There are about 200 million brave fighters, fighting precancerous conditions such as Oral Submucous Fibrosis, waiting desperately for sustainable treatment solutions. The malignant transformation rate (rate of conversion to cancer) ranges from 7 to 30% in South East Asia. Devising precise OSMF disease models is the need of the hour of the therapeutic sector engaged in developing and testing drugs for combating the condition and preventing it from transforming into oral cancer. Disease models developed through 3D bio-printing provide an edge over the conventional animal models as it eliminates limitations of “one shoe fits all” approach. It provides the choice of selecting desired cell type, allows their precise positioning and maintenance of the tissue hierarchy, control over cell migration and cell interactions, ECM components can be harvested directly from the patient and included in the disease replication process, thereby, ensuring closest disease mimic. Therefore, this first of its kind, highly precise, “graded” microenvironment replication of OSMF disease can be achieved only through bioprinting, at present.