Let $\Omega \subset \mathbb{R}^n$ be a domain with a moderate boundary regularity, $p \in (1, \infty)$ and let $d$ be the distance function defined by $d(t) = \operatorname{dist}(t, \partial\Omega)$, $t \in \mathbb{R}^n$. Assume that $u$ belongs to the Sobolev space $W^{1,p}(\Omega)$. A classical result states that $u \in W_0^{1,p}(\Omega)$ if and only if $\frac{u}{d} \in L^p(\Omega)$ and $\nabla u \in L^p(\Omega)$. This fact has been several times consecutively refined, and each time the required condition $\frac{u}{d} \in L^p(\Omega)$ was relaxed to a weaker one. The first such improvement shows that the condition $\frac{u}{d} \in L^{p,\infty}(\Omega)$ is sufficient. In the next such result the condition $\frac{u}{d} \in L^1(\Omega)$ was considered. Moreover, this result was extended to Sobolev spaces of higher order. In this thesis we improve the previous results in the case when $n = 1$ and $\Omega$ is an open interval $I$. In our principal result we prove that $u \in W_0^{1,p}(I)$ if and only if $\frac{u}{d} \in L^{1,p}(I)$ and $u' \in L^p(I)$.