Data source, sampling, and data analysis: The data used for the study were obtained from the SC Child Abuse Program (CAP) database. The study examined the monthly number of APS intakes accepted for assessment. Statistical forecasting using the fitted model was used to predict future APS intakes.

The ARIMA model was selected for the analysis due to its ability to handle non-stationary data through differencing. The ARIMA model can be expressed as ARIMA(p, d, q), where p is the order of autoregression, d is the degree of differencing, and q is the order of moving average. The selection of the appropriate ARIMA model was based on the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and the Mean Squared Error (MSE).

RESULTS

In 2016, 5 of 15 APS intakes for the 22 of agencies were categorized into intake hubs. As a result, an increase of 4.2% in monthly APS intakes observed in 2016, with a yearly percentage rate of 0.7% per 10,000, 2014 and 2015 and 1.5% per 10,000 in 2016 (Table 3).

The monthly APS intakes distribution for the period 2014 to 2017 is shown in Figure 1. The highest average number of APS intake reports was reported from June to August (median: June: 257.5, July: 287.5, August: 245.75). The impact of the intake hubs implementation variable was significant (coefficient $0.375$, p-value $<0.0001$).

The ARIMA model improved after adding an exogenous dummy variable that takes the value '0' before January 2015 and '1' after that. The impact of the intake hubs implementation variable is significant (coefficient $0.2616$, p-value $<0.0001$), indicating that current monthly APS intake reports depend on the intake hubs introduced during the study period.

The ARIMA model was used to predict future APS intakes. The goodness of fit was examined by means of the Akaike Information Criterion (AIC), (3) Schwartz Bayesian Criterion (SBC), and (4) Mean Square Error (MSE).

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REFERENCES

