

# Sexual Arousal Patterns of Autogynephilic Male Cross-Dressers

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**Abstract** Men's sexual arousal patterns have been an important window into the nature of their erotic interests. *Autogynephilia* is a natal male's paraphilic tendency to be sexually aroused by the thought or image of being a woman. Autogynephilic arousal per se is difficult to assess objectively, because it is inwardly focused. However, assessing sexual arousal patterns of autogynephilic males in response to external stimuli is also potentially useful. For example, there is substantial association between autogynephilia and *gynandromorphophilia* (GAMP), or sexual attraction to *gynandromorphs* (GAMs), colloquially "she-males." GAMP men's sexual arousal patterns in response to GAM, female, and male stimuli have recently been characterized. In the present study, we extended this understanding by comparing the sexual arousal patterns of autogynephilic male cross-dressers, GAMP men, heterosexual men, and homosexual men. Erotic stimuli included sexually explicit videos of men, women, and GAMs. Autogynephilic men were much more similar in their arousal patterns to heterosexual and GAMP men than to homosexual men. However, similar to GAMP men, autogynephilic men showed increased arousal by GAM stimuli relative to female stimuli compared with heterosexual men.

**Keywords** Autogynephilia · Gynandromorphophilia · Sexual arousal patterns · Sexual orientation · Paraphilia · Penile plethysmography

## Introduction

*Autogynephilia* is a natal male's paraphilic tendency to be sexually aroused by the thought or image of being a woman (Blanchard, 1989a). Autogynephilia has been a controversial topic, but this controversy has reflected sociopolitical concerns more than the quality of scientific evidence (Bailey & Triea, 2007; Dreger, 2008; Lawrence, 2004). There is little question that autogynephilia exists in some natal males and figures importantly in their lives. For example, autogynephilia is the motivation why some males cross-dress fetishistically (Bailey, 2003; Blanchard, 1989a, 1991; Lawrence, 2013). It is also part of the motivation why, rarely, natal males who are nonhomosexual (i.e., not exclusively attracted to men) physically transform their bodies into those of women (Blanchard, 1985, 1988, 1989b; Lawrence, 2004, 2007, 2013).

Autogynephilia is an unusual sexuality, conceptually speaking. Unlike sexual orientation as it is conventionally understood, autogynephilia is inwardly focused. For example, heterosexual men are sexually aroused by attractive, sexually mature women. In contrast, autogynephilic individuals, who include both natal males living as men as well as those in various stages of transitioning into women, are sexually aroused by the idea, fantasy, or enactment of themselves as women. To be sure, most autogynephilic individuals have the capacity to be attracted to others, typically women (Blanchard, 1992; Lawrence, 2013). But their autogynephilic feelings are not directed toward others.

The inner directedness of autogynephilia has made it more difficult to study compared with other, outwardly directed sexualities, even uncommon ones such as pedophilia. In particular, objective assessment of men's sexual preferences is usually accomplished by having men view different erotic stimuli and measuring their responses, usually via degree of penile erection (Janssen, 2002). Effective erotic stimuli include explicit pornography featuring only female actresses in order to assess *gynephilia*

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(sexual interest in women), or only male actors in order to assess *androphilia* (sexual interest in men) (Chivers, Rieger, Latty, & Bailey, 2004; Chivers, Seto, & Blanchard, 2007). It is practical and legal considerations, rather than conceptual limitations, that prevent researchers from using analogous stimuli to assess pedophilia. Due to the aforementioned considerations, milder stimuli such as non-explicit pictures and audiotaped narratives are typically used in this context (see Blanchard, Klassen, Dickey, Kuban, & Blak, 2001 for details on such stimuli). In contrast, designing erotic stimuli to appeal to autogynephilic males is not straightforward, practically or conceptually.

### Assessment of Autogynephilia

Autogynephilia has primarily been assessed using psychometric self-report instruments, such as the Core Autogynephilia Scale (Blanchard, 1989b) or the General Autogynephilia Scale (Hsu, Rosenthal, & Bailey, 2015). An exemplary item from the most commonly used scale, the Core Autogynephilia Scale (Blanchard, 1989b), is: “Have you ever become sexually aroused while picturing yourself having a nude female body or with certain features of the nude female form?” Extant scale items capture well the essence of autogynephilia and have led to important insights. For example, gender dysphoria in natal males who are nonhomosexual is associated with autogynephilia (Blanchard, 1993a, c; Blanchard, Clemmensen, & Steiner, 1987; Hsu et al., 2015), and gender dysphoria in natal males who are androphilic does not seem to be associated with autogynephilia (Blanchard, 1989b). As with all self-report instruments, however, a necessary caveat is that the accuracy of autogynephilia measures depends on respondents’ insightful and honest responding. For various reasons, such as the motivation to appear more socially desirable, autogynephilic individuals do not always evince insight and honesty when reporting on their autogynephilic feelings (Bailey, 2003; Blanchard, Clemmensen, & Steiner, 1985; Blanchard, Racansky, & Steiner, 1986; Lawrence, 2013). Genital assessment of male sexual arousal patterns can often detect sexual interests regardless of the insight and honesty of those being assessed (Bailey, 2009). This approach, however, requires that appropriate stimuli exist. To date, a single study has attempted to assess aspects of autogynephilia per se via genital arousal (Blanchard et al., 1986). We discuss this study, along with one other study of genital arousal patterns of autogynephilic individuals, in the next section.

### Sexual Arousal Patterns of Autogynephilic Individuals

Blanchard et al. (1986) assessed genital arousal in 37 heterosexual male cross-dressers and 10 non-cross-dressing heterosexual controls as they listened to audiotaped narratives describing cross-dressing and sexually neutral activities. The cross-dressers responded significantly more to the cross-dressing narratives than to the non-sexual narratives; the controls did not differ in their

response. Notably, even a subset of cross-dressers who denied sexual arousal during cross-dressing exhibited significant genital arousal listening to cross-dressing narratives. Blanchard et al. concluded that “only those causal hypotheses of heterosexual cross-dressing need be considered that can account, also, for the presence of [transvestic] fetishism” (p. 460). One such causal hypothesis has been successfully developed, and it has formed the theory of autogynephilia (Blanchard, 1989a). By this theory, all nonhomosexual gender dysphoria and transvestic fetishism (i.e., erotic cross-dressing) among natal males are due to autogynephilia.

Only one other prior study has focused on the genital arousal patterns of autogynephilic individuals (Chivers et al., 2004; Lawrence, Latty, Chivers, & Bailey, 2005). This study differed from that of Blanchard et al. (1986) in several respects. First, the autogynephilic individuals were natal males living as women who had undergone vaginoplasty, and thus their genital arousal was assessed via vaginal photoplethysmography rather than penile plethysmography. Second, the comparison group comprised androphilic natal males living as women who had also undergone vaginoplasty, rather than non-cross-dressing heterosexual males. Third, the stimuli were not designed to assess autogynephilia, but rather, interest in adult men versus adult women (i.e., androphilia vs gynephilia). The study was small, including only 6 autogynephilic and 5 androphilic transwomen. Nevertheless, relative genital arousal by male versus female stimuli perfectly discriminated the groups, with every autogynephilic transwoman responding more to female than to male stimuli, and every androphilic transwoman responding in the opposite pattern. Thus, considering relative attraction to men versus women, autogynephilic individuals were predominantly gynephilic. This is consistent with Blanchard’s (1992) view that autogynephilia is a form of misdirected gynephilia.

Clearly, existing data concerning sexual arousal patterns of autogynephilic individuals are sparse. Moreover, because the two existing studies focus on different things—one (Blanchard et al., 1986) on arousal by autogynephilic stimuli, and the other (Chivers et al., 2004; Lawrence et al., 2005) on arousal by male versus female stimuli—it is not even possible to evaluate their consistency with each other.

### Autogynephilia and Gynandromorphophilia

Recently, we have conducted two studies of *gynandromorphophilia* (GAMP), or sexual attraction to *gynandromorphs* (GAMs), colloquially “she-males” (Hsu, Rosenthal, Miller, & Bailey, 2016; Rosenthal, Hsu, & Bailey, in press). GAMs possess female-typical physical characteristics such as breasts while retaining a penis. Using independent samples, both of our studies showed that GAMP is appreciably associated with self-reported autogynephilia. For example, in the second, larger study (an Internet survey; Rosenthal et al., in press), GAMP men were nearly a standard deviation higher than heterosexual

male controls on the Core Autogynephilia Scale (Blanchard, 1989b). This association is noteworthy because there is no obvious reason why it should exist.

Our other study of GAMP compared the genital and subjective sexual arousal patterns of GAMP, heterosexual, and homosexual men, who viewed erotic stimuli featuring GAMs, women, and men (Hsu et al., 2016). GAMP men's arousal patterns were much more similar to heterosexual men's than to homosexual men's. Indeed, with respect to relative arousal by female versus male stimuli, the two groups were indistinguishable. The lone difference between heterosexual and GAMP men's arousal patterns concerned their relative arousal by GAM versus female stimuli. More specifically, heterosexual men were much less aroused by GAM stimuli than by female stimuli. In contrast, GAMP men were similarly aroused by GAM and female stimuli.

Because of the correlation between autogynephilia and GAMP, one obvious question concerns the similarity of the sexual arousal patterns of autogynephilic and GAMP men when viewing GAM erotic stimuli as well as conventional male and female erotic stimuli. This question motivated the present study.

## Method

### Participants

Autogynephilic male cross-dressers were recruited using advertisements placed in stores, nightclubs, and Internet forums that catered to male cross-dressers in the Chicago area. The advertisements contained links to an online eligibility questionnaire verifying that potential participants had cross-dressed at least once in the past year and found such an act to be sexually arousing to any degree (i.e., had transvestic fetishism). This would indicate autogynephilia, according to Blanchard's (1989a) theory. Potential participants thus reported the average frequency that they cross-dressed in the past year (1 = *never* to 7 = *daily*) and the degree to which they found cross-dressing to be sexually arousing (i.e., transvestic fetishism; 1 = *not at all* to 5 = *extremely*).

The resulting sample included 27 autogynephilic male cross-dressers (hereafter, simply referred to as autogynephilic men). Although our inclusion criteria required only one instance of cross-dressing in the past year, 74.1 % of autogynephilic men reported cross-dressing at least once a week, on average ( $M = 5.26$ ,  $SD = 1.40$ ). They also reported a high average degree of transvestic fetishism ( $M = 4.11$ ,  $SD = 1.19$ ). Consistent with their transvestic fetishism, autogynephilic men reported a high average degree of autogynephilia ( $M = 6.44$ ,  $SD = 2.47$ ) on the 8-item, sum-scored Core Autogynephilia Scale (Blanchard, 1989b), although two denied any autogynephilia on this measure despite reporting arousal from cross-dressing.

The comparison groups of GAMP, heterosexual, and homosexual men were recruited via similar advertisements on personal

lists of a Chicago-area Internet website for men seeking sexual encounters with GAMs, women, or men, respectively. These advertisements contained links to online eligibility questionnaires that verified sexual interest in GAMs, women, and men, respectively. Data from these three groups of men are reported in our recent article (Hsu et al., 2016), which also includes further details about their recruitment and inclusion criteria. In total, the sample comprised 27 autogynephilic men ( $M$  age = 45.93 years,  $SD = 10.29$ ), 24 GAMP men ( $M$  age = 34.46 years,  $SD = 11.52$ ), 21 heterosexual men ( $M$  age = 35.00 years,  $SD = 14.28$ ), and 21 homosexual men ( $M$  age = 32.00 years,  $SD = 6.52$ ). The men's age differed among the groups, with autogynephilic men significantly older than each of the other three groups,  $ps < .01$ . The three other groups were not significantly different from each other. Differences in age between autogynephilic men and the other three groups likely resulted from autogynephilic men being recruited differently from the other men, who were all recruited from advertisements on the same website. Furthermore, autogynephilic men were significantly higher than GAMP men ( $M = 2.88$ ,  $SD = 3.47$ ), heterosexual men ( $M = 0.35$ ,  $SD = 0.99$ ), and homosexual men ( $M = 0.06$ ,  $SD = 0.24$ ) on the Core Autogynephilia Scale (Blanchard, 1989b), with GAMP men also significantly higher than both heterosexual and homosexual men,  $ps < .01$ . The same pattern of results was found for cross-dressing frequency and transvestic fetishism, with autogynephilic men significantly higher than the other groups on both, and GAMP men also significantly higher than heterosexual and homosexual men on transvestic fetishism but not cross-dressing frequency,  $ps < .01$ . The sample sizes were not specified in advance; rather, they resulted from the combination of funds available for the research and the difficulty in recruiting both autogynephilic and GAMP men.

### Measures

Participants in each group viewed nine 3-min films with audio, which included two neutral and seven erotic. The neutral films featured nature scenery accompanied by soothing music. The erotic films featured pairs of individuals engaged in sexually explicit interactions involving oral and penetrative sex: two with male actors only (male stimuli), two with female actors only (female stimuli; the penetrative sex was digital), and three including GAMs (GAM stimuli). The latter feature a GAM and a man, a GAM and a woman, and a GAM with another GAM. These stimuli, in addition to their limitations, are discussed at greater length in our recent article concerning sexual arousal patterns of GAMP men (Hsu et al., 2016).

Genital arousal was assessed using an indium-gallium strain gauge that measured changes in the circumference of the penis. Subjective arousal was assessed at the end of every stimulus clip on a scale from 0 (*no sexual arousal*) to 10 (*extremely sexually aroused*).

## Data Analysis

Our design comprised a mixture of both between-subjects and within-subjects effects. Furthermore, there are more than two levels of the within-subjects variable (i.e., type of stimuli), potentially complicating the analyses. When there are only two levels, one can simply create a difference score between them to be analyzed as the dependent variable (Maxwell & Delaney, 2004). We employed a regression approach to analyzing the data. The particular approach is that of Judd and Kenny (2010), among others (e.g., Rosenthal & Rosnow, 1985). The approach that we have chosen is superior to older, more conventional methods in the following respects: First, it allows, and indeed requires, targeting of particular effects of interest, rather than beginning with an overall (i.e., omnibus) test across all effects. Second, it is relatively straightforward and allows one to avoid abstruse approaches, including multivariate analysis of variance (MANOVA) and Greenhouse-Geisser corrections.

In order to represent the four groups—homosexual, heterosexual, GAMP, and autogynephilic—we created three orthogonal between-groups contrasts, entered simultaneously as predictors. In doing so, we focused on the most important differences: The first contrasted the homosexual group with the other three, the second contrasted the heterosexual group with the autogynephilic and GAMP groups, and the third contrasted the autogynephilic and GAMP groups.

The approach we used also involved the creation of weighted difference scores to be used as dependent variables, called “within-groups contrasts.” The within-groups contrasts, similar to the between-groups contrasts, are constructed to be orthogonal to each other (and thus to provide independent information). Because there were three repeated measures of genital arousal by erotic stimuli for each group (i.e., arousal by GAM, female, and male stimuli), we created two orthogonal within-groups contrasts as weighted differences of the repeated measures (genital arousal by the various stimuli): the first contrasted arousal by the male stimuli with arousal by the other two types of erotic stimuli and hence was equal to half the difference between arousal by the male stimuli and the average of arousal by the GAM and the female stimuli. (The halving of the difference ensures that the regression coefficient is directly interpretable as the relevant difference.) The second contrasted arousal by the GAM stimuli with arousal by the female stimuli, and it was computed as half the difference between arousal by the GAM stimuli and arousal by the female stimuli. We created two analogous within-groups contrasts for the subjective arousal data, for a total of four within-groups contrasts.

Finally, we regressed each within-groups contrast on the complete set of three between-groups contrasts. Thus, to analyze the genital arousal data, we conducted two multiple regressions: one using the first within-groups contrast as the dependent variable and one using the second within-groups contrast as the dependent variable. To analyze the subjective arousal data, we conducted two precisely analogous analyses. The resulting regression coefficients

reveal the degree to which a within-groups contrast changes with specific between-group contrasts. For example, consider the multiple regression using the within-subjects contrast between arousal by the male stimuli and arousal by the other erotic stimuli as the dependent variable. The partial regression coefficient for the first between-subjects contrast (between the homosexual group and the other groups) is interpreted as the mean difference in arousal by the male stimuli versus the other stimuli between homosexual men and men in the other groups. We expect this coefficient to be positive, indicating that on average, homosexual men are more aroused by the male stimuli relative to the GAM and female stimuli compared with heterosexual, GAMP, and autogynephilic men.

As in our recent study of sexual arousal patterns of GAMP men (Hsu et al., 2016), we first standardized values for genital and subjective arousal before conducting analyses, allowing the resulting regression coefficients to be interpreted as standardized effect sizes. More specifically, for genital arousal data, we subtracted each participant’s mean arousal by the neutral stimuli from that by each of the three types of erotic stimuli (in order to control for baseline differences in arousal), computed the global standard deviation of baseline-controlled arousal across all participants and all stimuli, and divided the baseline-controlled arousal data by this global standard deviation. The resulting standardized values for genital arousal were then used to create within-subjects contrast variables, which served as the dependent variables in the multiple regressions. This exact same procedure was repeated for the subjective arousal data.

### Participant Exclusion Criteria

Following our previous studies of sexual arousal patterns (e.g., Chivers et al., 2004; Hsu et al., 2016), we excluded genital arousal data from participants who did not respond adequately to the stimuli, on the basis of two response criteria. First, participants’ ipsatized (i.e., within-subjects standardized) genital arousal by at least one type of erotic stimuli (GAM, female, or male) must exceed that by the neutral stimuli by half a standard deviation or more. We ipsatized scores by subtracting participants’ mean genital arousal by all stimuli from their mean arousal by each type of stimuli and then dividing by the standard deviation of arousal across stimuli. Second, baseline-controlled genital arousal (measured as the difference in mean genital arousal by one type of erotic stimuli and the neutral stimuli) must exceed 2 mm for at least one type of erotic stimuli.

Using these criteria, genital responding rates were as follows: 59.3 % (16/27) for autogynephilic men, 95.8 % (23/24) for GAMP men, 71.4 % (15/21) for heterosexual men, and 81.0 % (17/21) for homosexual men. These response rates differed significantly across the groups, Fischer’s exact test,  $p = .015$ . Excluding autogynephilic men, the response rates did not significantly differ across the other three groups,  $p = .077$ , indicating that autogynephilic men were less likely to have adequate genital response to the stimuli. However, this

lower response rate was likely due to the fact that autogynephilic men tended to be older, rather than to the fact that they were autogynephilic. Consistent with this explanation, after excluding participants from each group who did not meet genital response criteria, men's age no longer significantly differed across all four groups,  $p = .051$ , although it remained similar for each group. Autogynephilic men also remained high on cross-dressing frequency, transvestic fetishism, and autogynephilia, still differing significantly on each from the other three groups,  $ps < .01$ .

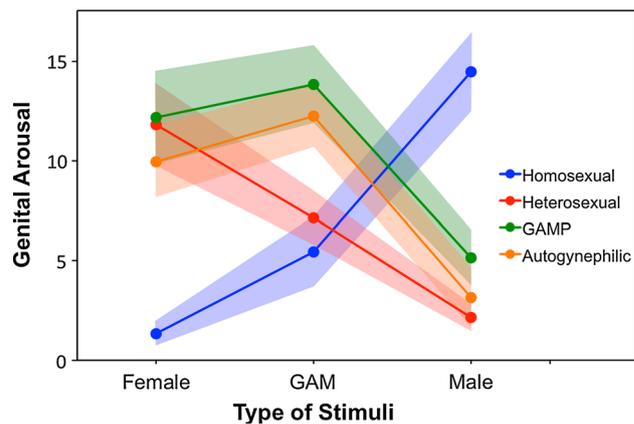
We note here that two additional participants, one heterosexual and one homosexual, were also excluded from analyses of genital arousal data due to mechanical issues with the gauge (e.g., reading impossibly high changes in the circumference of the penis), rather than to a failure to respond adequately to stimuli. Thus, in the following section, we report on genital arousal data from a sample size of 69, which included 16 autogynephilic, 23 GAMP, 14 heterosexual, and 16 homosexual men. We report on subjective arousal data from a sample size of 93, which included 27 autogynephilic, 24 GAMP, 21 heterosexual, and 21 homosexual men.

## Results

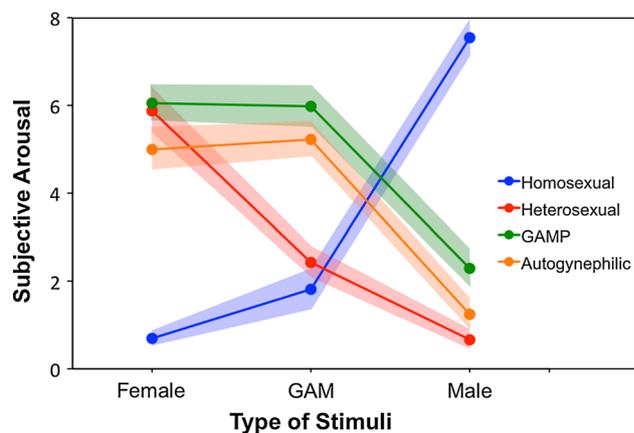
Figure 1 presents the genital arousal patterns for the four groups, and Fig. 2 presents the subjective arousal patterns. The associated regression coefficients for analyses of genital and subjective arousal data are shown in Tables 1 and 2, respectively. The genital and subjective arousal results are similar, with identical patterns of direction and statistical significance. Thus, we elucidate and refer to them simultaneously when discussing "arousal" for the remainder of the article.

The difference between arousal by the male stimuli and arousal by the other erotic stimuli (i.e., the first within-subjects contrast) was significantly larger for homosexual men than for men in the other groups, on average. Furthermore, neither of the other between-groups contrasts showed significant differences on this dependent variable. Thus, we found no evidence that heterosexual men differed from GAMP and autogynephilic men with respect to their relative arousal by the male versus the GAM and female stimuli; nor did GAMP and autogynephilic men differ from each other.

The difference between arousal by the GAM stimuli and arousal by the female stimuli (i.e., the second within-subjects contrast) was significantly larger for homosexual men compared with the three other groups, on average. GAMP and autogynephilic men were also significantly higher on this contrast variable compared with heterosexual men. GAMP and autogynephilic men, however, did not differ from each other. Thus, GAMP and autogynephilic men showed similarly increased arousal in response to the GAM stimuli relative to the female stimuli, compared with heterosexual men. It is important to note, however, that GAMP and autogynephilic men were not significantly more aroused by GAM stimuli relative to



**Fig. 1** Patterns of baseline-controlled genital arousal by the different types of erotic stimuli, separated by participant group. Shaded regions represent standard errors



**Fig. 2** Patterns of raw subjective arousal (i.e., in units from 0 = no sexual arousal to 10 = extremely sexually aroused) by the different types of erotic stimuli, separated by participant group. Shaded regions represent standard errors

female stimuli except in comparison with heterosexual men (see Figs. 1, 2). It was heterosexual men's lower response to GAM stimuli relative to female stimuli that led them to differ from GAMP and autogynephilic men, not the latter groups' higher response to GAM stimuli over female stimuli.

## Discussion

Our analyses revealed two primary findings regarding the sexual arousal patterns of autogynephilic men. The first was that with respect to the stimuli we included (i.e., GAM, female, and male), autogynephilic men's arousal patterns were similar to heterosexual men's and quite different from homosexual men's. The second was that to the extent that autogynephilic men's arousal patterns differed from heterosexual men's, they did so in a manner identical to GAMP men's: arousal by GAM stimuli was increased relative to arousal by female stimuli.

**Table 1** Multiple regression results for analyses of genital arousal data

Between-subjects contrast	Within-subjects contrast					
	Arousal by male versus other erotic stimuli			Arousal by GAM versus female stimuli		
	Regression coefficient	95 % CI	<i>F</i> (1, 65)	Regression coefficient	95 % CI	<i>F</i> (1, 65)
Homosexual versus other men	0.99***	[0.78, 1.21]	83.33	0.23*	[0.01, 0.45]	4.34
GAMP and autogynephilic versus heterosexual men	-0.03	[-0.27, 0.21]	0.07	0.35**	[0.11, 0.59]	8.55
Autogynephilic versus GAMP men	-0.01	[-0.25, 0.24]	0.00	0.03	[-0.22, 0.28]	0.07

*N* = 69 (autogynephilic men: *n* = 16, GAMP men: *n* = 23, heterosexual men: *n* = 14, homosexual men: *n* = 16)

\*  $p < .05$ , \*\*  $p < .005$ , \*\*\*  $p < .0001$

**Table 2** Multiple regression results for analyses of subjective arousal data

Between-subjects contrast	Within-subjects contrast					
	Arousal by male versus other erotic stimuli			Arousal by GAM versus female stimuli		
	Regression coefficient	95 % CI	<i>F</i> (1, 89)	Regression coefficient	95 % CI	<i>F</i> (1, 89)
Homosexual versus other men	1.55***	[1.39, 1.71]	375.12	0.34**	[0.17, 0.52]	15.57
GAMP and autogynephilic versus heterosexual men	-0.05	[-0.21, 0.12]	0.33	0.55***	[0.37, 0.73]	35.91
Autogynephilic versus GAMP men	-0.02	[-0.20, 0.16]	0.06	0.05	[-0.15, 0.24]	0.22

*N* = 93 (autogynephilic men: *n* = 27, GAMP men: *n* = 24, heterosexual men: *n* = 21, homosexual men: *n* = 21)

\*\*  $p < .0005$ , \*\*\*  $p < .0001$

With respect to arousal patterns, the similarity of autogynephilic men to heterosexual men is consistent with the idea that autogynephilia is a type of misdirected heterosexual attraction, albeit one that complicates and competes with typical heterosexual attraction to women on the outside (Blanchard, 1992; Lawrence, 2013). The similarity of autogynephilic men to GAMP men especially is predictable, given the overlap between autogynephilia and GAMP that had previously been found (Hsu et al., 2016; Rosenthal et al., in press).

Reasons for the overlap between autogynephilia and GAMP remain less clear, however. Why should men sexually aroused by the idea of being a woman be especially attracted to GAMs? One potential clue is the phenomenon of partial autogynephilia (Blanchard, 1993b; Lawrence, 2013). Although some autogynephilic males fantasize about being a completely anatomically typical woman, others fantasize about being only a partially anatomically typical woman. The most common of such sexually arousing images among the latter is to be a woman with breasts but also a penis: a GAM, in other words. Partial autogynephilia may explain the association of GAMP with autogynephilia because some men are sexually aroused by the idea of being the individuals to whom they are attracted (Freund & Blanchard, 1993). Autogynephilic males, for instance, are sexually aroused by the idea of being the women to whom they are attracted, and

thus perhaps those specifically with partial autogynephilia are sexually aroused by the idea of being the GAMs to whom they are attracted.

This potential explanation for the overlap between autogynephilia and GAMP would be supported if autogynephilic men with GAMP were especially likely to have partial autogynephilic fantasies. Among our present sample of 27 autogynephilic men, all but three reported GAMP, and their arousal patterns were similar to those of GAMP men. Roughly half (*n* = 12) also endorsed an item that assessed partial autogynephilia with the following question: "Would your ideal female self have a penis (i.e., look like a shemale)?" If a sample of autogynephilic males without GAMP could be recruited, one could test whether their arousal patterns were similar to those of the current autogynephilic sample, which was mostly GAMP. Furthermore, they could be tested on the extent to which they have partial autogynephilic fantasies, compared with autogynephilic males with GAMP.

Alternatively, perhaps both autogynephilia and GAMP are manifestations of the same underlying (and as yet unknown) cause. In this case, GAMP might simply comprise a phenomenon that is especially likely among autogynephilic males, with the same being true of autogynephilia among GAMP men. This possibility would be somewhat supported if autogynephilic males with GAMP were not especially likely, compared with other autogynephilic males, to

report partial autogynephilia. We are unable to ascertain this in the present study, given that our autogynephilic sample was both small and almost entirely GAMP. Results from a recent survey (Rosenthal et al., in press) suggested that GAMP men were elevated in some paraphilic interests compared with a control group of heterosexual men without GAMP, especially in transvestic fetishism (an indicator of autogynephilia), fetishism, and masochism. Perhaps these interests, in addition to autogynephilia and GAMP, comprise a general paraphilia factor reflecting as yet unknown developmental causes. Or perhaps simply because GAMPs instantiate the transition from male to female, they tend to be arousing for autogynephilic males, who fantasize about being or becoming women. The present study cannot begin to distinguish these possibilities, but we hope that it may motivate future relevant work.

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#### Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no potential conflicts of interests related to the study.

**Ethical Standards** All research methods and recruitment strategies were approved in accordance with the ethical standards of Northwestern University's Institutional Review Board for research involving human participants.

**Informed Consent** Informed consent was obtained from all participants included in the study.

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