

METEOROLOGICAL PSYCHOLOGY: THE CASE OF ATHENS DURING THE 2021 HEATWAVE

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ABSTRACT

Meteorological psychology is a field in Psychology that has not been widely researched. During the 2021 heatwave in Athens, Greece temperatures rose locally up to 46.1°C in Metropolitan Athens. We conducted three semi structured interviews with residents of the Athens Riviera who experienced the heatwave. Through qualitative research and the use of Interpretative Phenomenological Analysis (IPA), we examined the effect of the heatwave in terms of psychological well-being. Results suggested a deterioration in psychological functioning during the heatwave, increased stress and depressive feelings.

Keywords: Meteorological Psychology, Psychology, Meteorology, Athens, Heatwave.

I. INTRODUCTION

According to Wang (2017) "Meteorological psychology" refers to the study of the influence of two meteorological conditions, weather (short-term) and climate (long-term), on multilevel psychological and behavioral functions from individual cognition and emotion, to group dynamics, and further to institutional and cultural traits. Wang (2017) further argues that the field of meteorological psychology has not been researched adequately and given that human society is greatly influenced by meteorological conditions, meteorological psychology should be an important research field in the discipline of psychology.

During the summer of 2021, Athens experienced one of the worst and most persistent heatwaves in its history. According to the National Observatory of Athens (2021), Athens registered 10 heatwave days between late July and early August 2021 (from the 28th of July until the 6th of August). Athens is a city prone to heatwaves and is currently holding the official temperature record for the highest temperature ever recorded in the European continent with 48.0°C in July 1977 (WMO, n.d.). Furthermore, the Athens Riviera which consists of the southern suburbs of Metropolitan Athens, experiences the highest average annual temperatures in Continental Europe with average annual temperatures reaching up to 20.4°C in Nea Smyrni (National Observatory of Athens meteorological station) during the past decade. Thus, it becomes obvious that hot weather is a distinct element of Athenian climate, especially during the summer. While the British Psychological Society (2018) has previously examined how weather impacts human behaviour, it remains unclear how extreme weather events exactly operate on a psychological well-being level.

II. METHODOLOGY

We conducted three semi structured interviews with Athenian residents who experienced the 2021 heatwave. For the purposes of identifying main emerging themes we employed a form of qualitative analysis called Interpretative Phenomenological Analysis (IPA) which is widely used in psychological research.

III. RESULTS AND DISCUSSION

Three residents of the Athens Riviera were recruited from the social network of both researchers and were interviewed in relation to their experience of the 2021 Athens heatwave. Two of the residents needed to work outside during the entire period of the heatwave and as a result had to move around the city for prolonged periods of time. The other resident was a stay-home mother. All three participants have reported no history of serious psychological disorders while they suggested that their physical health has been excellent for the most part of their lives with only minor health issues presenting over the years. Two of the participants were male in their mid to late 30's while the female participant was in her early 40's. Two of the participants grew up in Athens and were very familiar with the Athenian climate and one male participant moved in Athens a decade ago and was very accustomed with the climate of the city. Interviews lasted around 30 minutes and open ended questions were mostly used focusing on how the participants experienced the heatwave. All interviews were

held in the Greek language. Participants were asked a series of questions describing their mental health and overall psychological well-being during the heatwave. A brief mental and physical health history was taken for each participant and interviews were recorded and subsequently analyzed with the help of Audacity software. All interviews were verbatim transcribed and IPA was employed in order to identify emerging common themes of the heatwave experience.

The qualitative analysis through IPA suggested the existence of only three basic emerging themes as shown below (**Table 1**). The first theme was named “Stress” and it marked a clear increase in stress levels for all participants which was verbalized in various ways. The second emerging common theme was named “Depressive Feelings” and again marked a spike in self-reported feelings of the blues or more prominent depressive feelings for all three participants. The final emerging common theme was named “Exhaustion” and described an overall exhaustion experienced from the participants in direct relation to the heatwave and of how prolonged this weather event has been.

The aim of the current study is to examine how weather events impact our psychological well-being. While meteorological psychology is only superficially examined by international academia, there has been no major effort to actually quantify and describe in detail the interrelation between weather events and psychological well-being. We hope that our study will be a motivating force for psychology researchers who will be interested to further incorporate meteorological psychology into the discipline of psychology.

Table 1. Main Themes

Theme Number	Theme Name	Notable Quotes
1	Stress	“I was definitely more stressed because of the heatwave. I was getting really agitated on how prolonged this weather event was” A.N
2	Depressive Feelings	“I remember distinctly feeling heavy. Almost depressed as I was unable to do many of my usual activities”. M.P
3	Exhaustion	“It was mentally and physically exhausting experience. I had to work outside for many hours some of the heatwave days and I was really exhausted”. K.L

IV. CONCLUSION

Meteorological psychology has only very recently become the subject of academic scrutiny among isolated psychology researchers. While some research suggests a strong interrelation between weather and psychological well-being and given that human activity is extremely dependent on weather events and climate in general, the area of meteorological psychology has been mostly overlooked by psychology researchers. Our small study presents serious limitations in terms of sample size and due to lack of previous serious research on the area of meteorological psychology. However, our findings suggest that at the very least extreme weather events have a measurable effect on our psychological well-being.

V. REFERENCES

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