Diverse time trends in sexual behaviour after HIV diagnosis over 20 years follow-up

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Kalongo Hamusonde[1], Dunja Nicca[2], Huldrych F Günthard[3], Marcel Stöckle[4], Katharine EA Darling[5], Alexandra Calmy[6], Roger D Kouyos[3], Andri Rauch[1], Luisa Salazar-Vizcaya[1] and The Swiss HIV Cohort Study

[1]University Hospital of Bern, Bern, Switzerland, [2]University of Basel, Basel, Switzerland, [3]University Hospital Zurich, Zurich, Switzerland, [4]University Hospital Basel, Basel, Switzerland, [5]University of Lausanne, Lausanne, Switzerland, [6]University of Geneva, Geneva, Switzerland

BACKGROUND

- Diagnosis with HIV is often followed by change in sexual behavior[1].
- Pattern recognition methods have shed light on behavioral heterogeneity among HIV+ MSM [2].
- We sought to study sexual behaviour among persons recently diagnosed with HIV.

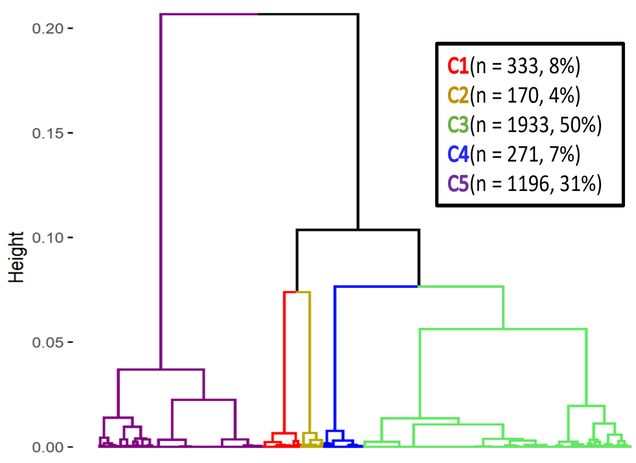
To do this, we

- Identified clusters defined by characteristics and self reported behaviour near HIV diagnosis
- Characterized and assessed differences and similarities for men who have sex with men (MSM) and heterosexual (HET) persons living with HIV (PLWH) behavioural changes over 20 years of follow-up.

METHODS

- Hierarchical principal component analysis inferred sexual behaviour clusters based on combinations of variables on sexual behaviour, non-sex related behaviour and socio-demographics at baseline[a].
- We then assessed cluster specific time-trends in the search for differences between MSM and HET.

Figure 1: Cluster Dendrogram denoting clusters 1 to 5: C1-C5



[a]Variables: Sexual partnership during last 6 months, sexual intercourse (anal or vaginal) with the stable partner, condom use with stable partner, HIV status of stable partner, occasional partners during last 6 months, suffered from depression, alcohol use, injection drug use, cannabis use, ethnicity, center of registration, registration date, age at registration, level of education at registration, sexual orientation (MSM or Heterosexual) and sex .

RESULTS

- We identified 5 distinct clusters (Figure 1 and Table 1).
- Consistent condom use decreased in both MSM and HET with stable partner (60% to 25% in MSM and 63 to 25% in HET) figure 2.
- Consistent condom use with occasional partner also declined for both (70% to 38% in MSM and 83% to 50% in HET).
- Clusters C1 and C4 comprising 15% of the study population had different trajectories of consistent condom use during follow-up (Figure 3).

CONCLUSIONS

→ After 20 years of follow up since HIV diagnosis, MSM and HET PLWH had similar decreasing trends in condom use with stable and occasional partners.

→ Behavioral clustering soon after HIV diagnosis was only marginally sensitive to sexual preference.

→ Differences in time-trends in sexual behavior between MSM and HET PLWH were limited to a small fraction of the study population.

Table 1: Study Population (n = 3,903)

	Cluster 1 n = 333 (8%)	Cluster 2 n = 170 (4%)	Cluster 3 n = 1,933 (50%)	Cluster 4 n = 271 (7%)	Cluster 5 n = 1,196 (31%)	Overall N = 3,903
Male sex	258 (77%)	87 (51%)	1,265 (65%)	154 (57%)	1,025 (86%)	**2,789 (72%)**
Mean Age at Registration (n, IQR)	46 (37-54)	38 (31-43)	40 (32-46)	37 (30-41)	39 (32-45)	**39 (32-46)**
Has stable partners in last 6 months	333 (100%)	170 (100%)	1,377 (71%)	271 (100%)	457 (38%)	**2,608 (67%)**
HIV status of stable partner						
HIV Positive	35 (10%)	0 (0%)	230 (12%)	122 (45%)	1,156 (97%)	**1,543 (40%)**
HIV Negative	298 (90%)	0 (0%)	1703 (88%)	148 (55%)	40 (3%)	**2189 (56%)**
Unknown HIV Status	0 (0%)	170 (100%)	0 (%)	1 (0.4%)	0 (0%)	**171 (4%)**
Condom use with Stable partner						
Always	322 (97%)	109 (64%)	1718 (89%)	0 (0%)	73 (6%)	**2,222 (57%)**
Sometimes	0 (0%)	27 (16%)	0 (0%)	271 (100%)	0 (0%)	**298 (8%)**
Never	11 (3%)	34 (20%)	215 (11%)	0 (0%)	1,123 (94%)	**1,383 (35%)**
Has occasional partners in last 6 months	116 (35%)	22 (13%)	143 (7%)	38 (14%)	861 (72%)	**1,180 (30%)**



Figure 2:
Proportion of the study population's overall trends of consistent condom use with stable partner during study period (1999 to 2021) after HIV diagnosis between men who have sex with men (msm) and heterosexuals (hetero) in the Swiss HIV Cohort Study (SHCS).

Sexual Preference
msm
hetero

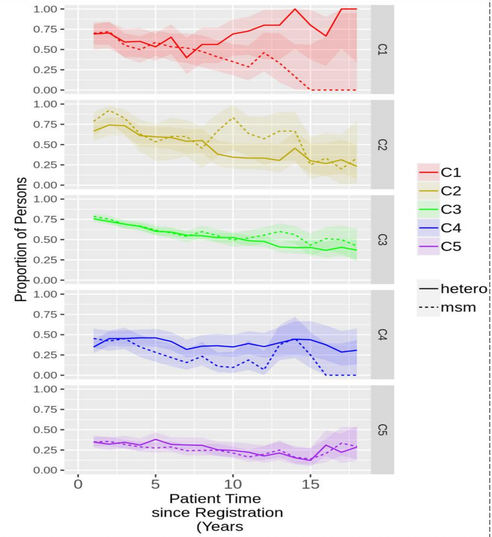


Figure 3:
Proportion of the study population trends from HIV diagnosis and 20 years of follow-up distributed by cluster between men who have sex with men (msm) and heterosexuals (hetero) in the Swiss HIV study cohort.

REFERENCES

1. P. M. Gorbach, M. Javanbakht, and R. K. Bolan, "Behavior Change Following HIV Diagnosis: Findings from a Cohort of Los Angeles MSM," *AIDS care*, vol. 30, no. 3, p. 300, Mar. 2018, doi: 10.1080/09540121.2017.1366415.
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Contact: Kalongo Hamusonde, Universitätsklinik für Infektiologie, Freiburgstrasse 18, 3010 Bern. Kalongo.Hamusonde@insel.ch: **Funding:** This study has been financed within the framework of the Swiss HIV Cohort Study, supported by the Swiss National Science Foundation (grant #201369 and grant #179567) by SHCS project #823 and by the SHCS research foundation . The data are gathered by the five Swiss University Hospitals, two Cantonal Hospitals, 15 affiliated hospitals and 36 private physicians. www.shcs.ch