Development of Psychophysiological Wellbeing Assessment Tool (PWAT) Based on Roys Adaptation Model: Avalidity And Reliability Study

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Abstract

Breast cancer is a major health issue among women that instills feeling of dread and fear in them. When a woman suffers from this dreadful sickness she will definitely have her physiological and psychological status disturbed due to the worry of loss of her breast, chemotherapy, radiation therapy or any other cumbersome treatment and its complications. It is the time when a nurse can assess her disturbed psychophysiological wellbeing. For this she needs some tool. So the objective of the present study was to develop the Psychophysiological Well-being Assessment Tool (PWAT) based on Roy's Adaptation Model and to check its validity and reliability. The tool was developed in two phases. In the first phase extensive review of literature was done and 72 items were pooled together to develop the   preliminary draft of the PWAT. In the second phase a Delphi panel was constituted. A Modified Delphi Technique was adopted to get the common consensus for the final PWAT. At every step of tool development item analysis was performed and experts' opinions were taken. Common consensus of experts was obtained on38 items of PWAT. The reliability of instrument was estimated by using split half Chronbachs alpha which was r=0.73. Statistically all the items of PWAT were found intercorrelated and were compatible to each other.The empowered nurses with PWAT will do quick assessment of psychophysiological wellbeing of post mastectomy breast cancer patients. Their timely intervention will help in decreasing re-hospitalizations of patients and help in cost containment for the health care industry, which is the essence of quality care management.

Keywords:_breast cancer, psychophysiological wellbeing, Roy's Adaptation Model, Psychophysiological Wellbeing Assessment Tool, quality care._

Introduction

Breast cancer among women is a major health issue both in developed and developing countries that instils feeling of dread and fear in many women. Not only it is a life threatening disease, but affects a part of the body that is imperative to women's sense of womanliness and feminity.[1]

Women suffering from breast cancer are ignorant about their problem in the initial stage. When they contact to health facility, disease progresses in advance stage and require immediate intervention of mastectomy and to treat or prevent reoccurrence they need treatment of radiotherapy or chemotherapy. During radiation therapy and chemotherapy they have many complications like extreme fatigue, pain in affected breast, constipation or diarrhoea and so on. At that time patients have disturbed psychophysiological wellbeing. They are unable to cope up the situation and may have maladaptive behavior. No tool is there to assess their maladaptive behavior.

So at that point the researcher decided to develop the Psychophysiological Well- being Assessment Tool (PWAT) based on RAM. According to RAM, coping processes consist of two: Regulator and Cognator Subsystem, adaptation occurs when the Cognator and Regulator subsystems are stimulated, resulting in behaviour changes measured in physiologic and psychological modes. The proper response to these subsystems to the external and internal stimuli results in adaptive behaviours. It promotes a client's adjustment to challenges related to health and illness.[2]

With the PWAT the researcher will be able to identify the maladaptive behavior in time and promote adaptation for individuals and groups in two adaptive modes of RAM i.e physiological mode and psychological mode encompassesself-concept mode, role function mode and interdependence mode thus contributing to health.[3]

This paper conceptualizes the development of Psychophysiological Wellbeing Assessment Tool (PWAT) based on RAM and to check its validity and reliability. It will serve as a vehicle to measure the psychophysiological wellbeing of post mastectomy breast cancer patients.

MATERIAL AND METHODS:

A Modified Delphi Technique was used to develop the PWAT based on Roy's Adaptation Model. For this purpose, a Delphi panel was constituted to get the common consensus to finalize PWAT. Item analysis was performed to assess the difficulty index of the items. Trial outs were also done to match the results of item analysis. The first draft of the PWAT had 72 items and common consensus of all the Delphi panel experts was obtained on 38 items. Final PWAT had 38 statements to assess the physiological and psychological wellbeing of post mastectomy breast cancer patients.

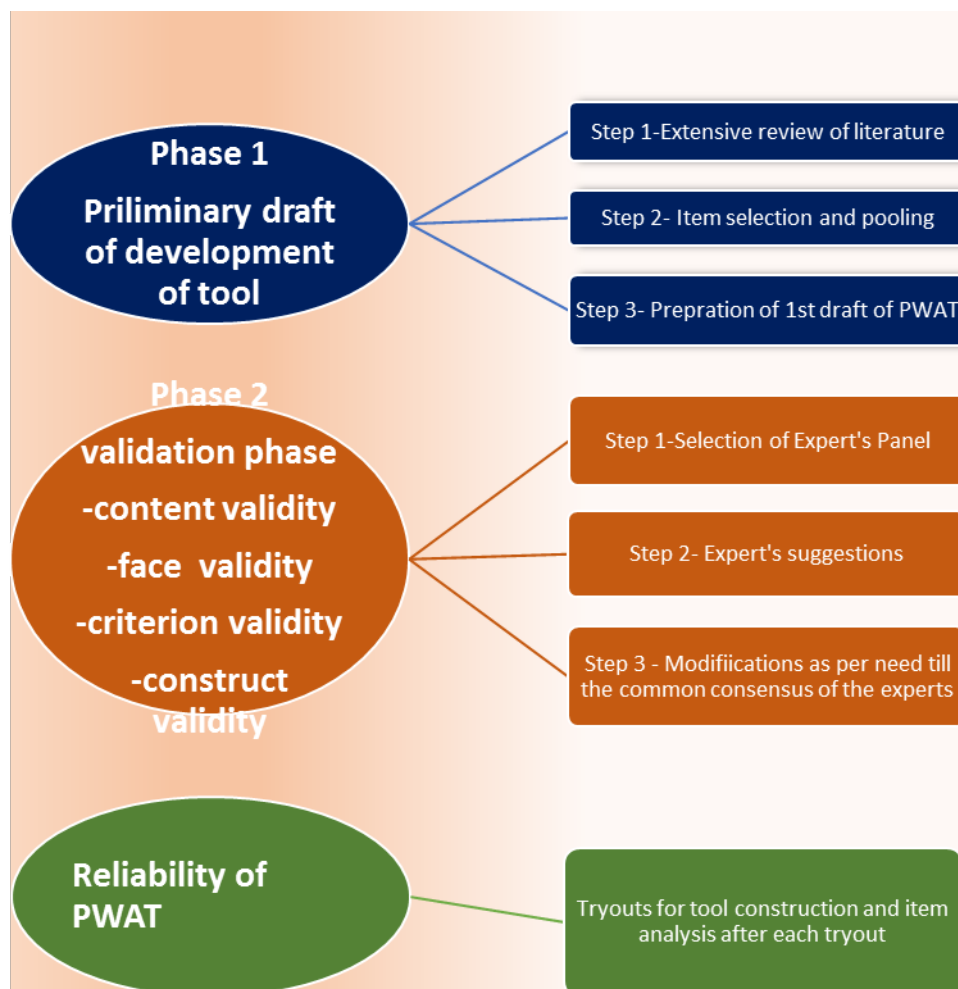Tool was prepared in two phases as follows:

FIG. 1 PHASES OF RESEARCH TOOL DEVELOPMENT

PHASES OF TOOL DEVELOPMENT

PHASE 1

PRELIMINARY PREPRATION OF PSYCHOPHYOLOGICAL WELL –BEING ASSESSMENT TOOL (PWAT)

Critical review of literature was done to develop the PWAT for post mastectomy breast cancer patients. Many studies which were already done by other researchers based on RAM were analyzed. Literature related to instrument construction and standardization was reviewed. Related content was analyzed and various related aspects were pooled together.Preliminary PWAT -1was prepared with 72 items. It was based on two modes of RAM (physiological mode and psychological mode) to get the detailed information about the psychophysiological well-being of breast cancer patients.

PHASE 2 VALIDATION PHASE

First try out was done of PWAT- I on 10 breast cancer post mastectomy patients in Radiotherapy Department, Rajindra Hospital, Patiala to check the difficulty indexof items and   reliability of PWAT-I.Item analysis was doneto assess the quality of the individual items and PWAT-I as a whole.Reliability statistics showed r=.941.The 5 items were expressed incompatible having mean value 2.5 or less than 2.5 (The optimal mean value for item statistics should be more than 2.5) had been excluded from the PWAT.PWAT-1 was prepared with 67 items.

Panel was selected comprising of 10 experts of different specialties of Nursing. The first draft of tool was circulated among 10experts via e-mails or by post. The Modified Delphi Technique was adopted to validate the 1st draft of PWAT. All the panelists were requested to give their valuable suggestions pertaining to the content, accuracy of information, the item order i.e. organization and sequence of the items.The suggestions given by panelists were incorporated, changes were also made in the sequence of items as advised by the experts. Many items were modified, clubbed and deleted. New items were addedto generate the second draft of the tool. After first Delphi survey, PWAT-II was prepared. There were total 52 items which were categorized under 2 subheadings: Physiological well-being (item no. 1-20) and Psychological wellbeing (item no. 21-52).

Same process of item analysis and Expert's opinion were repeated in 2nd try out and 3rd tryout.

In 2nd try out ten (10)items were expressed difficult and incompatible having mean 2.5 or less than 2.5(The optimal mean value for item statistics should be more than 2.5) were excluded from the tool. These were 03 items from physiological mode, 07 items from psychological mode. Reliability statistics of PWAT-II showed r=.78.PWAT-II was prepared with 42 items

In Expert's opinion two items were deleted. All the experts suggested to add one item "Do you have alopecia?" which was excluded in second round of item analysis. So this item was added in the psychophysiological well-being assessment tool. 41 items were finalized for PWAT-III which were categorized under 2 subheadings: Physiological wellbeing (1-18) and   psychological wellbeing (19-41).

In 3rd try-out of item analysis each item was expressed very good item except 03 items having zero variance so removed from the scale. The PWAT was prepared with 38 items. Reliability statistics of PWAT-III showed r=.73.PWAT was sent to experts for 3rd Delphi round. At this point, no suggestion was given by any panelist. There was no deletion, no addition and no modification. Researcher was successful to obtain common consensus from the panel and finally PWAT-III was finalized with 38 items which were categorized under 2 subheadings: Physiological wellbeing (1-16) and   psychological wellbeing (17-38).

In fourth try out, Item analysis was done to calculate the difficulty index of each item with in PWAT. At this stage all items were found very good items. No item was found difficult.

Finally the researcher was successful to develop the valid and reliable tool.
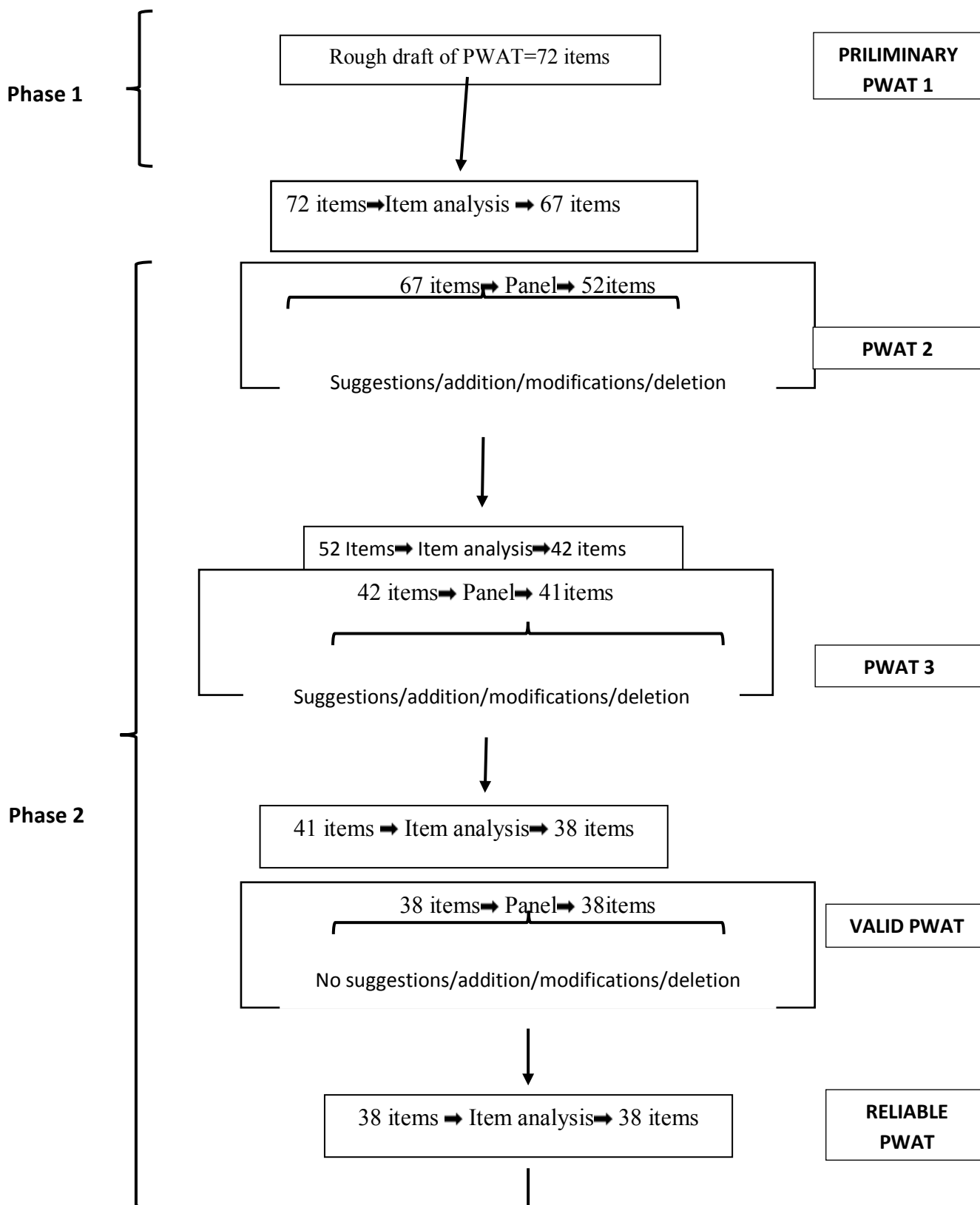
These steps can be presented as:-

FIG.2 STEPS OF PWAT DEVELOPMENT

RESULTS

Common consensus of all the Delphi panel experts was obtained on 38 items. Cronbachs alpha of PWAT was 0.73means tool is ideally reliable.

DISCUSSION

Psychophysiological wellbeing Assessment Tool (PWAT) development was a challenging task. It was based on two modes (physiological mode and psychological mode) of RAM which aims to measure the Psychophysiological wellbeing of post mastectomy breast cancer patients who are under the treatment of chemotherapy or radiotherapy or both. This PWAT has been revised by Delphi survey and item analysis again and again until the common consensus is achieved. So it has presented a new vision of Roy's Adaptation Model (RAM). It has advanced the work of previous researchers who utilized the available scales for data collection. Here the researcher has developed her own valid and reliable tool for data collection. Similar studies describing the development of a performance evaluation tool for registered nurses in a healthcare organization were presented by Springer et al. Hader et al. and O'Hara et al.[3] This PWAT will enable the nurses to collect data from the patients of medical and surgical departments in holistic manner and will help in planning the client centred interventions. By this nursing care will shift away from task oriented to patient oriented. Use of this PWAT will make a significant difference in nursing knowledge about patients. Whether the number of items in the tool (38) are less than the numbers in the other popular tools (greater than 50), Chronbachs alpha makes it a potentially useful evaluation tool. Each item has a mean value greater than 2.5 which indicates similarity of the items. The reliability of a tool may rise while increasing the number of items, but it gets difficult for the nurses to spend more time on each patient. A limitation that has been felt during the development of PWAT is that it is only utilized for data collection but at the spot it is not providing relief of complications of chemotherapy and radiotherapy. We hope that this study will lay the groundwork for future research in applying nursing models to practice. Suggestions for future studies include replicating this study using a larger random sample and establishing the reliability of the tools.

CONCLUSION

Finally the Psychophysiological Well-being Assessment Tool (PWAT) was developed with 38 items as a composite outcome of the physiological well-being and the psychological well-being. By the use of PWAT in nursing practice, nurses will be able to do holistic assessments of the patients available. By applying this PWAT based on RAM in practice nurses can enhance the professional accountability, define the parameters of nursing and increase the scientific body of knowledge of nursing profession.

ACHKNOWLEDGEMENT

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