Violin Plots

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# Violin Plots

## Arsenic
KYWVas    <- na.omit(full[full$SFIPS==21 | full$SFIPS==54,]$Ascounty)
notKYWVas <- na.omit(full[full$SFIPS!=21 & full$SFIPS!=54,]$Ascounty)
KYWVdf    <- KYWVas    %>% as.data.frame() %>%
  mutate(KYWV="KYWV") %>% select("Ascounty"=1,"KYWV"=2)
notKYWVdf <- notKYWVas %>% as.data.frame() %>%
  mutate(KYWV="notKYWV") %>% select("Ascounty"=1,"KYWV"=2)
KYWVcombined = merge(KYWVdf,notKYWVdf,all=TRUE)
KYWVcombined %>% ggplot(aes(x=KYWV,y=Ascounty)) +
  geom_violin(aes(fill = factor(KYWV))) +
  geom_boxplot(width=0.1)
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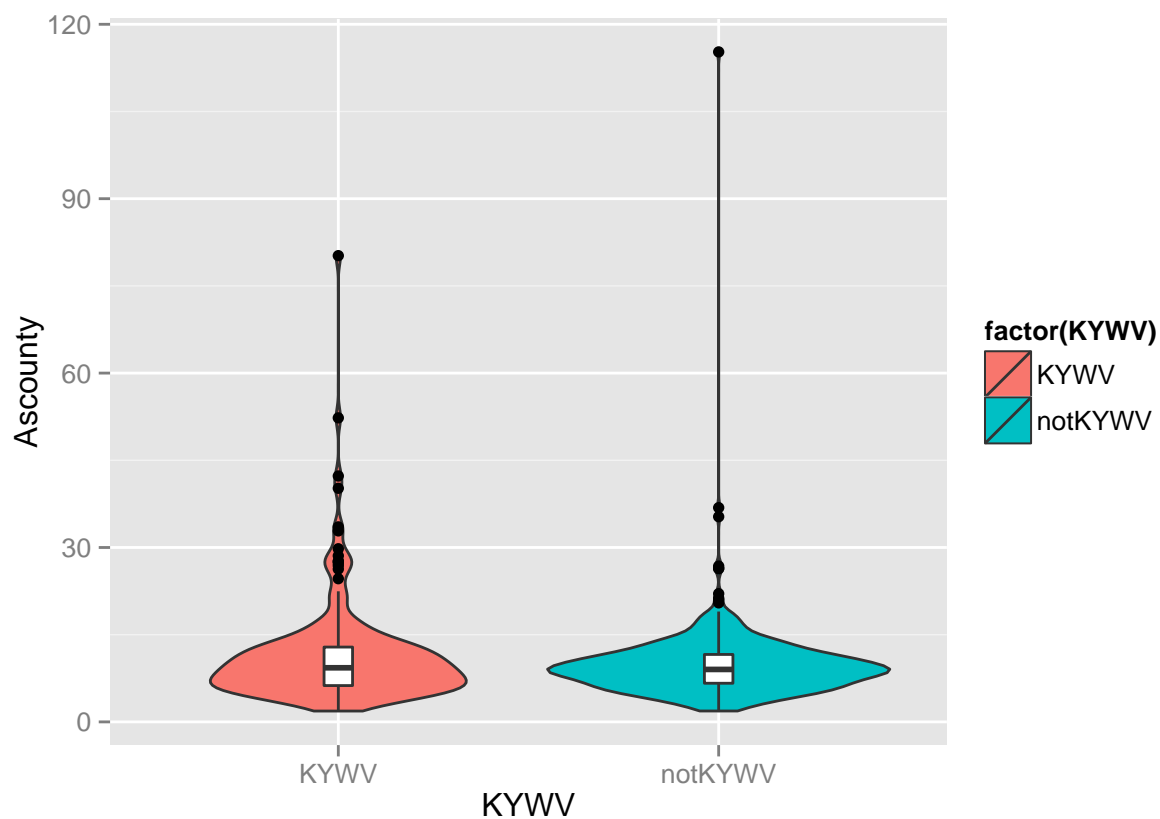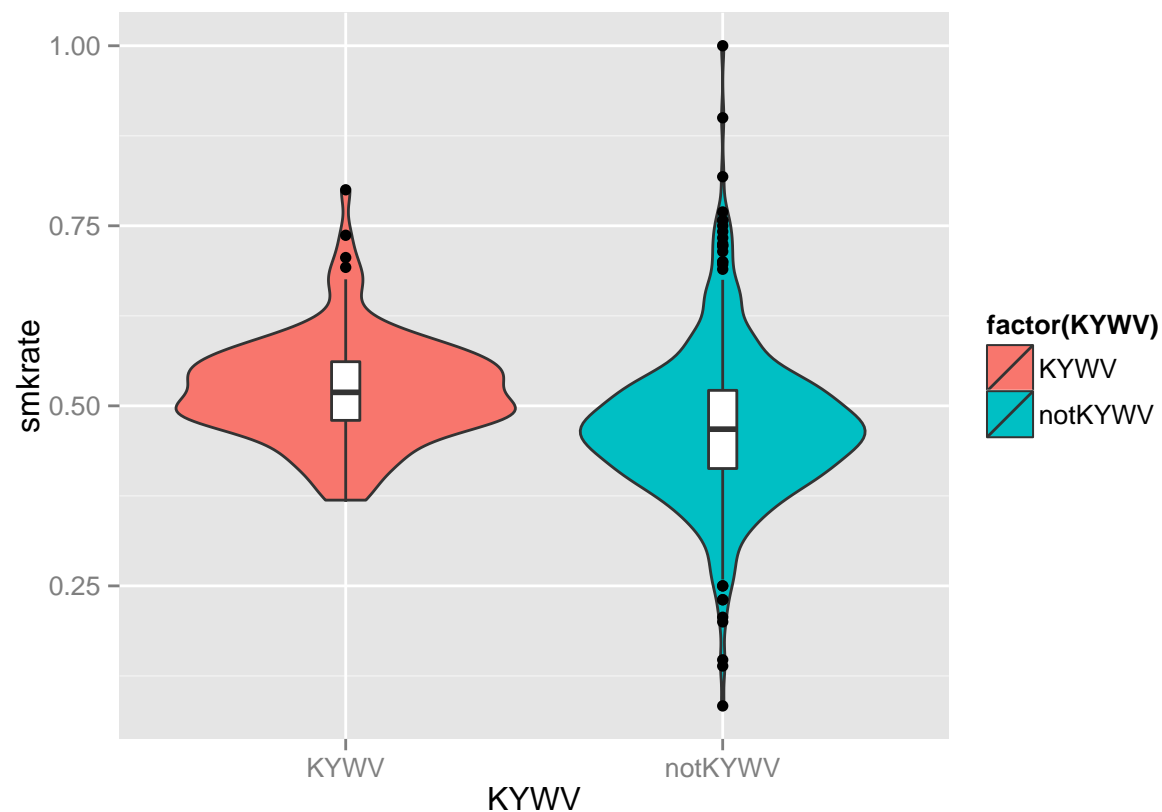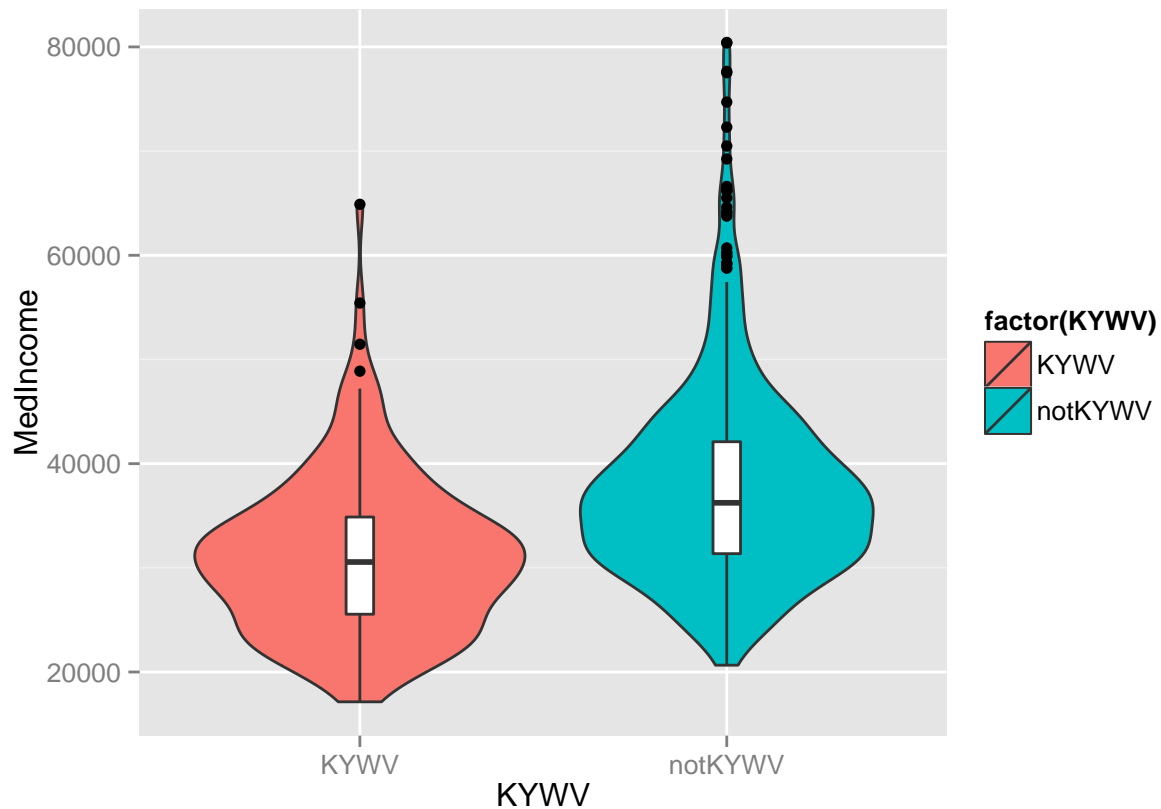
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## Smoking Prevalence
KYWVsmk     <- na.omit(full[full$SFIPS==21 | full$SFIPS==54,]$smkrate)
notKYWVsmk <- na.omit(full[full$SFIPS!=21 & full$SFIPS!=54,]$smkrate)
KYWVdf     <- KYWVsmk    %>% as.data.frame() %>%
  mutate(KYWV="KYWV") %>% select("smkrate"=1,"KYWV"=2)
notKYWVdf <- notKYWVsmk %>% as.data.frame() %>%
  mutate(KYWV="notKYWV") %>% select("smkrate"=1,"KYWV"=2)
KYWVcombined = merge(KYWVdf,notKYWVdf,all=TRUE)
KYWVcombined %>% ggplot(aes(x=KYWV,y=smkrate)) +
  geom_violin(aes(fill = factor(KYWV))) +
  geom_boxplot(width=0.1)
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## Median Income
KYWVmed    <- na.omit(full[full$SFIPS==21 | full$SFIPS==54,]$MedIncome)
notKYWVmed <- na.omit(full[full$SFIPS!=21 & full$SFIPS!=54,]$MedIncome)
KYWVdf     <- KYWVmed    %>% as.data.frame() %>%
  mutate(KYWV="KYWV") %>% select("MedIncome"=1,"KYWV"=2)
notKYWVdf <- notKYWVmed %>% as.data.frame() %>%
  mutate(KYWV="notKYWV") %>% select("MedIncome"=1,"KYWV"=2)
KYWVcombined = merge(KYWVdf,notKYWVdf,all=TRUE)
KYWVcombined %>% ggplot(aes(x=KYWV,y=MedIncome)) +
  geom_violin(aes(fill = factor(KYWV))) +
  geom_boxplot(width=0.1)
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## Lung cancer incidence
KYWVrate    <- na.omit(full[full$SFIPS==21 | full$SFIPS==54,]$AdjRate)
notKYWVrate <- na.omit(full[full$SFIPS!=21 & full$SFIPS!=54,]$AdjRate)
KYWVdf    <- KYWVrate    %>% as.data.frame() %>%
  mutate(KYWV="KYWV") %>% select("AdjRate"=1,"KYWV"=2)
notKYWVdf <- notKYWVrate %>% as.data.frame() %>%
  mutate(KYWV="notKYWV") %>% select("AdjRate"=1,"KYWV"=2)
KYWVcombined = merge(KYWVdf,notKYWVdf,all=TRUE)
KYWVcombined %>% ggplot(aes(x=KYWV,y=AdjRate)) +
  geom_violin(aes(fill = factor(KYWV))) +
  geom_boxplot(width=0.1)
```