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The Nepal Community Forestry Program and Member Mental Health - June 2019

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Forests, Access to “Greenness” and Human Health in is Emerging as an Interesting Area of Study

- E.O. Wilson (1984) “Biophilia hypothesis”
- Greenness often measured by NDVI
- Examples of recent cohort studies
  - James et al. (2016) –US nurses in highest NDVI quintile had 12% lower mortality than bottom 20%
  - Banay et al. I2019) - highest NDVI quintile of older US women had 13% lower depression risk than bottom 20%
  - Ji et al. (2018) - highest NDVI quintile of Chinese men and women over 80 years had 22% lower mortality than bottom 20%

Pathways of forests and greenness to better mental health (James et al., 2015)

- Stress reduction
- Physical activity
- More social interation and cohesion
- Less noise

Nepal Community Forestry (CF) Programme

- Formal devolution program made up of over 19000 user groups (CFUGs), covering 35% of the population and almost 2 million hectares
- Developed in 1980s and established in law in 1993
- Closes open access and implement access/extraction rules.
- Credited with reducing deforestation and maybe even increasing forest stock
- Don't want to overstate, but common forest use in Nepal has changed a lot in last 10 years. Much less dependence on direct use values, implying possible health effects.

Data: Household and Community Level

- At community/forest level 2013 nationally representative random sampling of CFs (MOFSC, 2013) matched with observationally equivalent Non-CFs
- 130 forests (65 CF and 65 Non-CFs) in hills and Terai along with their communities
- 1300 households clustered at community level. 85% of respondents are male and usually household “heads”

In Previous Work with Same Data …

- CF members view forest product distribution as more fair and equitable (JED, 2017)
- CFs have more biodiversity (PLOS One, 2018), but not more carbon (WD, 2018)
- CFs operate very differently than non-CFs and much better correspond to Ostrom's collective action design principles (in preparation).
- Forest collective action yields more carbon storage (FP&E, 2018)
- Group members who report doing more positive forest collective action behaviors have better quality community forests in terms of regeneration and possibly also trees/ha. (under revision)
- CF members more likely to attend meetings

Research Question: Do CFs and better forest quality yield mental health benefits?

VERY PRELIMINARY WORK

Given generally positive results, no reason to believe mental health of those outside the programme would be worse.

Simple T-Test for Equality of Means – CF vs. those outside the programme

- Compared to CF members, those outside the programme report they are…
  - More are able to concentrate ($P<0.05$)
  - playing a useful role in things ($P<0.01$)
  - able to face up to problems ($P<0.01$)
  - able to enjoy normal day-to-day activities ($P<0.10$)
  - thinking of themselves as worthless ($p<0.05$)
  - 6 measures no difference

Simple T-Test for Equality of Means – CF vs. those outside the programme

- Compared to CF members, those outside the programme report they are…
  - Less distressed (P<0.05)
  - Less upset (P<0.01)
  - Less guilty (P<0.05)
  - Stronger (P<0.05)
  - More alert (P<0.01)
  - Less nervous (P<0.05)
  - More attentive (P<0.05)
  - More active (P<0.05)
  - Less afraid (P<0.01)
  - Less inspired (P<0.05)
  - 10 measures no difference

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  - Less distressed (P<0.05)
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  - Less nervo 5)
  - More a (P<0.05)
  - Mo (P<0.05)
  - id (P<0.01)
  - nspired (P<0.05)
  - 10 measures no difference

Is this Program Stressing People Out???

Answer: Obviously, don't know. Need to pay proper attention to identification

- Next steps
  - Dig more into literature to better understand potential mechanisms Use genetic matching as in other papers to construct counter-factual
  - Use plot-level forest quality data as an indicator of "greenness" rather than NDVI
  - Consider distinction between CF membership and collective action as in WD (2018).
  - Heterogeneous effects by gender – 15% of respondents are women
  - Heterogeneous effects by ethnic group
  - Heterogeneous effects by hills vs. plains (CFs members much more likely to be in hills)