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The following congruence for power sums,  $S_n(p)$ , is well known and has many applications:

$$1^n + 2^n + \cdots + p^n \equiv \begin{cases} -1 \pmod{p}, & \text{if } p-1 \mid n; \\ 0 \pmod{p}, & \text{if } p-1 \nmid n, \end{cases}$$

where  $n \in \mathbb{N}$  and  $p$  is prime. We extend this congruence, in particular, to the case when  $p$  is any power of a prime. We also show that the sequence  $(S_n(m) \bmod k)_{m \geq 1}$  is periodic and determine its period. (Received September 25, 2017)