Assessment of Knowledge & Performance of Nurses Working With Patient Undergoing Cardiac Catheterization In Ain Shams University Hospital

Thesis

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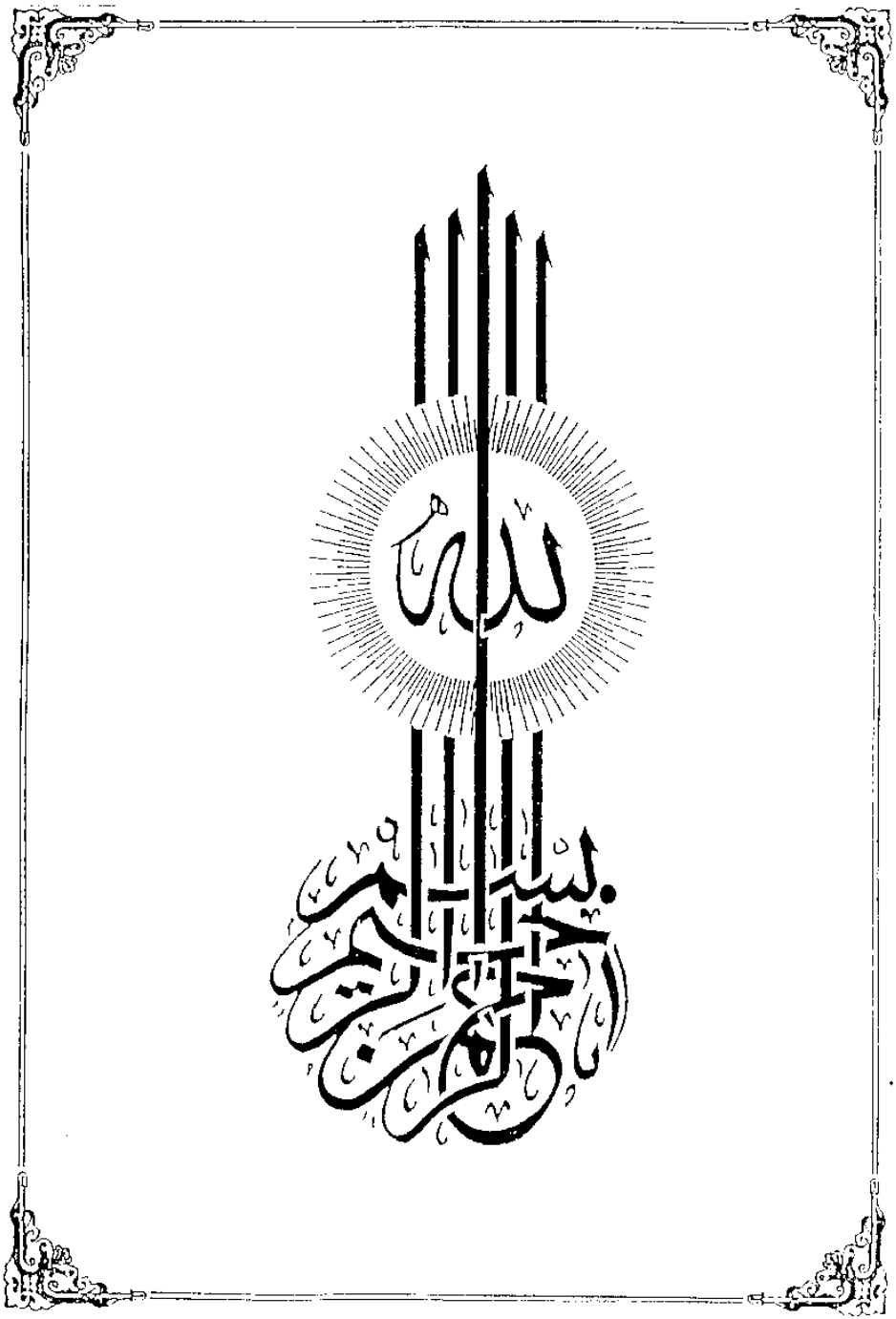

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List of Abbreviation

AV node	Atrio ventricular Node.
B.Ch.	Bachelory of Higher institute of nursing
CVP	Central venous pressure
ECG	Echocardiography
NPO	Nothing per mouth
PTCA	Percutaneous transluminal coronary angioplasty.

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Introduction

Cardiac catheterization and angiography remain the golden standard for assessment of both anatomy and physiology of the heart and vasculature. Cardiac catheterization was first applied to humans in ***1929*** by ***Werner Forssmann***, who, at age of 25 years, performed a right heart catheterization on himself. Forssmann's primary goal was to develop a therapeutic technique for the direct delivery of drugs into the heart. The potential of frossmann's technique as a diagnostic tool was appreciated by others. Today, cardiac catheterization and angiography are performed as a combined procedure for diagnostic purposes, therapeutic intervention, or both ***(Willson, 1991)***.

The nurse's role for the patient with cardiac catheterization and angiography is of great importance to clarify for the patient what is going on and the steps of the procedures. She can also help to identify the early detection of complication if any undesirable symptoms are liable to happen during the course. This can be achieved by assessment, nursing care, and following the standards of nursing process ***(Caine, 1987)***.

Nursing practice is actualized through a problem-solving approach known as the nursing process, which involves assessment, diagnosis, planning, implementation and evaluation, to perceive actual or potential physical or psychological problems that may be episodic, primary, and/or acute ***(Wright, 1988)***.

Aim of The Study

To assess the nurse's knowledge and performance regarding the care of patient undergoing cardiac catheterization, before, during and after the procedure.

Review Of Literature

Anatomy of The Heart

Sokolow et al., (1990) said that the normal heart lies within its pericardial sac in the middle of thorax slightly to the left of midline. The low-pressure right atrium and right ventricle occupy the anterior portion of the heart and the higher-pressure left ventricle and atrium lie posteriorly. The apex of the heart rests on the upper surface of the diaphragm, which lies close to the posterior and inferior surface of the heart.

They also added that the great vessels, the main pulmonary artery runs upward and to the left in front of the aorta and leave the pericardial sac before dividing into its right and left branches. The left pulmonary artery continues to arch backward in the same line as the main trunk, while the right branch turns laterally behind the ascending aorta and the superior vena cava to reach the hilum of the right lung. The aorta arises deep within the heart, and its proximal portion is covered by the right atrial appendage. It runs upward beside the superior vena cava before giving of its first and largest branch, which shortly divide into right common carotid and right subclavian branch. The aortic arch pass backward and to the left, giving of it left common carotid and left subclavian branch before crossing left pulmonary artery.

Wilson (1981) and ***Winwood et al., (1985)*** reported that; the heart is divided into right and left sides by a partition of muscular tissue and endocardium known as the septum. After birth, blood cannot pass directly

from the left to the right side of the heart or vice versa. Each side is divided into an upper and lower chamber by a valve. The valves ensure that the blood flows in one direction only: from the upper chamber or atrium to the lower chamber or ventricle. The heart has four chambers; right and left atria, right and left ventricle. The valve separating the right atrium from the right ventricle is known as right atrioventricular valve (Tricuspid) and is made up of three flaps or cusps. The valve separating the left atrium from the left ventricle is called the left arterioventricular valve (mitral valve) and is composed of two flaps or cusps.

The valves between the atria and the ventricles open and close as a result of changes in the pressure of blood within the chambers. The pressure in the ventricles rises higher than that in the atria backward flow of blood is prevented from opening upward by tendinous cords which extend from the inferior surface of the valve cups to the walls of the ventricles ***(Wilson, 1981)***.

The coronary arteries are more variable in pattern than any other part of the cardiac anatomy. The two main coronary arteries - left and right - arise from the right and left aortic sinuses within the pockets of the aortic valve cusps. Either vessel may predominate and supply the posteroinferior portion of the heart. In 30% of persons the left coronary artery is the smaller of the two. The left coronary artery is likely to be dominant in patients with congenital aortic stenosis or bicuspid aortic valve. The left coronary artery runs behind the main pulmonary artery as a

short main stem about 1 or 2 cm long before dividing into an anterior and a circumflex branch. The anterior branch usually has a descending branch that follow the interventricular groove. The circumflex branch follow the atrio-ventricular groove, curving around to the posterior surface of the heart ***(Sokolow et al., 1990)***.

In addition to the area between these two vessels, each of which is defined by a course within a groove is supplied by branches from one artery or the other. The left coronary artery usually consists of 3 branches, with the mid branch arising from one of the more readily definable arteries. The circumflex branch is larger in persons with a dominant left coronary pattern. In this case, the vessel may run as far as the crux of the heart and even give off the posterior descending branch, which runs in the posterior interventricular groove ***(Sokolow et al., 1990)***.

Hurst et al., (1990) stated that, the left anterior descending coronary artery supplies about 40 percent of the heart, including the anterior wall of the left ventricle and more than half of the interventricular septum. The left circumflex coronary artery supplies the lateral wall and a variable amount of the posterior left ventricle, up to half of the interventricular septum and a variable amount of the posterior left ventricle wall. The AV node and sinus node are supplied by the right coronary artery most of the time, but the main portion of the conduction system, including the bundle branches which course near the surface of the anterior interventricular septum, is supplied by the left anterior descending

coronary artery. The anterior papillary muscle gets its blood supply from the left anterior descending and left circumflex coronary artery, and blood supply of the posterior papillary muscle is from the right coronary artery in most instances.