & follow- up tests = 6.3*		

*Significant at $p < 0.05$

Table (3) shows a statistically significant difference between the studied patients` psychological health needs management pre/post guidelines, ($t= 54.6, p < 0.05$), whereas mean of studied group in post test was lower than pre test (27.0 ± 6.8 & 74.5 ± 3.9 respectively). Moreover, significant difference was noticed in follow up tests compared to post tests ($t= 6.3$).

Table (4): Presentation of studied patients` social health needs management pre/post follow-up implementation of guidelines (n=80)

Items	Patients		
	Pre	Post	Follow- up
Increase social support/ relations	55 (68.8)	30 (37.5)	6(7.5)
Increase recreational activities	46 (57.5)	25 (31.3)	10(12.5)
Sexual activity adjustment	78 (97.5)	63 (78.8)	15(18.8)
Work adjustment	59 (73.8)	44 (55.0)	17(21.3)
Assistance with traveling and transferring	63(78.8)	35 (43.8)	8(10.0)
Decrease financial burden	59 (73.8)	37 (46.3)	20(25.0)
Feeling of usefulness	45 (56.3)	36 (45.0)	5(6.3)
Mean No \pm SD	60.0 \pm 10.5	39.0 \pm 13.4	12.7 \pm 5.5
T – value	T1 between pre & post tests = 11.0*		
	T2 between post & follow- up tests = 16.4*		

*Significant at $p < 0.05$

Table (4) clarifies a statistically significant difference between the studied patients` social health needs management pre/post guidelines, ($t = 11.0, p < 0.05$), whereas mean of studied patients in post test was lower than pre test (39.0 ± 13.4 & 60.0 ± 10.5 respectively). Moreover, significant difference was observed in follow up tests compared to post tests ($t= 16.4$).

Table (5): Presentation of studied patients` spiritual health needs management and Follow- up implementation of guidelines(n=80)

Items	Patients		
	Pre	Post	Follow- up
Increase satisfaction	45(56.3)	27(33.8)	10(12.5)
Improve spiritual practices	38(47.5)	20 (25.0)	5(6.3)
Future positive vision	40(50.0)	25(31.3)	9(11.3)
Increase sense of inner peace	55(68.8)	27 (33.8)	8(10.0)
Mean No \pm SD	41.0\pm3.6	24.0\pm3.4	8.0\pm2.6
T – value	T1 between pre & post tests = 31.5*		
	T2 between post & follow- up tests = 33.3*		

*Significant at $p < 0.05$

Table (5) reveals a statistically significant difference between the studied patients` spiritual health needs management pre/post guidelines, ($t= 31.5, p < 0.05$), whereas mean of studied patients 'needs in post test was lower than pre test (24.0 ± 3.4 & 41.0 ± 3.6 respectively). Moreover, significant difference was noticed in follow up tests compared to post tests ($t= 33.3$).

Table (6): Presentation of studied patient`s educational health needs management pre/post and Follow-up implementation of guidelines(n=80)

Items	Patients		
	Pre	Post	Follow- up
Definition / causes of mitral stenosis	65 (81.3)	23 (28.8)	5(6.3)
Mitral stenosis manifestations	60 (75.0)	20 (25.0)	7(8.8)
Mitral stenosis treatment	74 (92.5)	28 (35.0)	5(6.3)

Advantages of PBMV	55 (68.8)	25 (31.3)	9(11.3)
Complications of PBMV	67 (83.8)	30 (37.5)	10(12.5)
Discharge management	73 (91.3)	23 (28.8)	5(6.3)
Mean No ± SD	64.2±7.2	25.2 ±3.9	7.2 ± 2.3
T – value	T1 between pre & post tests = 42.8*		
	T2 between post & follow- up tests = 36.0*		

*Significant at $p < 0.05$

Table (6) shows a statistically significant difference between the studied patients` educational health needs management pre/post guidelines, ($t=, p < 0.05$), whereas mean of studied patients `needs in post test was lower than pre test (25.2 ± 3.9 & 64.2 ± 7.2 respectively). Moreover, significant difference was observed in follow up tests compared to post tests ($t= 36.0$).

Table (7): The mean score of satisfactory practices among the studied patients with PBMV health needs management pre/post implementation of guidelines (n=80)

Items of practices	Patients			
	Pre		Post	
	No	%	No	%
Wound care	12	15.0	67	83.8
Infection control measures	18	22.5	74	92.5
Ambulation / transferring	28	35.0	62	77.4
Exercises (breathing / coughing)	12	15.0	66	82.5
Mean No ± SD	19.3 ± 8.1		67.7 ± 6.0	
T – value	T (between pre & post tests) = 43.2*			

Table (7): Presents patients` satisfactory practices regarding PBMV health needs management pre/post guidelines. Results showed significant improvement in post test compared to pre test (67.7 ± 6.0 & 19.3 ± 8.1 respectively), with t value = 43.2, $p < 0.05$.

Table (8): The mean score of anxiety and pain levels among the studied patients with PBMV pre/post and Follow-Up implementation of guidelines (n=80)

Pain Level	Patients		
	Pre	Post	Follow – Up
	%	%	
Mild	10.0	23.8	74.0
Moderate	22.5	55.8	20.8
Sever	67.5	20.4	5. 2
Mean % ± SD	16.3 ± 8.8	39.8 ± 22.6	47.4 ± 37.6
Anxiety Level			
Mild	7.0	25.0	83.0
Moderate	8.0	65.0	12.0
Sever	85.0	10.0	5.0
Mean % ± SD	7.5± 0.7	45.0 ± 28.3	47.5 ± 50.2

Table (8): Reveals studied patients` anxiety and pain levels pre/post guidelines. Concerning pain level, significant improvement was indicated in post test then follow – up test (Mean = 39.8 ± 22.6 & 47.4 ± 37.6 respectively) compared by pre test 16.3 ± 8.8 . As regards anxiety level, significant improvement was indicated in post test then follow – up test (45.0 ± 28.3 & 47.5 ± 50.2 respectively) compared by pre test 7.5 ± 0.7 .

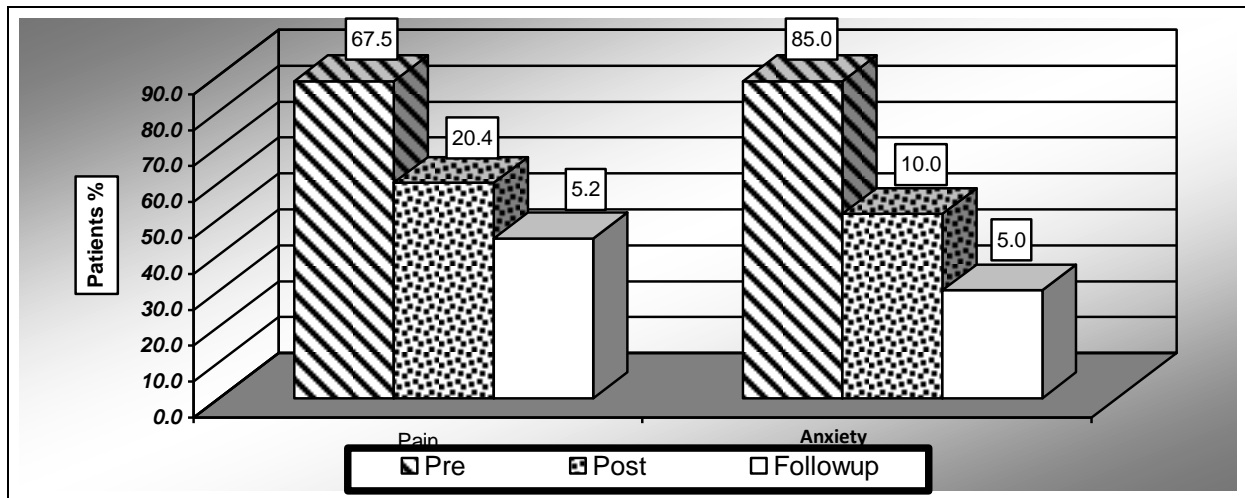


Fig (1): Distribution of studied patients according to the severity of anxiety and pain levels in pre/post and follow-up tests

Fig (1) shows that nearly two thirds (67.5%) of the studied patients had severe pain in pre- test, followed by one fifth (20.4%) in post test and 5.2 % only in follow – up test. Moreover, majority (85.0) of them had severe anxiety in pre- test, followed by 10.0% in post test and 5.0 % only in follow – up test.

4. DISCUSSION

Today, the treatment of patients with symptomatic mitral stenosis and PBMV has been established as an alternative to surgical mitral commissurotomy (**Libby et al., 2016 & Zaki et al. , 2014**). The present study aimed to evaluate the effect of educational guidelines on health needs management for patients undergoing percutaneous balloon mitral valvotomy. Concerning patients' characteristics, nearly two thirds of the studied patients had the age more than 35yrs. This finding was supported by **Khashaba et al. (2009)** who found that, the mean age of patients undergoing PBMV was 39 ± 38 years. As regards the gender, more than half of the studied patients were females. **Lu et al. (2016)** was supported for the previous result.

In the present study, patients` physical **health needs management** had a significant difference pre / post guideline. **Mick et al. (2015)** reported that majority of studied patients experience limitations of daily activities and stressed on the importance to relief fatigue. Moreover, full recovery of daily physical activity needed less than two weeks. Physical preparation for patients with PBMV represent an important form of care with a high quality. In addition, adequate diet, medications, health education and self-care activities are important and should be assessed to determine level of independence and decrease post-procedure complications (**Song et al. ,2015**)

Considering studied patients` psychological **health needs management**. There was a significant difference between pre / post guidelines. This finding could be due to the short stay of patients in the hospital on day of the procedure added to no psychological preparation by staff nurses. **Libby et al. (2016) & Khashaba et al. (2009)** stated that, all the studied patients were expressed fear of potential complications pre-procedure and after a successful procedure. Psychological preparation plays a vital role in the success of the procedure and the assessment is important to remove any worries for patients.

As regards studied patients` social **health needs management**. There was a significant difference between pre / post guidelines. **Rakes & John (2011)** reported that, patients with PBMV were expressed a need of enhancing and continuing the sexual potency during recovery. The relationships with patients will help to discuss any problems and using an efficient interaction with patients stayed for a short period in the hospital.

In relation to studied patients` spiritual **health needs management**. In Post test significant improvement was found. **Chambers & Bridgewater (2013)** recognized that majority of the study patients had low satisfaction and loss of expectation to the future.

Concerning studied patients` educational **health needs management**, significant improvement was indicated post guidelines. These findings mean that patients had a higher need before the procedure which may be due to, lack of nurses` time, added to dependence on the doctor to give instructions. **Janice & Herry (2011)** and **Akram et al. (2010)** clarified that, patients` families are now responsible for almost all post-procedure care, so written and verbal instructions before discharge are important. Moreover, teaching patients and families dispelling misconceptions and provide factual information.

In relation to studied patients` satisfactory practices regarding PBMV **health needs management**, significant improvement was observed in post test. **Kathryn & Michaelene (2015)** and **Allen et al. (2013)** recognized that all patients experienced a decrease in energy and activities during the first days following the procedure. This could be due to fear of them to engage in usual activities and occurrence of complications., added to inadequate pre procedure knowledge. **LeMone, et al. (2011)** stated that, learning some skills were important such as the ability to perform wound care, coughing and breathing exercises, ambulation and transferring.

In the current study regarding anxiety and pain assessment, more than two thirds of the studied patients had severe anxiety and pain in pre test. This result may be related to lack of psychological preparation and fear from procedural complications, added to disease manifestations for pain. **Douglas et al. (2015)** and **Omar et al. (2011)** stressed on value of the preparations preoperatively in reducing anxiety that results when patients are unable fully to comprehend the world around as regards the procedure. Moreover, after procedure pain was decreased as a result.

5. CONCLUSION

On the light of the present study results, it can be concluded that, the educational guidelines had statistical significant positive effect on health needs management (physical, social, psychological, spiritual and educational) for patients undergoing percutaneous balloon mitral valvotomy (PBMV). In addition, significant reduction was observed in post and follow – up tests regarding anxiety and pain levels among the studied patients.

6. RECOMMENDATIONS

- The importance of periodic an in services audiovisual materials training/education about percutaneous balloon mitral valvotomy, indications, complications and the instructions before, during and after procedure for such group of patients.
- Written a simplified comprehensive Arabic booklet about percutaneous balloon mitral valvotomy (PBMV) is necessary for such group of patients.
- Further studies should be carried out on a large number of such group of patients for evidence of the results and generalization.

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