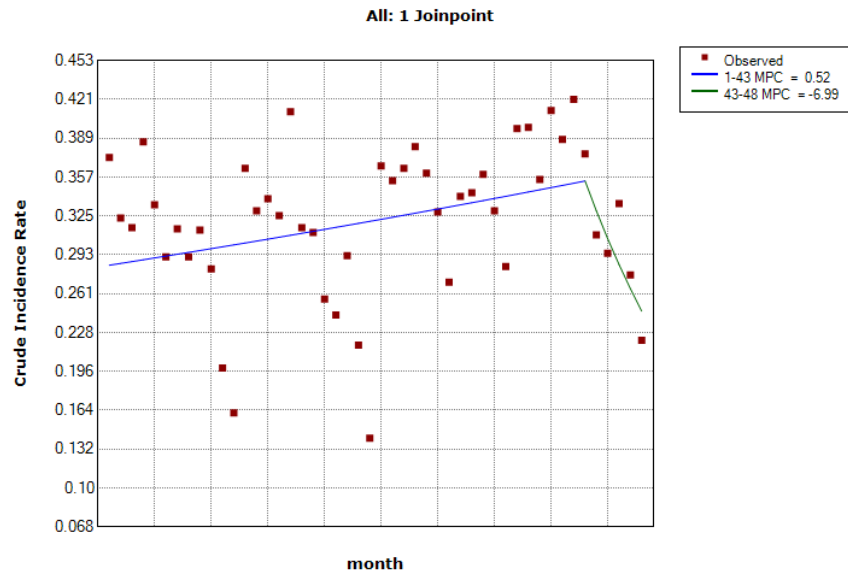
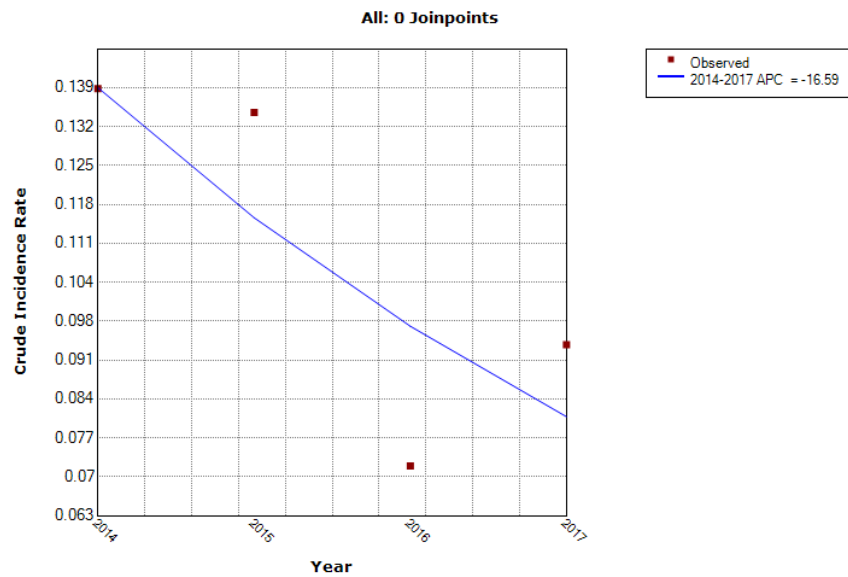


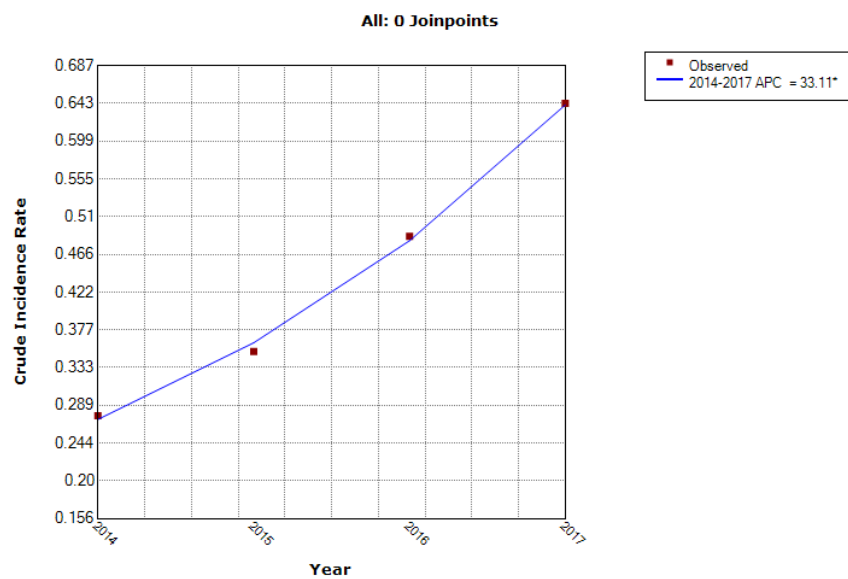
**Figure 1** The changing trend of substance-related deaths rate in the Islamic Republic of Iran during 2014–17



\* Indicates that the Monthly Percent Change (MPC) is significantly different from zero at the alpha = 0.05 level.  
Final Selected Model: 1 Joinpoint.

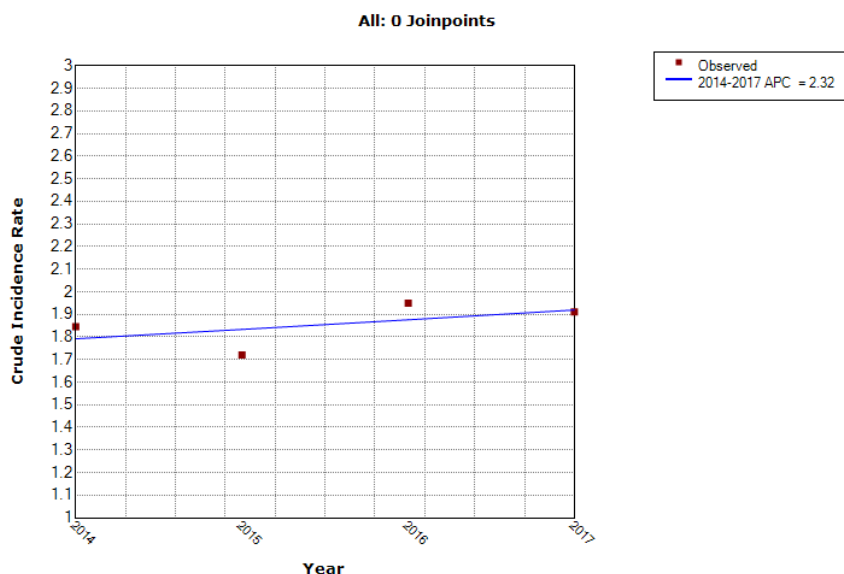


\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.  
Final Selected Model: 0 Joinpoints.

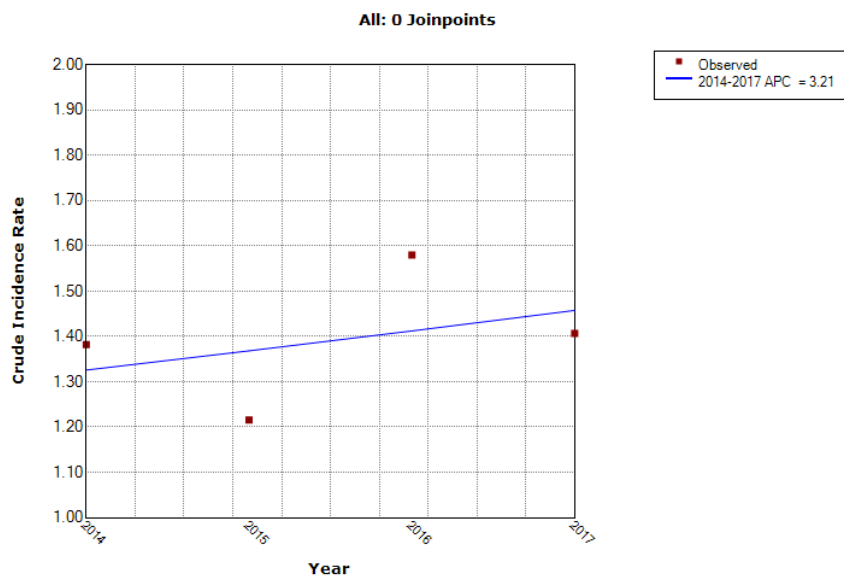


\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.  
Final Selected Model: 0 Joinpoints.

**Figure 1** The changing trend of substance-related deaths rate in the Islamic Republic of Iran during 2014–17 (concluded)



\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level. Final Selected Model: 0 Joinpoints.



\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level. Final Selected Model: 0 Joinpoints.

produced in Afghanistan enters the Iranian market and 83% of Afghanistan’s opium is transited through the Islamic Republic of Iran, of which approximately 40% is used domestically.

In our study, adults showed the highest mortality rate. According to demographic studies conducted in the Islamic Republic of Iran, the third and fourth decades of life are the most common ages for substance dependence (22,23). Similar studies conducted in the USA confirm this: although substance use disorders have been decreasing among adolescents, the mortality rate due to illicit substance use increased among adults (26–34 and ≥ 35 years) during 1999–2015 (24). The most important risk factors in this age group include: being single, having no proper job, unemployment, lack of financial security and homelessness (25).

Death among adults (45–54 years) adds to the years of potential life lost compared to later ages in life (55+ years) (26). A USA study calls these kinds of death as “deaths of despair” (27), common among those aged 45–54 years. A wide range of socioeconomic factors are implicated in increased substance abuse and overdose of lethal substances in this age group (27).

Substance abuse is common among older adults in the Islamic Republic of Iran (28), leading to a variety of disorders among this group (29). Some disorders come with aging: previous studies have shown that infection, liver disease and prescription of opium by doctors to relieve the pain of cancerous or noncancerous diseases are the most common causes of substance use disorders among adults and older adults, and these are associated with increased odds of death (28–30). The most important