Suppose you pour 20 mL of silver nitrate into a beaker with 80 mL of water (H20) in it. You also pour 20 mL of silver nitrate into a separate beaker, but this one contains 80 mL of salt water (NaCl). Is the percent strength of the silver nitrate the same in both of these solutions?

No, it is not. Concentration of silver nitrate in a beaker with NaCl is lower, because some quantity of silver nitrate reacts with NaCl

$AgNO_3 + NaCl \rightarrow AgCl\downarrow + NaNO_3$