

### DESIGNING EVIDENCE BASED RISK ASSESSMENT SYSTEM FOR CANCER SCREENING AS AN APPLICABLE APPROACH FOR THE ESTIMATING OF TREATMENT ROADMAP

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**Background and aims:** Prevention of cancer and risk assessment activity is highly information – intensively task, yet health care providers don't have appropriate technologies available to access, manage and interpret varied information. Also decision making modalities for cancer screening for many conditions and different stages have become increasingly complex. Evidence based systems facilitate decision making for the delivery of cancer screening services. The aim of this article is to designing evidence based Risk assessment system for cancer screening.

**Methods:** This was a developing study. The first phase was a comparative study that performed by using secondary data extracted from literature review. Three countries (Canada, Australia and United States) were selected from 25 countries that are member in the international Cancer Screening Network (ICSN). National guidelines of colorectal cancer screening were approved in the next step. The second phase was estimating of survival rate of covered populations. The Naive Bayes classifier was selected as one of the data mining technique for estimating. Finally evidence based hybrid decision support system was implemented. Programming language of designed web base system is Javascript. An integrated development environment (IDE) and database of system are respectively JetBrains webstorm and MySQL.

**Results:** In this study, screening evidence base system was surveyed of six dimensions. These dimensions were general specification, functions, technologies, data resources, users, manual and standards of screening information system. We approved four risk assessment guidelines (High risk, increased, average and low risk), clinical criteria for hereditary syndromes and roadmap of genetic and pathologic analysis. Designed intelligent hybrid system is integrated with registry system. This web base system has detected risk assessment groups by approved guidelines. This system determined 595 individuals with high risk, 185 individuals with increased risk, 20 individuals with average risk and 16 individuals with low risk up to July 30, 2016. Also screening recommendation screening of system was demonstrated by risk groups. Precision of system for detecting of risk groups was 100%. Evidence based system has estimated survival rates of covered populations with precision of 95.6%.

**Conclusion:** This review was presented that evidence based system has improved real-time decision making process. This system has managed vast operation of cancer screening. One of the suggestions for future research is the national integrated evidence based network for all cancers.