Comparison of Bohr and Shrodinger equation

Information	Bohr model	Shrodinger model
▶ energy levels e⁻ H atom	$E_n = -\frac{B \cdot 6eV}{n^2}$ $n = 1,2,3,4$	$E_n = -\frac{13.6eV}{n^2}$
	n: Bohr quantum number	n:- principle quantum number
▶ L [orbital angular momentum] of e⁻	$L = n\hbar$ $n :- 1,2,3,4,\ldots$ [no possibility of 0 angular momentum]	$L = \sqrt{l(l+1)}\hbar$ $l = 0,1,2,3,\ldots(n-1)$
	[electron can't have 0 angular momentum]	[0 possible] (0 only spherically symmetric)
▶ Which quantum numbers specify a quantum state of electron	n = Bohr quantum number $n = 1,2,3,4\ldots$ [quantum state specified by Bohr quantum number]	n, l, m_l $n = 1,2,3,\ldots$ $l = 0,1,2,3,\ldots n-1$ $m_l = 0, \pm 1, \pm 2, \pm 3 \ldots \pm l$ [quantum number specified by (ψ_{nlm_l})]
▶ role of n	Energy : angular momentum	specifies energy but no orbital angular momentum [nothing to do with PQN]

- What is the role of l — no n — angular momentum

$$L^2 = l(l+1)\hbar^2$$

- What is the role of m_l — no role — specifies z-comp of L: L_z

or, $L_z = m_l \hbar$