The Smart Programmer for Rationalizing Water During Showering and Ablution

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Background: As water is one of the essential elements of life for the public, and since the Palestinian is one of the water poorest in the world, it becomes the backbone of his life. Objectives: This study aims to invest the contemporary technologies for managing the difficulty of manual control of unintended water waste, to rationalize water consumption during frequent household activities, especially Ablution and showering. Study method: Initially, data includes measuring and calculating the amount of available, and consumed water while using different types of toilet drainers, taps, or showers. A proposed model of a smart programmer with many sensors and specialized programs was designed to rationalize water consumption. The proposed programmer measures the amount of available water and automates the flow and stops of water. Then, the flow and stop times were used to calculate the amount of consumed and potentially saved water in each stage of Ablution and showering. Results: Based on the rationalizing program used, results ensure the potential to save 30-85% of the hypothetical consumed water during Ablution and showering. Furthermore, about 50% of the 73 litters of daily consumed water by a Palestinian is used for the toilet drainer, and such a huge amount of spent water could be reused from the consumed water for Ablution. Thus, if a Palestinian saves 30 cups of water per year, a family of five members saves up to 150 cups of water per year. Conclusions: The proposed programmer establishes a practical, accurate, and quantified Palestinian strategy to preserve what is available from the already scarce water sources, to rationalize water consumption in a manner that ensures the critical balance between the available and the needed water under all circumstances.

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