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Chehbi Gamoura Chehbi

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REAL-TIME DATA ANALYTICS AND PREDICTION OF THE COVID-19 PANDEMIC

(PERIOD TO APRIL 13TH, 2020)

SAMIA CHEHBI GAMOURA

Humanis, EM Strasbourg, University of Strasbourg, Strasbourg, France

samia.gamoura@em-strasbourg.eu

Abstract

This brief paper is versioned 7 in a series of short papers that describe a set of descriptive and predictive analytics of the pandemic COVID-19 around the world. We exceptionally propose this new and uncommon way of publications because of the current emergency circumstances where Data are gathered and analyzed directly day by day. Because of the new behavior regarding the spread speed and the contagion features of this virus, we opted by comparative analytics based on demographic characteristics in localities and countries for prediction, without using historical data in epidemiology. The test proofs of our findings are done day by day with the real figures reported from the Data. To feed our models in algorithms, we refer to the reported cases from the Data of the World Health Organization (WHO). Because of the current circumstances of emergency, this paper is brief and will be succeeded with a series of versions until the end of the pandemic. The full paper will be published afterward with more details about the functions, the model, and the variables included in our algorithms.

List of our previous papers (preprints) in this special series about COVID-19

[1]	S. C. Gamoura, «Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to March 22th, 2020),» <i>Published on March 22, 2020 - DOI: https://doi.org/10.13140/RG.2.2.33995.13607</i>
[2]	S. C. Gamoura, «Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to March 26th, 2020),» <i>Published on March 26, 2020 - DOI: https://doi.org/10.13140/RG.2.2.12574.69444</i>
[3]	S. C. Gamoura, «Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to March 28th, 2020),» <i>Published on March 28, 2020 - DOI: https://doi.org/10.13140/RG.2.2.25996.46726</i>
[4]	S. C. Gamoura, «Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to April 2nd, 2020),» <i>Published on April 02, 2020 - DOI: https://doi.org/10.13140/RG.2.2.36777.13921</i>
[5]	S. C. Gamoura, «Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to April 4th, 2020),» <i>Published on April 04, 2020 - DOI: https://doi.org/10.13140/RG.2.2.16238.15686</i>
[6]	Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to April 10th, 2020). <i>Published on April 10, 2020 - DOI: https://doi.org/10.13140/RG.2.2.26379.03367</i>

Findings 1: Analytics, Contagion Factor, and Peak prediction with predicted total cases in Tunisia for next weak

Tunisia	
Actual population density	76
Actual Total tests	10 676,00
Actual Population	11 790 955,00
Actual Total death	28
Actual Rate of death	5,06%
Elder age rate	8,00%
Number of Tests in 1M population	905
Average Daily Tests	314
Max deaths predicted	44

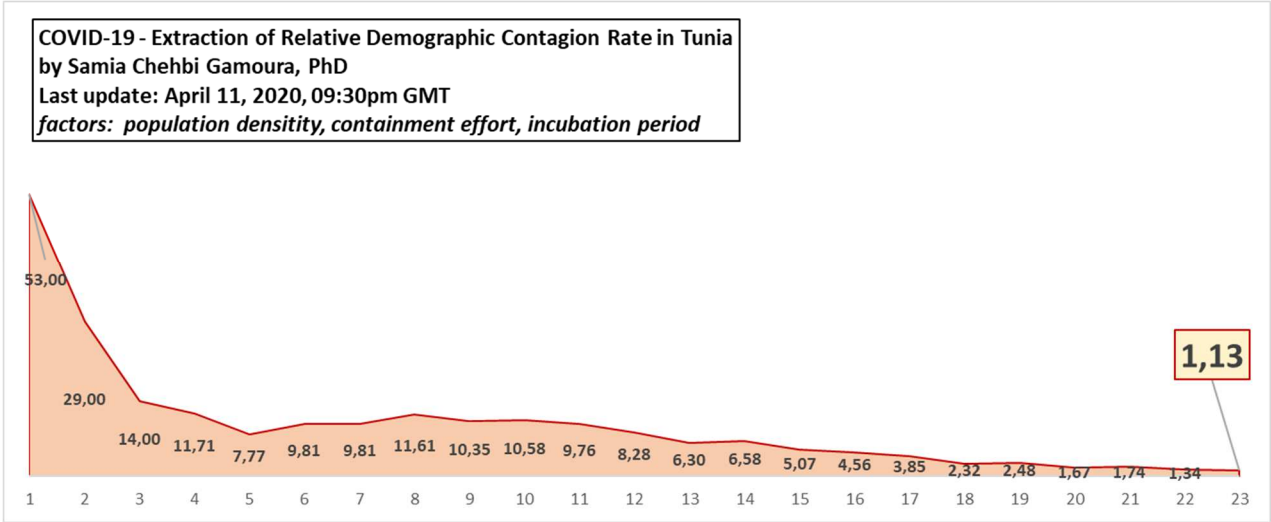


Figure 1. Extraction of our Relative Demographic Contagion in Tunisia

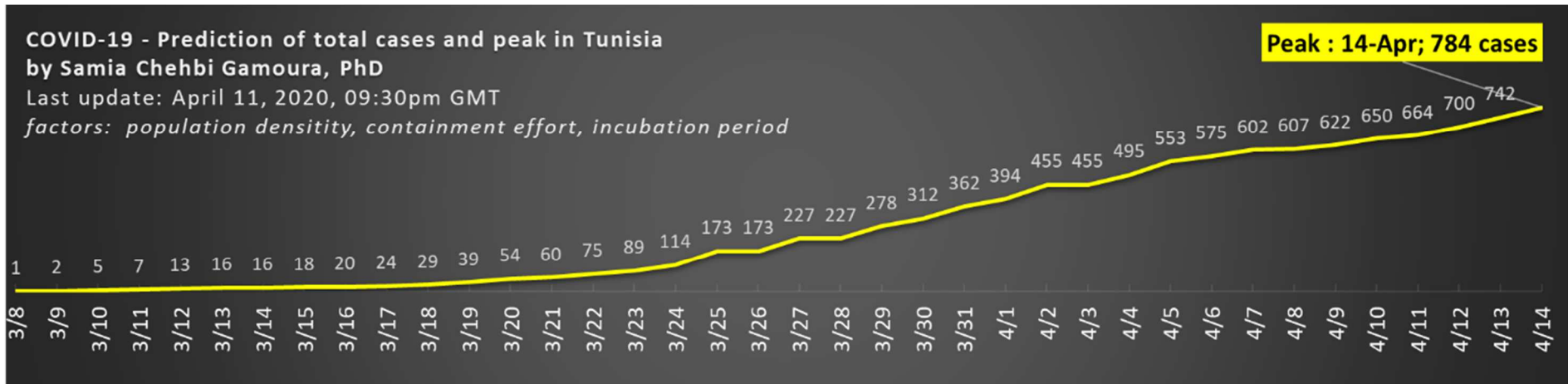


Figure 2. Prediction of peak and total cases in Tunisia for next days

Findings 2: Analytics, Contagion Factor, and Peak prediction with predicted total cases in Turkey for next week

Turkey Figures and Prediction	
Actual population density	76
Actual Total tests	376 100
Actual Population	81 257 239
Actual Total death	1 198
Actual Rate of death	2,30%
Elder age rate	7,79%
Number of Tests in 1M population	4 629
Average Daily Tests	11 753
Average daily New Cases	1 780

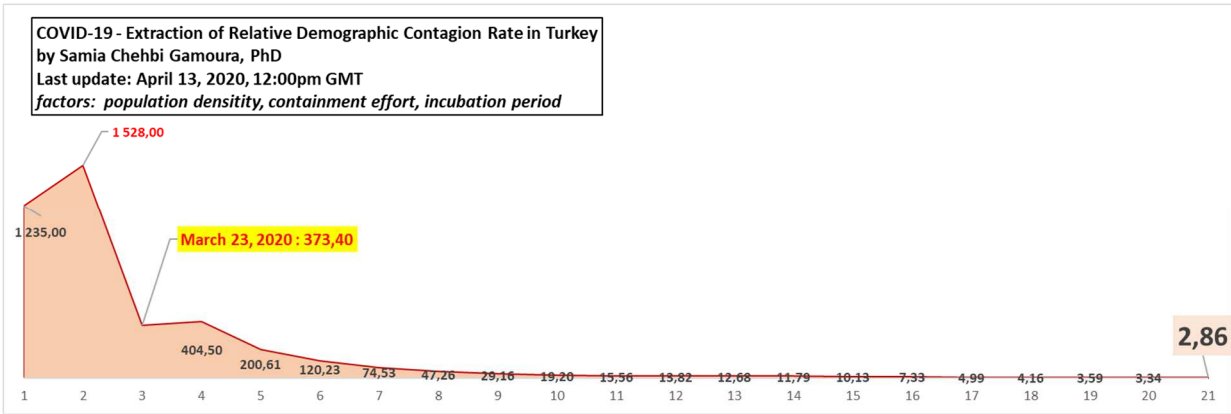


Figure 3. Extraction of our Relative Demographic Contagion in Turkey

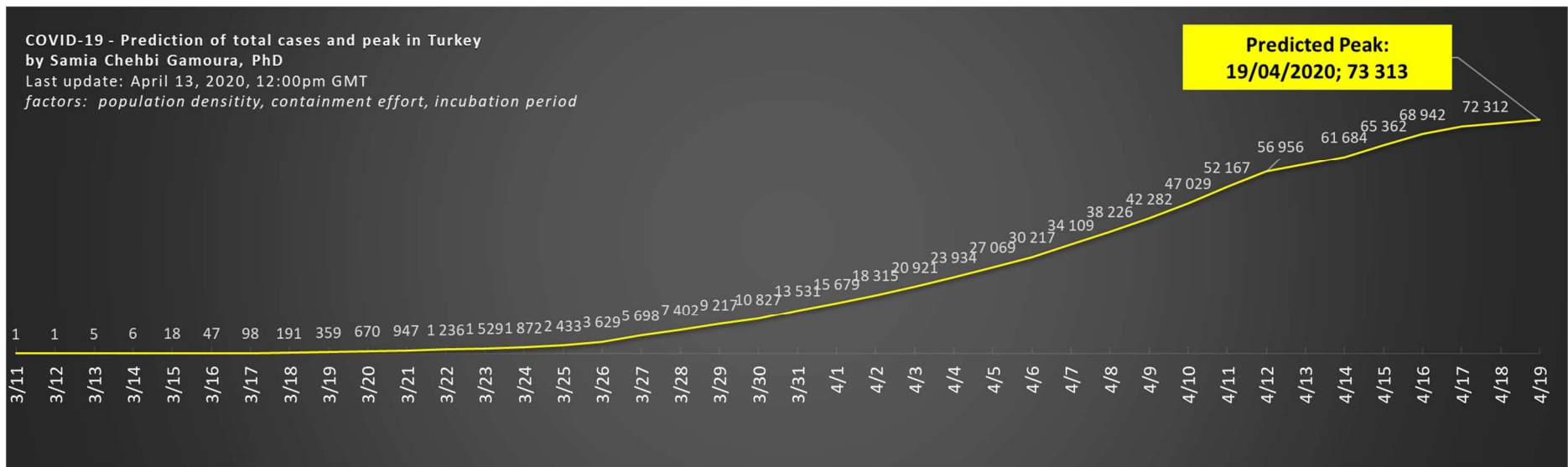


Figure 4. Prediction of peak and total cases in Turkey for next days

References

- [1] S. C. Gamoura, «Real-time Data Analytics and prediction of the COVID-19 pandemic (Period to March 22th, 2020),»
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Published on April 10, 2020 - DOI: <https://doi.org/10.13140/RG.2.2.26379.03367>