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Employee competencies development framework for industry 4.0 adaptation in the healthcare sector

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The emergence of Health 4.0 has become significant due to the development of technologies worldwide. Health is a significant component in any developing country. Hence, the latest technologies have to be attuned and the competencies of employees should be altered to adapt the features of Industry 4.0. An empirical gap has been identified in the field of health 4.0 in a global context with the expert reviews based on a pilot study. Still, assessing employee proficiencies in health 4.0 remains relatively unexploited. Therefore, identification of the needed competencies and transition is vital for the healthcare industry globally. The overall objective of this study is to seek the potentiality for the adaptation of industry 4.0 for healthcare sector and to investigate the required level of employee competencies to yield maximum benefits from the technology implementation. A systematic review of literature has been carried out to investigate the different assessments and models of studies existing. A keyword based search was conducted in research databases through three main domains namely, technologies required for industry 4.0, healthcare sector and employee competency assessment for industry 4.0 for selecting 26 relevant research papers which have been published and proven as valid, to extract the knowledge for this study. According to the relevance, 15 articles were selected for the literature review. A framework was developed to benchmark and acquire the latest technologies used in health 4.0 such as big data, internet of things, smart systems and cyber-physical systems, as well as employee competencies required for each level of technology adaptation. A comprehensive investigation was conducted to identify key processes of healthcare sector such as patient care observation, emergency health processes, and surgery and pharmaceutical operations. Then the technologies, application and the competencies such as knowledge about ICT, ability to work with data, technical knowhow and personal skills to use technologies were summarized through selected research papers. For example, ring sensors are used to observe the patients, therefore employees should have the knowledge to interact with them. This framework can be used by the healthcare sector practitioners as a guideline to acquire new talents in planning for training programs compatible with the technologies in use. It is suggested that this framework can be validated empirically through case studies in Sri Lankan healthcare sector as a future research.

Keywords: Health 4.0, Industry 4.0, Employee competencies development