Suppose BEC does exist. What is then $T_c$?

BEC can take place only at $\mu = 0$, otherwise all the occupation numbers, including $n_p = 0$, are finite. Hence, $T_c$ should correspond to the point when

$$\mu(u,T) = 0.$$ 

That is

$$n = \frac{1}{\int \frac{dp}{(2\pi \hbar)^d}} \frac{1}{e^{\mu/T} - 1}$$

$$\frac{d\mu}{dp} = p^{d-1} dp$$

$$n \propto \frac{\int_0^\infty dp \cdot p^{d-1}}{e^{(\mu/T)^2} - 1} \propto \frac{d-1}{2} \int_0^\infty \frac{x \cdot x^{d-1}}{e^{x^2} - 1}$$

At $d < 3$ the integral diverges at $x = 0$, because $e^{x^2} - 1 \sim x^2$. Hence, the point where $\mu(u,T) = 0$ and $T > 0$ does not exist in 1D and 2D.