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Characteristics defining perceived popularity among same-sex and opposite-sex peers

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Abstract

Objectives: The objective of this study was to compare the characteristics of adolescents and young adults (AYA) who perceive themselves as popular with AYAs who perceive themselves as unpopular vis-à-vis peers from same-sex, opposite-sex, or both.

Methods: Among a representative sample of in-school 15–24 year-olds students (n=5,179) who completed a self-administrated questionnaire, we measured self-perception of popularity, socio-demographic data, ease to make same/opposite-sex friends, emotional well-being, school variables, substance use, sensation seeking, self-perception of pubertal timing, and aggressive/violent behavior.

Results: Overall, our findings put forth that popularity was associated to easiness of making same/opposite-sex friends, emotional well-being, socio-economical background, sensation seeking behaviors, and alcohol misuse. Differences appeared between males or females.

Conclusion: Findings indicate that popularity remains a very important issue among this age group and should be a red flag in clinical assessment. Future research should explore whether feeling of unpopularity can be used as a marker of adolescent well-being and hence help identify those youths who might need help.

Keywords: adolescents; peers relations; popularity; well-being; young adults.

Introduction

Peer relationships develop throughout childhood [1] but being noticed and recognized by peers become more important at adolescence [2]. In early adolescence especially, popularity often becomes a priority over other personal goals [3]. Peer popularity has been defined as the extent to which individuals are socially salient and admired by their peers and serves as an indicator of social dominance and prestige in the peer group [4].

A whole area of research has explored associations between popularity and aggressive or norm-breaking behaviors among youths. Thus, adolescents perceived by peers as being more popular were more inclined to bully [5, 6], and to show aggressive [3, 4, 6–9] or dominant [4] behaviors. Moreover, aggressive and leadership behaviors seemed to be even stronger among popular adolescents who prioritized popularity over other social and personal goals in order to gain or maintain status [3]. Being qualified by peers as popular has also been found to be associated with higher odds of delinquency and depression [10], norm-breaking behaviors in general [6], and substance use, alcohol [11, 12] and smoking [13] in particular. It has been argued that these negative behaviors linked to popularity could be a way to close the maturity gap [14] or to defend and keep up a popular position [15].

Other areas of research have also shown that popular youth were more susceptible to peers influence contrarily to self-regulating youth [10] and that popularity had a possible negative impact on school performance [16]. However, little is known about what characterizes popular and unpopular youths, especially among young adults. Despite that these are well-known key times of peer-judgment and opinions; to our knowledge no literature has examined how much it is associated to overall well-being or ease to make same or opposite-sex friends. Given the differences in pubertal timing among adolescents, we do not know either if popularity is associated to self-perception of pubertal timing as being out-of-the-norm compared to peers.

Furthermore, most studies examining popularity have surveyed youths who nominated their peers that they viewed as popular [1, 3, 5, 7–9, 12, 13, 17, 18] or wanted to be associated and connected with [6] often by selecting peers

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from a roster of all the students from their grade [5, 11, 16, 19]. However, to our knowledge, only one study has asked youths about their perception of their *own* popularity (self-perception) and it was published in 1998 [4]. Indeed, studies that define popularity based on peer-evaluation compared to those who define it based on self-perception can possibly have different results as the angle of approach is different, therefore it appears important to examine the latter.

Finally, when examining popularity, studies have not distinguished whether it concerned same-sex versus opposite-sex peers. Only one reported study has differentiated between peer-popularity and romantic desirability/popularity with opposite-sex peers [18], but opposite-sex peer relationships do not necessarily imply romantic ones. There might be some ambiguity at those ages regarding placing more importance on same-sex or opposite-sex peers. However, to our knowledge, no research has examined whether one or the other can have more impact on their well-being or certain behaviors to enhance their popularity. Thus, the same- versus opposite-sex distinction needs to be examined to see if it differs accordingly.

Given these gaps in the literature, the objective of this study was to compare the characteristics of female and male adolescents and young adults (AYA) who perceive themselves as popular with AYAs who perceive themselves as unpopular vis-à-vis peers from the same-sex, opposite-sex, or both. We hypothesized that unpopularity among youths was associated with (1) more difficulty to make friends (because less prone to reach out to others); (2) poorer well-being (given the importance of peers at those ages); (3) poorer school performance (linked to a lower self-esteem); (4) less sensation-seeking behaviors (including substance use; as sensation-seeking might be a way to be popular); and (5) out-of-the-norm self-perception of pubertal timing (linked to feeling out of the norm in general). We did not produce any hypotheses regarding gender differences (of participants or peers) as this was exploratory given the lack of literature on this aspect.

Materials and methods

Data were drawn from the baseline wave (2014–2015 school year) of GenerationFree, a longitudinal study conducted in the canton of Fribourg, Switzerland, to assess the lifestyles of AYAs, among a representative sample of in-school 15–24 year-olds (78% of 15–19 year olds; 22% of 20–24 year olds; mean age for the total sample 18.2 years).

Students of all post-mandatory public schools (five high-schools and six professional schools) completed an anonymous web-based self-administrated questionnaire. In Switzerland, mandatory school goes commonly up to age 15. Afterwards, about one third of

adolescents follow a high-school track and two-thirds a vocational one. The latter corresponds to an apprenticeship where they work most of the week and attend classes at vocational schools only 1–2 days per week.

The total sample size consisted in 5,834 AYAs, from which 5,634 agreed to complete the questionnaire. Among them, 211 were not in the defined age range (15–24 years) and 244 did not complete the questionnaire reliably (meaning that they answered negatively to the final question “sincerely, do you think your answers are sufficiently honest to be used?”). As a result, the final sample consisted of 5,179 AYAs (56% females). The study protocol was approved by the Human Research Ethics Commission of the Canton of Vaud. More details about the study can be found elsewhere [20].

Measures

Dependent variable: The questionnaire included two items of *self-perception of popularity*: “Among same-sex/opposite-sex peers, I am very popular”. Four possible responses ranged from fully agree to fully disagree which were then dichotomized into “Agree” and “Disagree” for analyses. Respondents were divided into four groups: Those who perceived themselves as (1) popular with same-sex *and* opposite-sex peers (POP; $n=3,164$, 61.09%); (2) unpopular with same-sex *and* opposite-sex peers (UNPOP; $n=1,228$, 23.71%); (3) unpopular with same-sex peers only (UNPOPSame; $n=284$, 5.48%), and (4) unpopular with opposite-sex peers only (UNPOPOther; $n=503$, 9.72%).

Independent variables: *Socio-demographic data* were collected including age, gender, residence (rural/urban), place of birth (Swiss-born/foreign-born), family structure (parents living together/other), and perceived socioeconomic status (SES). Self-assessment of SES was determined using the European School Survey Project on Alcohol and Other Drugs (ESPAD) study [21] question: “Compared to the financial situation of other families in Switzerland, would you say that your family is ...” with seven possible answers ranging from “very well below average” to “very well above average” and trichotomized into “above average”, “average” and “below average”.

Participants were also asked about their *ease to make same- and opposite-sex friends*. Four possible answers ranged from “fully agree” to “fully disagree” which were then dichotomized into “Agree” and “Disagree” for analyses.

Given the importance of popularity in AYAs' lives, *emotional well-being* was measured using the WHO-Five Well-Being Index (WHO-5), whose validity in adolescents has been proven [22]. The WHO-5 index includes five items and each one is rated on a 6-point Likert scale ranging from 0 (= at no time) to 5 (= all of the time) [23]. Scores are added and a result below 13 out of 25 indicates poor well-being. Cronbach's alpha in the present study was 0.81.

Popularity being often at stake in the school setting, *school variables* were measured, including academic track (student/apprentice) and self-reported school performance (above average, average or below average student).

As popularity has been shown to be associated with *substance use* [11–13], we analyzed current smoking, cannabis use in the last 30 days, alcohol misuse (at least one episode of drunkenness) in the last 30 days, and other illegal drug use ever. Given that adolescents who consume substances often also adopt other risk behaviors, we controlled for *sensation seeking* during the past year. It was measured

on a 5-item scale developed on the basis of the work of Gniech et al. [24]. The scale ranged from 0 to 4, with higher scores indicating higher sensation seeking.

We measured *self-perception of pubertal timing* to prove our hypothesis that it can be associated with self-perception of popularity. Indeed, when puberty is perceived as advanced or delayed compared to peers it can have an impact on self-perception of being in the norm [25]. Hence participants were asked “If you think about the age at which you started your puberty, compared to other same-age youths, would you say that you were ...” with five possible answers ranging from “very much in advance” to “very much later” trichotomized into “advanced”, “on time”, and “delayed” for analyses.

Finally, literature has shown a strong association between *aggressive/violent behavior* and popularity [6, 8]. Therefore, violent behavior (physical harm towards an adult, carrying a weapon, using a weapon during a fight) and antisocial behavior (vandalism, theft, dealing, and setting fire to something) during the past year were evaluated and the three possible answers (“Never”, “1–2 times”, “3 or more times”) were dichotomized in ‘Never’ and ‘At least once’. We dichotomized answers considering that adopting such behaviors even once can already be a way to catch attention to increase popularity.

Statistical analysis

Statistical analyses were performed with STATA 13.0 (StataCorp, College Station, Texas). We used Chi-square test to compare

categorical variables, and one-way ANOVAs for continuous variables, with the four groups. Results are given as prevalence and means. All significant variables ($p < 0.05$) were included in a multinomial logistic regression using POP as the reference category. Data are presented as Relative Risk Ratios (RRR) with 95% confidence intervals (CI). Analyses were performed separately by gender to see if there were any differences.

Results

Females

For female AYAs, at the bivariate level, differences appeared in terms of academic track, SES, easiness to make same-sex or opposite-sex friends, emotional wellbeing, perceived pubertal timing as different than peers, smoking, alcohol misuse, cannabis and other illegal drug use, violent acts, and sensation seeking (Table 1).

At the multivariate level (Table 2), compared to the POP group, the UNPOP group was less likely to make same-sex and opposite-sex friends easily; the UNPOPSame group was less likely to make same-sex friends easily but more likely to make opposite-sex friends easily; and the contrary

Table 1: Bivariate results for FEMALES according to four categories of popularity.

	POP (n=1,293; 53.02%)	UNPOP (n=735; 30.16%)	UNPOPSame (n=179; 7.33%)	UNPOPOther (n=231; 9.48%)	p-Value
Age (mean ± SD)	18.42 ± 0.09	18.69 ± 0.15	18.94 ± 0.28	18.15 ± 0.24	NS
Academic track (apprentice)	48.68	44.87	58.17	32.27	<0.001
Residence (urban)	37.06	34.24	33.06	31.38	NS
Swiss-born (yes)	90.04	87.48	90.08	89.17	NS
SES					0.003
Above average	35.43	27.44	30.09	28.08	
Average	55.38	60.26	57.16	62.06	
Below average	9.19	12.3	12.75	9.85	
School performance					NS
Above average	27.06	25.49	27.8	26.97	
Average	67.49	70.15	65.09	68.08	
Below average	5.45	4.36	7.11	4.95	
Making same-sex friends easily (yes)	89.91	70.9	38.94	94.65	<0.001
Making opposite-sex friends easily (yes)	95.55	65.98	96.9	51.21	<0.001
Emotional well-being (good)	76.73	68.95	66.02	70.48	<0.001
Current tobacco use	37.68	27.86	47.14	23.61	<0.001
Alcohol misuse (last 30 days)	36.47	25.13	39.28	20.62	<0.001
Cannabis use (last 30 days)	16.57	10.25	18.14	8.92	<0.001
Drug use (ever)	8.89	6.06	15.01	3.54	<0.001
Puberty (perception compared to peers)					0.004
Advanced	33.65	31.01	38.68	24.5	
On time	53.06	52.22	43.84	56.82	
Delayed	13.29	16.77	17.49	18.68	
Violent acts (yes - last 12 months)	5.41	3.46	11.12	3.53	<0.001
Antisocial behaviors (yes - last 12 months)	11.26	8.66	13.98	8.94	NS
Sensation seeking (yes - last 12 months; mean)	2.41 ± 0.01	2.56 ± 0.02	2.39 ± 0.04	2.63 ± 0.04	<0.001

Table 2: Multivariate results for FEMALES according to four categories of popularity [POP as reference category].

	RRR* UNPOP (n=735; 30.16%)	p-Value	RRR* UNPOPSame (n=179; 7.33%)	p-Value	RRR* UNPOPOther (n=231; 9.48%)	p-Value
Age	0.98 [0.92:1.05]	NS	1.05 [0.96:1.16]	NS	0.97 [0.88:1.06]	NS
Academic track (apprentice)	0.95 [0.76:1.18]	NS	1.01 [0.70:1.45]	NS	0.65 [0.47:0.91]	0.011
Residence (urban)	0.86 [0.69:1.06]	NS	0.76 [0.54:1.08]	NS	0.71 [0.51:0.99]	0.048
Swiss-born (yes)	0.88 [0.64:1.21]	NS	1.32 [0.77:2.24]	NS	0.94 [0.58:1.53]	NS
SES						
Above average	0.76 [0.62:0.94]	0.015	0.89 [0.62:1.29]	NS	0.71 [0.51:0.99]	0.040
Average	REF		REF		REF	
Below average	1.21 [0.84:1.74]	NS	1.18 [0.69:2.01]	NS	1.09 [0.65:1.82]	NS
Making same-sex friends easily (yes)	0.44 [0.33:0.58]	<0.001	0.06 [0.04:0.09]	<0.001	4.95 [2.60:9.43]	<0.001
Making opposite-sex friends easily (yes)	0.13 [0.09:0.18]	<0.001	3.78 [1.49:9.61]	0.005	0.04 [0.03:0.06]	<0.001
Emotional well-being (good)	0.80 [0.64:1.02]	NS	0.78 [0.53:1.13]	NS	0.79 [0.56:1.11]	NS
Current tobacco use	0.81 [0.64:1.02]	NS	1.10 [0.76:1.60]	NS	0.94 [0.65:1.35]	NS
Alcohol misuse (last 30 days)	0.79 [0.63:0.99]	0.044	0.98 [0.68:1.43]	NS	0.64 [0.45:0.92]	0.016
Cannabis use (last 30 days)	0.79 [0.57:1.09]	NS	0.76 [0.45:1.27]	NS	0.83 [0.49:1.39]	NS
Drug use (ever)	0.87 [0.58:1.33]	NS	1.10 [0.65:1.86]	NS	0.67 [0.32:1.37]	NS
Puberty (perception compared to peers)						
Advanced	0.91 [0.73:1.13]	NS	1.09 [0.75:1.57]	NS	0.70 [0.50:0.99]	0.048
On time	REF		REF		REF	
Delayed	1.01 [0.76:1.35]	NS	1.45 [0.92:2.30]	NS	1.07 [0.70:1.63]	NS
Violent acts (yes - last 12 months)	0.67 [0.41:1.11]	NS	1.43 [0.80:2.56]	NS	0.97 [0.43:2.17]	NS
Sensation seeking (yes - last 12 months)	1.18 [1.03:1.36]	0.016	1.05 [0.84:1.31]	NS	1.24 [1.01:1.53]	0.042

Table 3: Bivariate results for MALES according to four categories of popularity.

	POP (n=1870; 68.27%)	UNPOP (n=492; 17.96%)	UNPOPSame (n=105; 3.84%)	UNPOPOther (n=272; 9.93%)	p-Value
Age (mean ± SD)	18.35 ± 0.09	18.47 ± 0.20	18.44 ± 0.54	17.94 ± 0.28	NS
Academic track (apprentice)	68.70	69.62	69.11	74.28	NS
Residence (urban)	35.31	35.98	35.05	35.70	NS
Swiss-born (yes)	86.78	85.03	91.15	91.79	NS
SES					<0.001
Above average	45.21	35.55	41.42	35.63	
Average	46.91	51.57	43.66	51.80	
Below average	7.88	12.88	14.92	12.57	
School performance					NS
Above average	29.44	28.25	28.06	28.69	
Average	64.71	62.95	60.88	63.55	
Below average	5.85	8.80	11.06	7.76	
Making same-sex friends easily (yes)	96.04	68.16	57.77	95.29	<0.001
Making opposite-sex friends easily (yes)	93.53	58.00	91.19	48.31	<0.001
Emotional well-being (good)	88.58	77.98	77.01	81.38	<0.001
Current tobacco use	43.02	31.33	45.48	38.95	<0.001
Alcohol misuse (last 30 days)	53.68	37.6	49.76	49.86	<0.001
Cannabis use (last 30 days)	24.91	20.14	10.80	27.64	0.009
Drug use (ever)	14.48	13.02	15.39	14.46	NS
Puberty (perception compared to peers)					<0.001
Advanced	27.90	28.28	35.78	21.7	
On time	59.26	51.27	40.18	56.69	
Delayed	12.84	20.45	24.04	21.56	
Violent acts (yes - last 12 months)	17.13	16.21	13.80	14.35	NS
Antisocial behaviors (yes - last 12 months)	27.12	19.32	30.63	26.45	0.021
Sensation seeking (yes - last 12 months; mean)	2.02 ± 0.01	2.32 ± 0.03	2.09 ± 0.07	2.24 ± 0.05	<0.001

appeared for the UNPOPOther group as they were more likely to make same-sex friends easily but less likely to make opposite-sex friends easily. Both UNPOP and UNPOPOther groups also had in common to be less likely to report an above-average SES and to misuse alcohol and more likely to be sensation seekers. Females from the UNPOPOther group were also less likely to report self-perceived advanced pubertal timing.

Males

For male AYAs, at the bivariate level, differences appeared for SES, easiness to make same-sex or opposite-sex friends, emotional wellbeing, perceived pubertal timing different than peers, smoking, alcohol misuse, cannabis use, anti-social behavior and sensation seeking (Table 3).

At the multivariate level (Table 4), the same results were found as for females for the different groups in easiness to make same-sex and opposite-sex friends. Compared to the POP group, the UNPOP group was also less likely to have an above average SES, to have a good emotional well-being, and to have misused alcohol in the past 30 days. Both the UNPOP and the UNPOPOther groups were more likely to be sensation seekers. As for the UNPOPSame group, they were less likely to have a good emotional well-being and to have used cannabis in the past 30 days. Compared to the POP group, males from UNPOPSame group were also more likely to have an advanced or delayed puberty perception. Those

of the UNPOP group were also more likely to have a perceived delayed puberty.

Discussion

Overall, our findings put forth three major groups of youths: 1) a small majority of females and a large majority of males felt popular; 2) about a 30% of females and 18% of males felt unpopular in general; and 3) about a 17% of females and a 14% of males felt unpopular either with same- or with opposite-sex peers. Moreover, feelings of popularity or unpopularity, whether among males or females, were associated to four main characteristics.

The first was that unpopular AYAs had lower odds of making same-sex and opposite-sex friends easily, confirming our first hypothesis. Logically, making friends less easily appears to be a strong marker of feeling popular. However, this association shifted when looking separately at those who felt unpopular with same-sex peers who made opposite-sex friends more easily and those who felt unpopular with opposite-sex peers who made same-sex friends more easily. We can hypothesize that peers may have negative judgments towards those included in the other group and therefore exclude them more easily.

Second, having a lower socio-economical background had a strong relation with feeling unpopular. This can be explained by the fact that coming from a higher SES can

Table 4: Multivariate results for MALES according to four categories of popularity [POP as reference category].

	RRR* UNPOP (n=492; 17.96%)	p-value	RRR* UNPOPSame (n=105; 3.84%)	p-Value	RRR* UNPOPOther (n=272; 9.93%)	p-Value
Age	1.02 [0.94:1.12]	NS	0.97 [0.82:1.13]	NS	0.88 [0.79:0.98]	0.027
Academic track (apprentice)	1.23 [0.89:1.71]	NS	1.18 [0.67:2.06]	NS	0.47 [1.00:2.16]	0.042
Residence (urban)	1.05 [0.79:1.40]	NS	0.95 [0.56:1.62]	NS	1.17 [0.82:1.67]	NS
Swiss-born (yes)	0.94 [0.63:1.39]	NS	1.41 [0.57:3.49]	NS	1.47 [0.80:2.71]	NS
SES						
Above average	0.76 [0.62:0.95]	0.012	0.90 [0.62:1.30]	NS	0.71 [0.51:1.00]	NS
Average	REF		REF		REF	
Below average	1.21 [0.84:1.74]	NS	1.16 [0.68:1.98]	NS	1.10 [0.66:1.85]	NS
Making same-sex friends easily (yes)	0.19 [0.12:0.30]	<0.001	0.04 [0.02:0.08]	<0.001	2.80 [1.21:6.46]	0.015
Making opposite-sex friends easily (yes)	0.17 [0.12:0.25]	<0.001	2.66 [0.91:7.72]	NS	0.06 [0.04:0.09]	<0.001
Emotional well-being (good)	0.59 [0.40:0.88]	0.019	0.49 [0.24:0.98]	0.093	0.66 [0.41:1.06]	NS
Current tobacco use	0.74 [0.54:1.02]	NS	1.43 [0.84:2.43]	NS	0.90 [0.62:1.30]	NS
Alcohol misuse (last 30 days)	0.63 [0.47:0.85]	<0.001	1.04 [0.62:1.75]	NS	0.90 [0.62:1.31]	NS
Cannabis use (last 30 days)	1.02 [0.69:1.51]	NS	0.21 [0.09:0.47]	<0.001	1.53 [0.98:2.36]	NS
Puberty (perception compared to peers)						NS
Advanced	1.22 [0.88:1.67]	NS	1.75 [1.00:3.04]	0.046	0.93 [0.62:1.40]	NS
On time	REF		REF		REF	
Delayed	1.69 [1.19:2.41]	<0.001	2.76 [1.40:5.44]	0.003	1.49 [0.96:2.31]	NS
Antisocial behaviors (yes - last 12 months)	0.73 [0.50:1.05]	NS	1.34 [0.68:2.63]	NS	0.77 [0.51:1.16]	NS
Sensation seeking (yes - last 12 months)	1.46 [1.23:1.73]	<0.001	1.06 [0.74:1.51]	NS	1.24 [1.00:1.55]	0.045

convey access to additional artifacts such as brand clothing, electronic devices, etc. that bring more prestige in the eyes of peers.

Third, our results showed that alcohol misuse was strongly associated with being popular. This association between popularity and alcohol misuse is consistent with other research [12, 13] and is probably a result of the socializing effect of this substance [26]. This result is of interest to show that either popular youth turn more towards alcohol use to maintain or raise their popularity, or those who consume alcohol feel more popular possibly because they access an adult substance and thus feel more mature [14]. Regarding other substances such as tobacco or cannabis, significant associations with feeling popular were found only at the bivariate level. Significance disappeared at the multivariate level which can be due to the fact that the relation between cannabis and popularity is hidden by relations with other substances. Regarding tobacco, it can also be due to the fact that tobacco has become poorly regarded [27]. However, just like alcohol, these substances could still be attractive to popular youth as a way to reach more popularity or maintain it, thus should be kept in mind.

Fourth, unpopular youths, whether male or female, were more likely to be sensation seekers. This appeared to be counterintuitive at first and challenged our fourth hypothesis. However, it can actually be explained by the fact that unpopular AYAs might adopt more sensation seeking behaviors in order to fit in to try to become popular. Indeed, research has shown that adolescents often take risks to increase their popularity in the eyes of their peers [6].

Differences according to gender also emerged which bring interesting nuances with regard to our hypotheses (second and fifth). Specifically, it is interesting to note that while more female than male AYAs felt unpopular, male AYAs appeared to be much more affected by their unpopularity in terms of their emotional well-being. This result should be considered with a lot of attention as males already have a tendency to under-report poor emotional well-being. Thus, unpopular males might be more affected in their well-being than thought so. Moreover, it appeared that poor emotional well-being was present among males who felt unpopular with same-sex peers. This may be explained by the fact that males put a lot of importance on having same-sex friends and on having a group of peers to hang out with [26]. They might be affected emotionally if they wish to develop these relationships but fail to do so. However, despite unpopularity being associated with emotional well-being, it did not seem to affect school performance, contrarily to what we presumed in our third hypothesis.

Another difference according to gender appeared regarding puberty timing perception. There was a strong association between males feeling unpopular and perceived pubertal delay. It is interesting to note that it was especially related to same-sex peers as puberty perception is probably based on same-sex comparisons. To explain this result, we hypothesized that those who perceive themselves as less physically mature might have more trouble being accepted in their group of peers. However, research on puberty timing perception is scarce and deserves further investigation.

On the contrary, on the female side, perceived pubertal timing outside of the norm was associated with feeling popular among other-sex peers. Indeed, females with a perceived advanced puberty also perceived themselves, as more popular probably because they felt overall more mature. It can also be that they hang out with older adolescents and are consequently set on a higher footing. This is comparable to research that has shown an association between early maturing girls and risk taking behaviors [28].

Our results regarding violent and antisocial behaviors differed from other studies, which generally found an association with being popular especially among boys [3, 7, 8]. Although this was true at the bivariate level, our multinomial results were significant neither for males nor for females. This could be explained by the fact that the instrument we used to measure violence or antisocial behavior might not be discriminating enough. Moreover, violence is generally not fashionable and might not necessarily arouse admiration or even approval from peers. This can also be put in light of what De Bryun et al. found: that adolescents considered as popular but not necessarily well-liked are more taken into aggressive behaviors compared to those considered as popular and well-liked and accepted [17].

The main strengths of this population-based study were to have examined self-perception of popularity, distinguished same-sex from opposite-sex perceived popularity, and analyzed popularity separately by gender. However, some limitations should be acknowledged. First, given the cross-sectional nature of the study, we cannot assess causality. Second, our data do not allow us to distinguish between online or offline popularity. Yet, the online and offline worlds being strongly linked [29], it is most probable that AYAs take both the online and offline into account when defining self-popularity. Third, we examined popularity among a large age-span (15–24 years) covering different life circumstances and levels of psychosocial development, and that might therefore have an impact on importance of popularity. However, we did control for age in our analyses, which minimizes its effect. Fourth, our data did not enable us to

distinguish between popular adolescents who are well-liked and those who are not, the latter having proven to have more negative outcomes [4, 17]. Thus future studies should use a more detailed definition of popularity distinguishing popular and well-liked vs. popular but disliked. This would allow for an in-depth description of popularity perception.

Several conclusions stem from this study. First, it should be noted that females perceived themselves more often as unpopular, but males were more affected in terms of their emotional well-being. Thus, popularity remains a very important issue among this age group and should be a red flag in clinical assessment. For instance, the question of self-perception of popularity should be asked in clinic when youths seem unhappy. In terms of prevention, it appears important to develop gender intervention programs in a context of increasing popularity and self-image concerns, especially in the era of social media. Second, substance use, especially alcohol, was associated with popularity and sensation-seeking was with unpopularity. Hence, it appears important to be vigilant on the one hand regarding these risk behaviors, and on the other that unpopular youths do not turn to substance use on top of sensation seeking behaviors in an attempt to become more popular.

Future research should explore whether feeling of unpopularity can be used as a marker of adolescent well-being and hence help identify those youths who might need help. Finally, future research could expand to not only look at popularity but also at their sense of belonging, meaning feeling embedded in and part of a group, which might be an accurate marker for peer relations.

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