# Application of a quantitative tool

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Today, the demand for healthcare services is drastically up surging, and the trend is expected to continue in the future. Thus, this has increased the demand for analysis in healthcare and other industries. The serious financial hurdles experienced in most of the developed and developing countries across the world have forced the leaders to limit and reduce the budgets allocated in various departments and agencies. The tight budgets imply that the management teams must devise approaches, tools, or methods which will enable the organizations to use the limited resources efficiently (Marcikić et al., 2017). In a bid to make sure that there is efficient planning of various activities in healthcare firms through efficient use of the scarce resources, it is paramount to precisely examine the demand for medical services offered to the people during the initial planning stage. However, one of the major challenges experienced by various healthcare organizations is the randomness of the arrival of the patients and the mergency vehicles, particularly when they arrive without notifying the healthcare professionals. For instance, patients in need of emergency care often do not inform the hospitals, but rather the situation demands them to be attended to without informing the healthcare institutions. In this regard, one of the quantitative tools which can be used in various healthcare organizations which experience the challenge of randomness arrival of the patients is the correlation analysis statistical method which comprises Kendall's and Spearman's rank correlation test. The correlation analysis statistical method is a better quantitative tool to be used because it considers the stochastic nature of frequency and the duration of the healthcare intervention which in

return allows better utilization of the scarce resources (Bland & Altman, 2010).

The correlation analysis plays a critical role in examining the relationship between observed phenomena. During the analysis, extreme observations which considerably influence the reliability of the correlation test outcomes are often left out from the analysis. In order to determine the randomness of the patients' arrival for a medical check-up in a particular healthcare institution, the analyzing team examines patients' arrival patterns on a weekly and daily basis. For instance, when the team establishes a positive correlation about the current number of ambulance and/or the patient arrivals with the number of ambulances and/or patient arrivals a week earlier, it shows that the workload of the ambulance and/or patient care service offered to the people may be defined by the day of the week (Bland & Altman, 2010). In this regard, the analyzing team examines whether the frequency of the number of ambulances and/or patient arrivals on the course of the week are significantly different from weekends. In addition to identifying the weekly pattern, the correlation analysis statistical method can also be used to examine the existence of daily patterns about the ambulance and/or patient arrivals. The analyzing team may test the hypothesis that the intensity of demand for ambulance and/or patient care services is defined by the hour of the day. In a bid to provide an accurate conclusion on whether the number of patients and/or ambulance arrivals per hour is different on particular specific days of the week and determine whether it is possible to group days which have similar daily patterns of the demand for healthcare service, the analyzing teams may apply contingency tables. Moreover, the

team may use the correlation analysis statistical method to check whether the distribution of the demand for healthcare services such as ambulance and patient care services are different on individual days of the week. In cases where there is a disparity on individual days of the week, the analyzing team often examines whether there are days on which the disparity in the distribution is not significant by defining the groups of the days which have a similar daily pattern (Marcikić et al., 2017).

The emergency medical services in various healthcare institutions play a central role of improving the quality of the health services offered to the patients. The efficacy of the healthcare services provided to the people is an important part of an efficient healthcare system. However, the performance of such systems is solely depended on the operational success of emergency services in which the manpower, facilities, emergency vehicles such as ambulance, and supporting equipment act as the main resources. One of the main challenges experienced by various healthcare institutions is the randomness of the arrival of the patients for emergency check-up or treatment, particularly when they arrive without prior notifying the healthcare firms. In order to ensure that various activities in healthcare firms are planned effectively through efficient use of the limited resources, the analyzing team precisely examine the demand for the healthcare services offered to the people during the initial planning stage through the use of the correlation analysis statistical method. This analyzing method is one of the best quantitative tools which can be used in a healthcare set-up because it considers the stochastic nature of frequency and the duration of the medical intervention which in return allows better utilization of the scarce resources.

# References

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