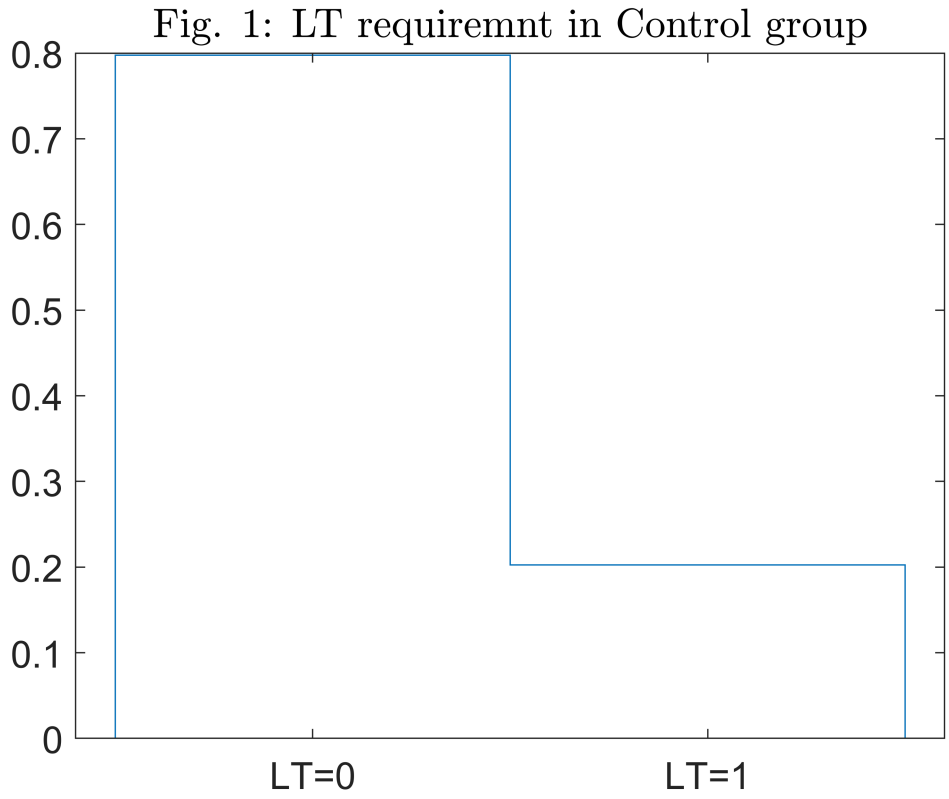
# Assured Allies assignment Nofi

## control Analysis

control group rate of Long Term Care Utilization

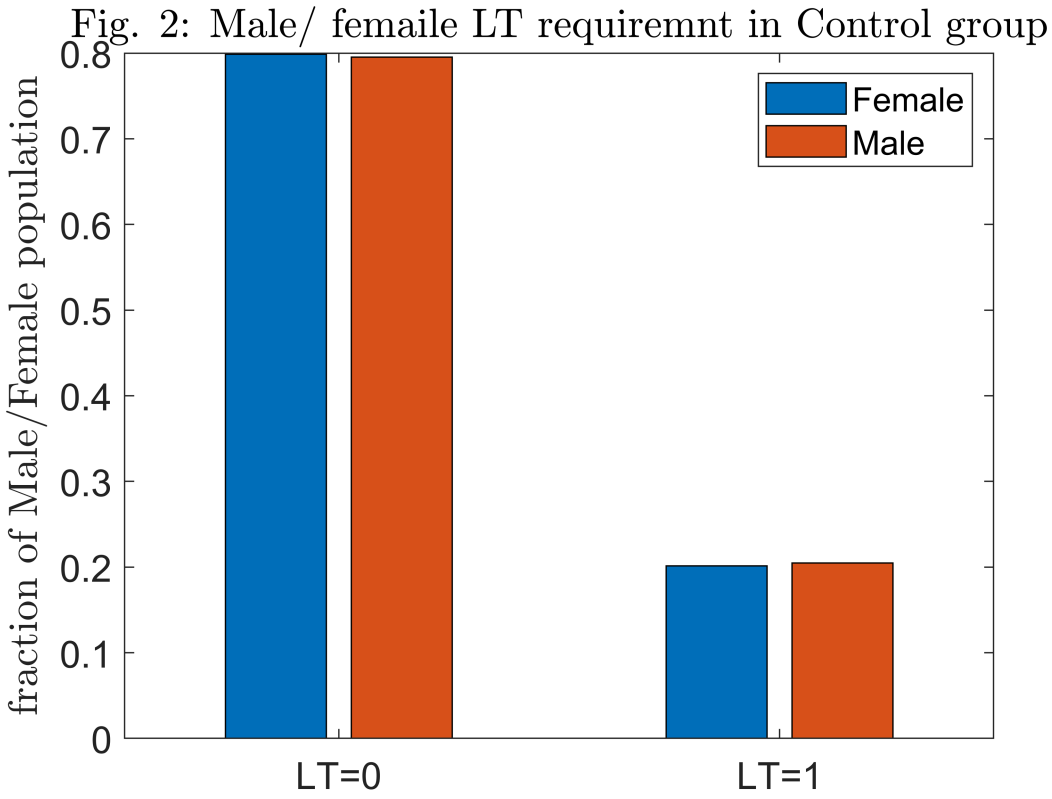
```
figure
Cntrl=tab.group=="control" ;
histogram(tab.ltcb(Cntrl),'DisplayStyle',"stairs",'DisplayName','Long Term Care 0',...
    'Normalization',"probability");
set(gca,'XTick',[0 1],'XTickLabel',{'LT=0','LT=1'},'fontsize',14)
titlemine('Fig. 1: LT requiremnt in Control group');
```




parsing men and women

```
figure
CntrlW=tab.group=="control" & tab.gender==1;
CntrlM=tab.group=="control" & tab.gender==0;

WMlt1=sum(tab.ltcb(CntrlW)==1);
WMlt0=sum(tab.ltcb(CntrlW)==0);

MNlt1=sum(tab.ltcb(CntrlM)==1);
```

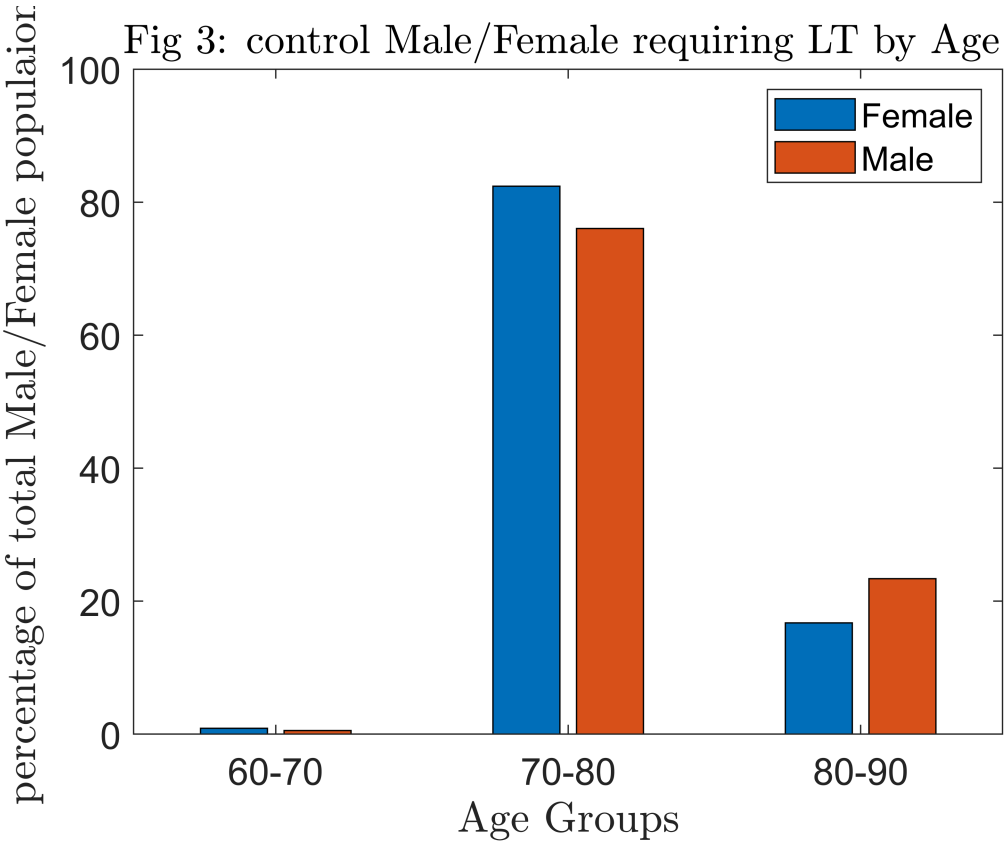
```
MNlt0=sum(tab.ltcb(CntrlM)==0);



figure
bar([0  1],[[WMlt0 WMlt1]./sum(CntrlW); [MNlt0 MNlt1]./sum(CntrlM)]')
ylabelmine('fraction of Male/Female population');
set(gca,'XTickLabel',{'LT=0','LT=1'},'fontsize',14)
legend({'Female','Male'})

titlemine('Fig. 2: Male/ femaile LT requiremnt in Control group');
```




parsing by age groups fo 'LT needed' populaion

```
% bin by ages
ageBins=60:10:90;
binInd=discretize(tab.age,ageBins);


baseMask=tab.group=='control' & tab.ltcb==1;

femMask=baseMask & tab.gender==1;
malMask=baseMask & tab.gender==0;


femCount=[ sum(binInd(femMask)==1) sum(binInd(femMask)==2) sum(binInd(femMask)==3)  ]./sum(femM
```

```
malCount=[ sum(binInd(malMask)==1) sum(binInd(malMask)==2) sum(binInd(malMask)==3)  ]./sum(malM


figure
bar(1:3,[femCount ; malCount]')

set(gca,'XTickLabel',{'60-70','70-80','80-90'},'fontsize',14)
legend({'Female','Male'})

xlabelmine('Age Groups');
ylabelmine('percentage  of total Male/Female populaion');
titlemine('Fig 3: control  Male/Female requiring LT by Age ');
```

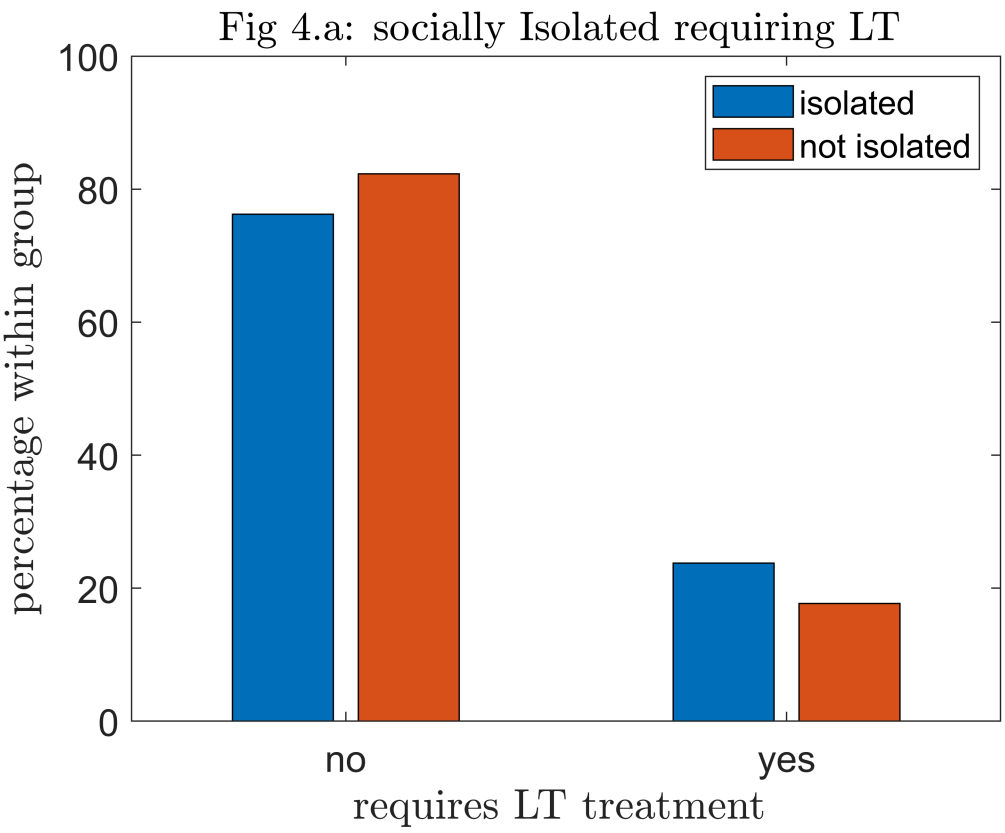



## exploring isolatio status

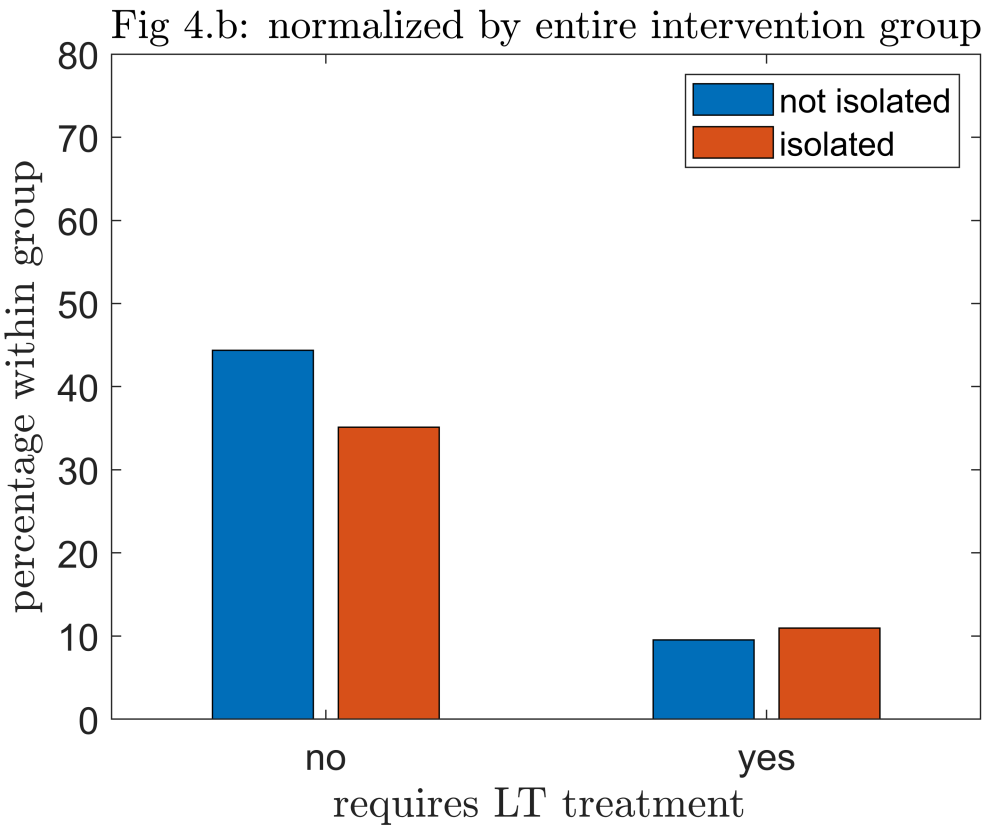
in the intervention gorup, among those that answered the questionnaire ,and are socially isolated

```
baseMask=tab.group=='intervention' & tab.questionnairecomplete=='1' ;% & tab.ltcb==1;

isoMask=baseMask & tab.socialisolationb=="1";
noIsoMask=baseMask & tab.socialisolationb=="0";

isoData=[sum(tab.ltcb(isoMask)==0), sum(tab.ltcb(isoMask)==1)]./sum(isoMask).*100;
noIsoData=[sum(tab.ltcb(noIsoMask)==0) , sum(tab.ltcb(noIsoMask)==1)]./sum(noIsoMask).*100;
```

```
figure
bar([0 1],[ isoData;noIsoData ]')

set(gca,'XTickLabel',{'no' ,'yes'},'fontsize',14)
legend({'isolated','not isolated'})

xlabelmine('requires LT treatment ');
ylabelmine('percentage within group');
titlemine('Fig 4.a: socially Isolated requiring LT ');
```

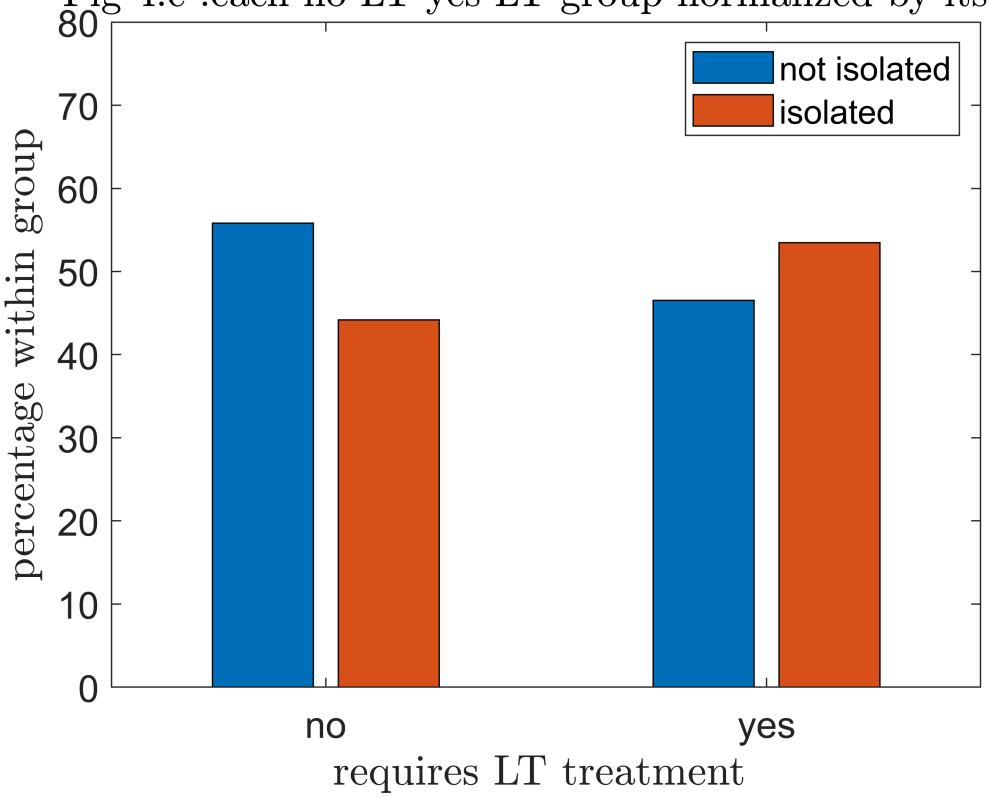



```
noLTData =[sum(tab.ltcb(noIsoMask)==0) sum(tab.ltcb(isoMask)==0)];
yesLTData=[sum(tab.ltcb(noIsoMask)==1) sum(tab.ltcb(isoMask)==1)];
figure
bar([0 1],[ noLTData./sum(baseMask) ; yesLTData./sum(baseMask)].*100    )

set(gca,'XTickLabel',{'no' ,'yes'},'fontsize',14)
legend({'not isolated','isolated'})
ylim([0 80])
xlabelmine('requires LT treatment ');
ylabelmine('percentage within group'); %  of total Male/Female populaion');
titlemine('Fig 4.b: normalized by entire intervention group');
```




```
figure
bar([0 1],[ noLTData./sum(noLTData) ; yesLTData./sum(yesLTData)].*100    )

set(gca,'XTickLabel',{'no' ,'yes'},'fontsize',14)
legend({'not isolated','isolated'})
ylim([0 80])
xlabelmine('requires LT treatment ');
ylabelmine('percentage within group'); %  of total Male/Female populaion');
titlemine('Fig 4.c :each no-LT yes-LT group normalized by itself');
```

Fig 4.c :each no-LT yes-LT group normalized by itself



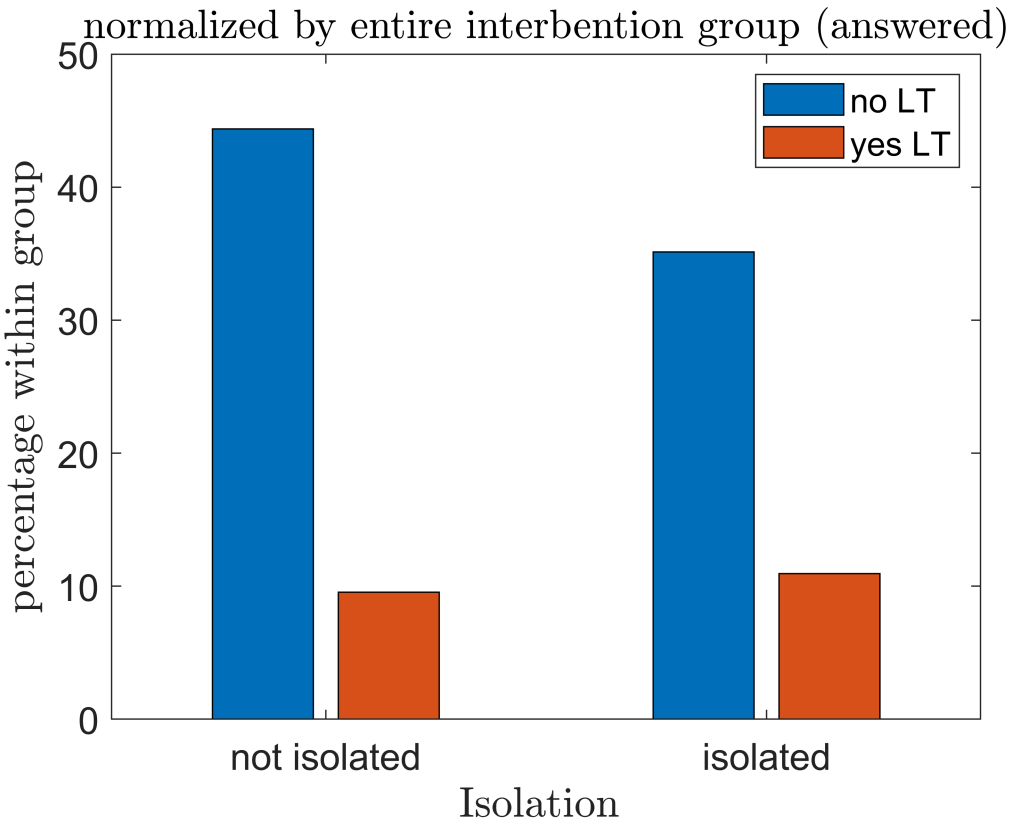

To tet the siginificance of the result we perform a t-test  comparing the control group and isolated group, with respect to those who require long-term treatment. :

```
[h,p]=ttest2(tab.ltcb(Cntrl),tab.ltcb(isoMask));

fprintf('Result of the t-test: There is a significant difference between the gorups, with signi
```

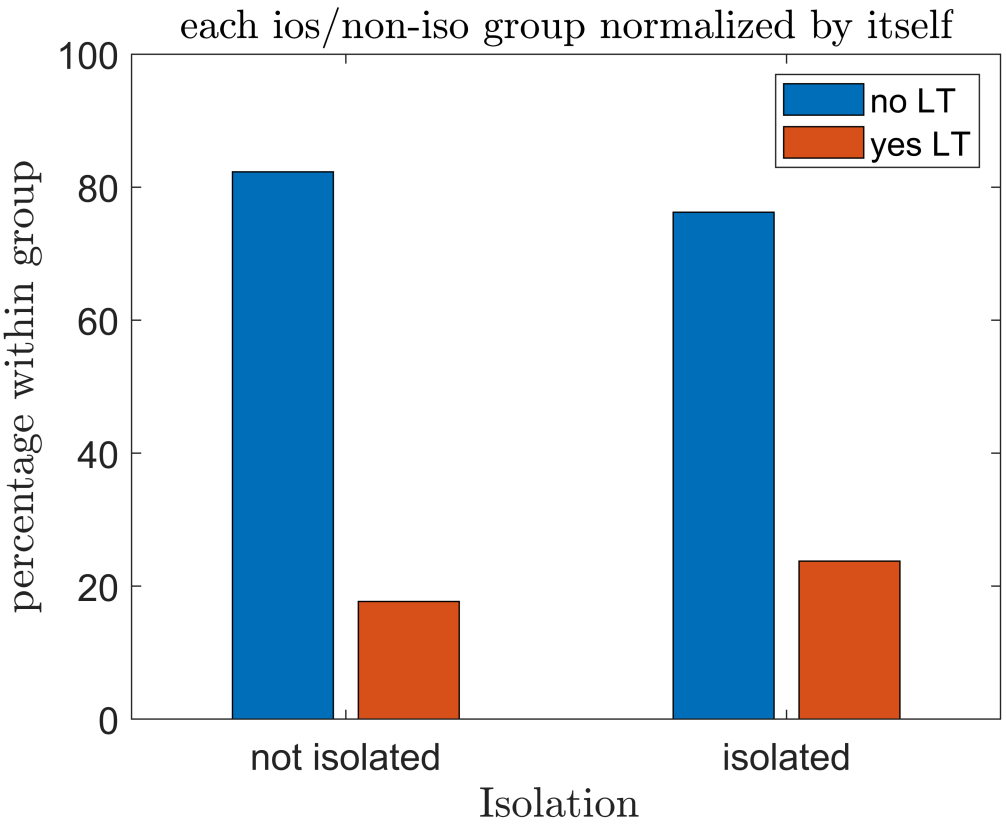
```
Result of the t-test: There is a significant difference between the gorups, with significance of p=0.002567
```

```
%risk_factor=
```

```
isoData=[sum(tab.ltcb(isoMask)==0), sum(tab.ltcb(isoMask)==1)];
noIsoData=[sum(tab.ltcb(noIsoMask)==0) , sum(tab.ltcb(noIsoMask)==1)];



figure
bar([0 1],[ noIsoData./sum(baseMask) ; isoData./sum(baseMask) ].*100)

set(gca,'XTickLabel',{'not isolated' ,'isolated'},'fontsize',14)
legend({'no LT','yes LT'})

xlabelmine('Isolation ');
ylabelmine('percentage within group'); %  of total Male/Female populaion');
titlemine('normalized by entire interbention group (answered)');
```

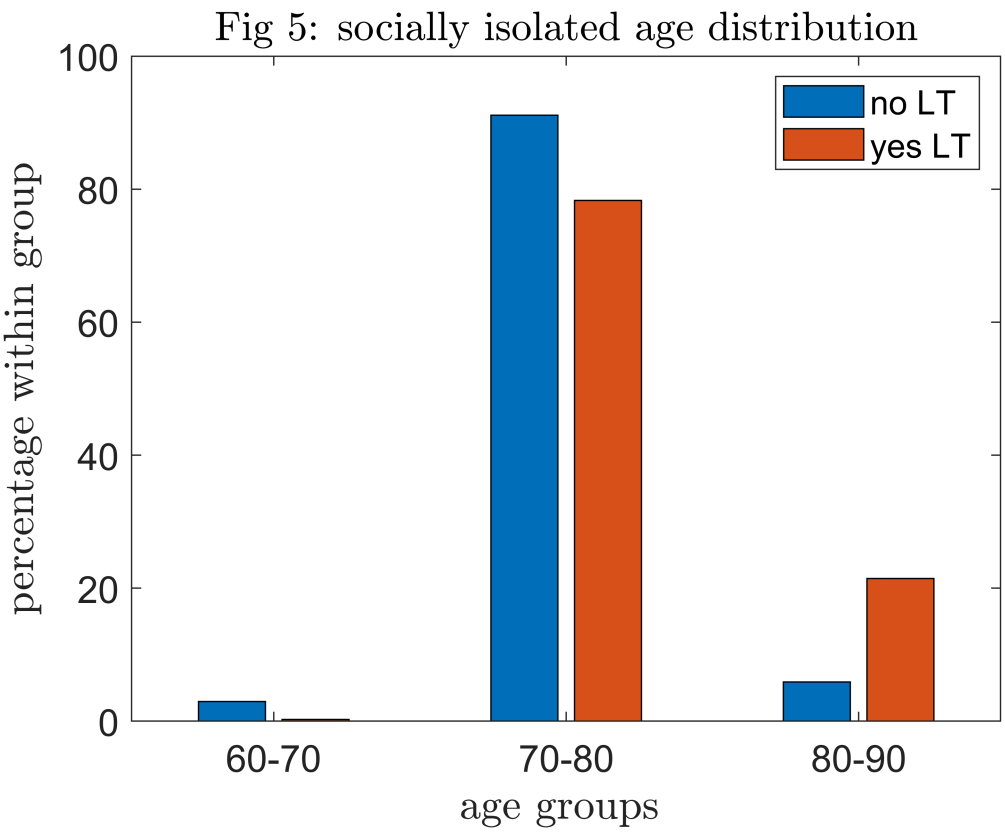



```
figure
bar([0 1],[ noIsoData./sum(noIsoData) ; isoData./sum(isoData) ].*100)

set(gca,'XTickLabel',{'not isolated' ,'isolated'},'fontsize',14)
legend({'no LT','yes LT'})

xlabelmine('Isolation ');
ylabelmine('percentage within group'); %  of total Male/Female populaion');
titlemine('each ios/non-iso group normalized by itself');
```




```
% parse by age

baseMask=tab.group=='intervention' & tab.questionnairecomplete=='1' ; % & tab.ltcb==1;

isoMask=baseMask & tab.socialisolationb=="1";
noIsoMask=baseMask & tab.socialisolationb=="0";

fac0=sum(tab.ltcb(isoMask)==0)./100;
fac1=sum(tab.ltcb(isoMask)==1)./100;

age1=[ sum(tab.ltcb(isoMask & binInd==1)==0)./fac0   sum(tab.ltcb(isoMask & binInd==1)==1)./fac
age2=[ sum(tab.ltcb(isoMask & binInd==2)==0)./fac0   sum(tab.ltcb(isoMask & binInd==2)==1)./fac
age3=[ sum(tab.ltcb(isoMask & binInd==3)==0)./fac0   sum(tab.ltcb(isoMask & binInd==3)==1)./fac

figure
bar([0 1 2],[ age1 ; age2 ; age3])

set(gca,'XTickLabel',{'60-70' ,'70-80','80-90'},'fontsize',14)
legend({'no LT','yes LT'})

xlabelmine('age groups ');
```

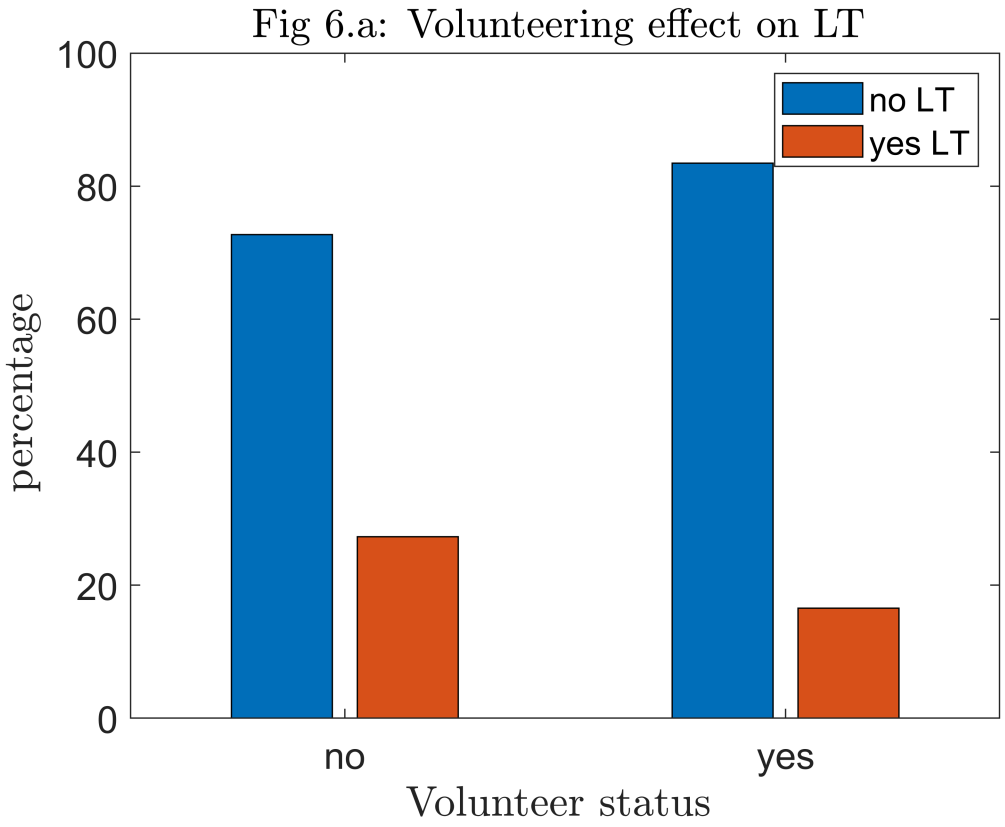
```
ylabelmine('percentage within group'); %  of total Male/Female populaion');
titlemine('Fig 5: socially isolated age distribution');
```




of the socially isolated group, see LT requirement with volunteer status

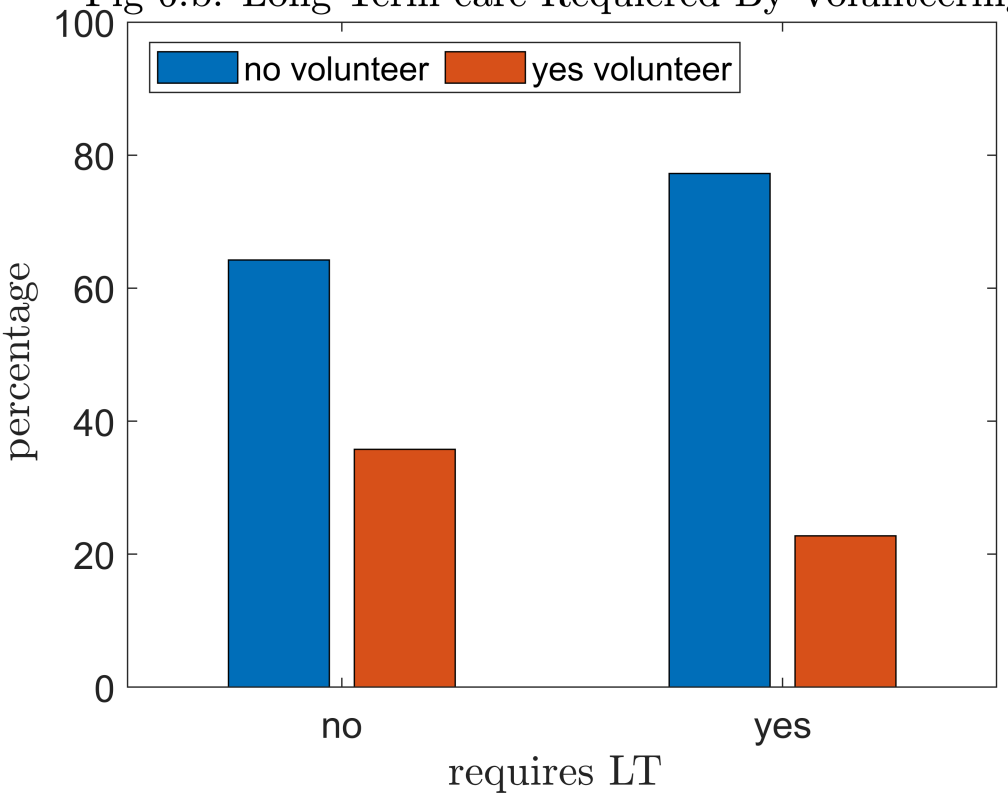
```
baseMask=tab.group=='intervention' & tab.questionnairecomplete=='1' & tab.socialisolationb=="1"

volMask=baseMask & tab.volunteerb=="1";
noVolMask=baseMask & tab.volunteerb=="0";

% fac0=sum(tab.ltcb(baseMask)==0)./100;
% fac1=sum(tab.ltcb(baseMask)==1)./100;

noVData=[ sum(tab.ltcb(noVolMask)==0) sum(tab.ltcb(noVolMask)==1) ]./sum(noVolMask).*100 ;
yesVData=[ sum(tab.ltcb(volMask)==0), sum(tab.ltcb(volMask)==1) ]./sum(volMask).*100 ;



figure
bar([0 1],[ noVData ; yesVData])

set(gca,'XTickLabel',{'no' ,'yes'},'fontsize',14)
legend({'no LT','yes LT'})
ylim([0 100])
```

```
xlabelmine('Volunteer status ');
ylabelmine('percentage '); %  of total Male/Female populaion');
titlemine('Fig 6.a: Volunteering effect on LT  ');
```




```
noLTData=[ sum(tab.ltcb(noVolMask)==0) sum(tab.ltcb(volMask)==0) ]./fac0;%./sum(noVolMask).*100
yesLTData=[ sum(tab.ltcb(noVolMask)==1), sum(tab.ltcb(volMask)==1)]./fac1;% ]./sum(volMask).*10



figure
bar([0 1],[ noLTData ; yesLTData])

set(gca,'XTickLabel',{'no' ,'yes'},'fontsize',14)
legend({'no volunteer','yes volunteer'},'location','northwest','NumColumns',2)
ylim([0 100])
xlabelmine('requires LT ');
ylabelmine('percentage '); %  of total Male/Female populaion');
titlemine('Fig 6.b: Long Term care Requiered By Volunteering ');
```

Fig 6.b: Long Term care Requiered By Volunteering




We perform a t-test to find whether the difference between the volunteering and non-volunteering group is significant:

```
[h2,p2]=ttest2(tab.ltcb(noVolMask),tab.ltcb(volMask));
fprintf('Result of the t-test: There is a significant difference between the gorups, with signi
```

```
Result of the t-test: There is a significant difference between the gorups, with significance of p=0.000002
```