


# Reliability for Pharmacy Projects and Research: A New Initiative in the Kingdom of Saudi Arabia

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## ABSTRACT

**Objectives:** To declare reliability for pharmacy projects and research used in the pharmacy practice in Saudi Arabia. **Methods:** It is a new initiative project reliability for pharmacy projects and research programs. The projects drove international reliability guidelines and the global business model, pharmacy project guidelines project management institution guidelines of a new project. The initial plan is written through project management professionals and consisted of several parts, including the initial phase, the planning phase, the execution phase and the monitoring and controlling phase. **Results:** The reliability of pharmacy projects and research services that defined vision, mission and goals. The services had multiple benefits, including clinical and economical, on the healthcare system, as described in the review-the continuation of the services assured by risk management elements description. Moreover, the monitoring and controlling of the projects as illustrated. The transition to operation project through the closing project stage shown in the analysis. **Conclusion:** The reliability of pharmacy projects and research services is a new initiative project in pharmacy practice. There various tools of authenticity can be started implemented during pharmacy data collection; it is highly recommended in the Kingdom of Saudi Arabia.

**Key words:** Reliability, Pharmacy, Projects, Research, Services, Initiative, Saudi Arabia.

## INTRODUCTION

The pharmacist had several activities and property had clinical and economic outcomes with decreased drug-related mobility and mortality. Several tools in the pharmaceutical care used to measure the results of those activities. However, those tools, if repeated with different places in the pharmacy unites or utilized by different with the same tools and the results will be the same or different. As a result, it needs a mechanism to ensure the results will not be modified and called reliability.<sup>1</sup> The reliability has used in several publications worldwide but not commonly in the local setting with such detail discussions.<sup>2-8</sup> The majority of the users to publications proposed in the daily pharmacy practice performance. The aim of the current project is to declare reliability the new project of new tools used in the pharmacy field and new initiatives in the Kingdom of Saudi Arabia.

## Method of the Project

It is a new initiative project drove by the pharmacy research program - the task force team of authors as pharmacy researcher and expert research pharmacists. The committee utilized and drove the reliability in the pharmacy research and new projects with an emphasis on surveys from the textbook and international literature reliability written by utilizing the international business model, pharmacy project guidelines project management institution guidelines of a new project.<sup>9-12</sup>

The reliability of pharmacy research or surveys depends on biostatistical and straightforward analysis tests for reliability. The project is written

through project management professionals and consisted of several parts, including the initial phase, the planning phase, the execution phase, the monitoring and controlling phase.

## Initiative Phase Assessment Needs

Various methods used to assure the results when repeated the methods with the specific number of sample sizes called reliability. The mainstream of this tool applied during pharmacy research. However, pharmacy practice services or projects did not implement. If the pharmacy project needs to assure the satisfaction of the services at ambulatory care units at one time and wish repeated another specific time, the results should not be changed. That gives us a clue of accurate survey distribution with the specific number of sample size.

## Market Analysis

The majority of the college of pharmacies and pharmaceutical companies implemented the reliability tools during their practice with the importance of pharmacy research. However, the healthcare institutions pharmacy not fully realized at their practice through pharmacy services or projects or research. Reliability tools might implement various methods and other procedures. Using more than one method is better to promise more reliability of the results.

## SWOT Analysis

There are several analyses of tools called the SWOT analysis, which means the strengths,

weaknesses and opportunities elements. The strength points of the project are to assure methods to give the same results, prevent mistakes and excellent high performance. On the other hand, the weak points are the limited number of pharmacists aware with it, need expert trained pharmacists. Also, the opportunity points are the quality pharmacy program implementation and elements of the accreditation procedures. Besides, the threat points are if the administration banner which is not available and if the pharmacy strategic plan which does not occur.

## Planning Phase

### Scope of the Project

The project or tools or skills was used for all pharmacy research and new projects. It included all pharmacy data and key performance indicators. Besides, it will consist of all pharmacy undergraduate and post-graduate training programs. With an emphasis on all the levels of pharmacy practice residency programs. It covers all pharmacy surveys that have been used for pharmacists and patients.

### Vision, Missions, Goals

The reliability defined as:

“scale or test is reliable to the extent that repeat measurements made by it under constant conditions will give the same results”.<sup>14</sup> The vision of the project is the best and high reliability of the pharmacy research and new projects, while the message is to deliver tools reliability and skills for pharmacists and pharmacy technicians for their research and projects. The aim of the project is to prevent any mistakes in pharmacy data sciences, to promise the reliability of pharmacy survey, to implement the validity for all pharmacy research and projects, to establish new pharmacy survey or projects with high reliability and avoid any unnecessary or useful pharmacy data sciences and related cost.

### Project Description

The survey should be revised by research team independently. Each member revised all survey content questions based on the updated literature and experience. Any violations had been sent to all research team for further discussion and agreements. The survey had been corrected and agreement from the research team. One of the team members transferred all surveys to the Arabic language and double-checked by all team members again for content and accurate translation.

## Internal Consistency Reliability

### Item-Item Correlation

The method was used to measure each question to another one, with high coloration results in more than 0.7, which is high internal consistency reliability survey.<sup>1,13</sup>

### Item-Total Correlation

The method to measure the total questions collocates with each question alone. The high results of more than 0.7, the high correlate internal consistency reliability of the survey.<sup>1,13</sup>

### Split Half Reliability (Gutmann's $\lambda_6$ )

The method used through the Statistical Package of Social Sciences (SPSS) and Jeffrey's Amazing Statistics Program (JASP) with the scale option and reliability section. All questions with scale or ordinal data need to be measured. The test used a split-half option. The SPSS or JASP will split the question into two half and measure the coloration of the two groups. The high results more than 0.9 of coloration indicates the high reliability with internal consistency.<sup>14-16</sup>

## McDonald's $\omega$ , Cronbach Alpha

The research team applied McDonald's  $\omega$  and Cronbach alpha for internal reliability by using SPSS and JASP. All questions with scale or ordinal data included in the analysis. The scale more 0.9; it will be excellent internal consistency, 0.7-0.9 mean good reliability, 0.3-0.6 indicate not acceptable reliability and the score less than 0.3 mean weak reliability.<sup>14,17,18</sup>

## Collinearity

The test was done through JASP with linear regression for collinearity diagnostics including Eigenvalue and condition index, the coefficient used with CI 95% tolerance and variance inflation factor, the model fit through ANOVA and autocorrelation with Durbin-Watson.<sup>19</sup>

## Plan Cost Management

In the current project, the management team should identify the financial budget-related issues, which includes the cost of training courses and the cost of the management team meeting. The budget should be supervised throughout the project.

## Executing Phase

### Management Team

The project should establish by a task force comprised of pharmacy supervisors, clinical pharmacists, pharmacy research representatives and pharmacy total quality management. The clinical and economical in the healthcare system should be determined with regular updating of reliability for pharmacy projects and research. The team should request from pharmaceutical companies to new projects monitored through the reliability of the tool.

## Education and Training

The current new project demands education and training for pharmacy staff, including a clinical pharmacist and pharmacy supervisor about the project and types of reliability tests - besides, education and training for healthcare providers about project reliability. The team management member should have an orientation about the project and any new pharmacy or healthcare staff join the institutions.

## Monitoring and Controlling Phase

### Project Total Quality Management

The total quantity management during current new project reliability for pharmacy projects and research is one of the vital tools to monitor the execution and impact assessment. There are several total quality tools used with this project and the balance scored cards was one of them. The tools monitor four-parts that including the customer, finance, internal process, education and innovation. An example of internal processes was the assessment of pharmacy and healthcare services of reliability for pharmacy projects and research. In the education and innovation types, the measures of clinical outcome of reliability for pharmacy projects and research, which could reproduce the education and competency of clinical pharmacists and pharmacy supervisors. The financial type the measurement of the economic impact of reliability for pharmacy projects and research. The customer types might measure the patients and healthcare providers, including the pharmacy staff of reliability for pharmacy projects and research satisfaction in the Kingdom of Saudi Arabia.

## Risk Management

The risk management had various types that are including budget risks, scope risks, schedule risks, personal risks, technical risks and quality risks. The project could be exposed to risks such as personnel, budget, technical and quality. The project may be had personal risks for an instant; there is not trained pharmacy staff or nor specialist clinical pharmacists or pharmacy supervisors. Another risk with the budget types,

for example, a shortage of specialist clinical pharmacists or pharmacy supervisor non-trained pharmacists. Also, the budget risks might expose to the projects, for instance, if there is not enough budget for education and training or update resources. The scope risk might expose to the current project, which probably expanded and included several concepts. On the other hand, the technical risk may expose that there is a computerized system during reliability for pharmacy projects and research. The new project might expose to quality risks related to non-available reliability for pharmacy projects and research measures or shortage of total quality management pharmacist.

### Closing of the Project

The reliability for pharmacy projects and research at various healthcare hospital and primary healthcare centers with different governmental and private sectors are highly suggested to prevent errors and mistakes related issues and avoid additional unnecessary of reliability for pharmacy projects and research cost on healthcare services in the Kingdom of Saudi Arabia. The project should continue at pharmacy research or clinical pharmacy development or pharmacy administration with the involvement of related committees. The education and training of reliability for pharmacy projects and research should be conducted frequently. Update and more information about the reliability of pharmacy projects and research are required in the future. The annual celebration of all clinical pharmacist and pharmacy supervisor with encouraging them is highly advised in Saudi Arabia.

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None.

### CONFLICT OF INTEREST

The authors declare no conflict of interest.

### ABBREVIATIONS

**KSA:** Kingdom of Saudi Arabia; **SWOT:** Strengths, Weaknesses, Opportunities and Threats; **ANOVA:** Analysis of Variance; **SPSS:** Statistical Package of Social Sciences; **JASP:** Jeffrey's Amazing Statistics Program.

### REFERENCES

1. Kumar R. Research Methodology a step-by-step guide for beginners. 3<sup>rd</sup> edition. SAGE Publications Ltd. 2011.
2. Awaisu A, Bakdach D, Elajez RH, *et al.* Hospital pharmacists' self-evaluation of their competence and confidence in conducting pharmacy practice research. Saudi Pharm J. 2015;23(3):257-65.
3. Carol A, Martha BIK. Pharmacists' views on involvement in pharmacy practice research: Strategies for facilitating participation. Pharm Pract. 2007;5(2):59-66.
4. Abubakar U, Sulaiman SAS, Usman MN, *et al.* Nigerian pharmacists' self-perceived competence and confidence to plan and conduct pharmacy practice research. Pharm Pract. 2018;16(1).
5. Kritikos VS, Carter S, Moles RJ, *et al.* Undergraduate pharmacy students' perceptions of research in general and attitudes towards pharmacy practice research. Int J Pharm Pract. 2013;21(3):192-201.
6. Fakeye TO, Adisa R, Olukotun RT, *et al.* Hospital and community pharmacists' perception of the scope, barriers and challenges of pharmacy practice-based research in Nigeria. Pharmacy Practice. 2017;15(1):881.
7. Bahmaid RA, Karim M, Al-Ghamdi N, *et al.* Impact of research educational intervention on knowledge, attitudes, perceptions and pharmacy practices towards evidence-based medicine among junior pharmacists. Cureus. 2018;10(6):1-18.
8. Ashri N, Al-Amro H, Hamadah L, *et al.* Dental and medical practitioners' awareness and attitude toward evidence-based practice in Riyadh, Saudi Arabia: A comparative study. Saudi J Dent Res. 2014;5(2):109-16.
9. McDonough R. Writing a Business Plan for a New Pharmacy Service. The Dynamics of Pharmaceutical Care: Enriching Patients' Health. 2010;23:1-12.
10. Harris IM, Baker E, Berry TM, *et al.* Developing a business-practice model for pharmacy services in ambulatory settings. Pharmacotherapy. 2008;28(2):7e-34e.
11. Sachdev G. Sustainable business models: Systematic approach toward successful ambulatory care pharmacy practice. Am J Heal Pharm. 2014;71(16):1366-74.
12. PMBOK Guide. A Guide to the Project Management Body of Knowledge. Sixth Edit. Project Management Institute, Inc. 2017.
13. Kimberlin CL, Winterstein AG. Validity and reliability of measurement instruments used in research. Am J Heal Pharm. 2008;65(23):2276-84.
14. Jain S, Dubey S. Designing and validation of questionnaire. Int Dent Med J Adv Res. 2016;2(1):1-3.
15. Nath S. Best split-half and maximum reliability. IOSR J Res Method Educ. 2013;3(1):1-8.
16. Hervás A, Guàrdia OJ, Peró CM, *et al.* A structural equation model for the analysis of factors associated with the choice of engineering degrees in a technical university. Abstr Appl Anal. 2013;7.
17. Viladrich C, Angulo-Brunet A, Doval E. A journey around alpha and omega to estimate internal consistency reliability. An Psicol. 2017;33(3):755-82.
18. Deng L, Chan W. Testing the Difference between reliability coefficients alpha and omega. Educ Psychol Meas. 2017;77(2):185-203.
19. Dormann CF, Elith J, Bacher S, *et al.* Collinearity: A review of methods to deal with it and a simulation study evaluating their performance. Ecography. 2013;36(1):27-46.