

Original Article

Gender Expression among Transgender Women in Japan: Support Is Needed to Improve Social Passing as a Woman

Michiyo Furutani^{a*}, Zhou Yu^a, and Mikiya Nakatsuka^{a,b}

^aGraduate School of Health Sciences, Okayama University,

^bDepartment of Obstetrics and Gynecology and Gender Clinic, Okayama University Hospital, Okayama 700-8558, Japan

Gender expression is important for transgender women to improve their social passing as women. Herein, a questionnaire about the status of gender expression and support needs was distributed to 54 transgender women aged 17-71 in Japan. Most of the respondents noted that they had found it relatively difficult to handle physical changes and weight gain due to hormone treatment. They also found it difficult to enact and sustain practices such as a feminine use of voice and to use women-only services, whereas practicing and continuing with routine skin and hair care and feminine mannerisms were relatively easy for them. In the questionnaire regarding the support for gender transitioning, many items showed only a small percentage of the transgender women had received the support that they were looking for, and most of their needs for support were not addressed. Some of the factors that increased the respondents' needs and achievement of gender expression as women included estrogen treatment, sex reassignment surgery, and living as a woman; these aspects met their support needs as well. Gender support professionals need to coordinate and collaborate with specialists in areas such as nutritional guidance and voice training to enable transgender women to improve the extent to which they can socially 'pass' as women.

Key words: transgender, gender expression, social passing as a woman, real life experience, gender transition

Gender dysphoria (GD) is a condition in which an individual experiences distress or discomfort because there is a mismatch between their expressed/experienced gender and their assigned gender [1]. There are diverse types of GD, and they can be categorized into the GD experienced by transgender women, who are alternatively referred to as male to female transgender (MTF), whose assigned gender is male and whose expressed/experienced gender is female, and the GD experienced by transgender men, also referred to as female to male transgender (FTM), whose assigned gender is female and whose expressed/experienced gender is male [2]. The estimated numbers of persons

experiencing GD vary widely by the era when the estimation was conducted, the country and region according to differences in cultural and economic factors, the potential access to medical intervention, and research methodologies [3]. In Japan, based on the statistics of patients at medical organizations, the number of individuals experiencing GD is thought to be approx. 29,000 people, of which ~9,000 are transgender women and ~20,000 are transgender men [4]. A notable characteristic in Japan is the high percentage of transgender men compared to transgender women, which is the opposite of Western Europe. It has been posited that this is because of the challenges of social adaptation in Japan for transgender women, the high barriers to gen-

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*Corresponding author. Phone: +81-86-235-6895; Fax: +81-86-235-6895
E-mail: phc52tpz@s.okayama-u.ac.jp (M. Furutani)

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der transition, and the difficulties surrounding coming out as a woman [3].

With regard to the performance of sex reassignment surgery (SRS), which is an irreversible operation, individuals with GD must provide informed consent. It is thus considered important for individuals with GD to spend at least a year continuously acquiring real-life experience (RLE) of social adaptation to their expressed/experienced gender [5,6]. Further, because of the unease they experience when unable to perform their expressed/experienced gender roles in society [7], many transgender women opt to acquire RLE even when they are not intending to undergo SRS. Existing research on RLE cites several scenarios in which transgender individuals face difficulties in being emotionally open with people in their daily lives [8] as well as in which individuals feel socially isolated and lonely after their physical gender transition [9]. These struggles with RLE can be alleviated by support from family, friends, and people with similar experiences [10,11].

Employment is also an important factor for individuals to lead an independent life while bearing the costs of gender transition treatment. However, many cases of difficulties in finding employment after transitioning to the expressed/experienced gender have also been reported [12,13]. The extent to which transgender individuals are socially accepted as their expressed/experienced gender—*i.e.*, the extent to which their external appearance matches that of their expressed/experienced gender and is accepted as such by others—is an important factor for people with GD to find both employment and acceptance from others.

Compared to transgender men, for whom testosterone treatment brings about a fairly rapid masculinization of appearance (*e.g.*, lower voice pitch and beard growth), the typical masculine characteristics of transgender women (*e.g.*, low-pitched voice, dense body hair, and angular foreheads and jawlines) do not change in response to estrogen treatment. Therefore, many transgender women tend to be perceived as their assigned (male) gender even after SRS [10]. Having RLE in an environment in which the expressed/experienced gender is not appreciated increases the possibility of exposure to discrimination and criticism, leading to high risks of psychological pain and depression for transgender women [14,15].

The extent to which transgender women are socially accepted as women is therefore important when they are

going through RLE. However, there is almost no research on the gender expression and practical experience required to improve the level of social acceptance of transgender women. The present study surveyed transgender women in Japan to determine (1) their actual status and (2) their support needs for gender expression as women, both of which significantly influence the extent to which they are accepted as women (*i.e.*, their social gender transition). Effective methods to support the lifestyle of transgender women are also discussed.

Subjects and Methods

Subjects. From December 2014 to June 2016, an anonymous self-administered questionnaire was distributed to 70 individuals with GD in Japan whose assigned gender was male. They were among the patients at University A's gender clinic and respondents in a GD discussion group. The questionnaires were collected in a box at the gender clinic or by post from the discussion group respondents. There was a total of 61 respondents (87.1% response rate). Of these, 54 respondents were included in the study, and seven respondents who did not self-identify as women in a sustained manner were excluded.

The questionnaire included items about the respondent's basic attributes, treatment status, lifestyle status as a woman, needs and practical experiences of gender expression as a woman in daily life, and support needs. The questionnaire items were based on autobiographical material collected from transgender women and on the results of a preliminary interview survey on the experiences of two transgender women. The questions regarding the needs and experiences of gender expression as women covered 6 categories: handling body shape, handling weight gain, skin and hair care, physical posture and behavior, language and voice, and use of public facilities. Each of these questions was further divided into 2-10 subcategories on the specific gender expression therein. The response options with regard to the need for implementing each of the items were either "I need to" or "I don't need to." For an "I need to" response, three sub-options were offered in order to gain an understanding of the respondent's practical experiences and difficulties: (1) in cases in which the respondent had current practice or experience, "I do it" was an available option; (2) in cases in which the prac-

tice was interrupted due to difficulties along the way, "I did it, but I stopped because it was too difficult" could be chosen; and (3) in cases in which the respondent was not able to practice because of some circumstances or difficulties, "I don't do it" was a potential answer.

The questions regarding the respondent's need for support for social gender transition and the questions regarding the respondent's experiences of receiving support were designed separately to determine the type of support that the respondent felt was needed in order to improve the level of social acceptance as a woman, and to determine the type of support that the respondent was currently receiving or had received. In addition, 10 options of support corresponding to 6 categories regarding the needs and experiences of gender expression as women were set for each of these questions.

Statistical analysis. The responses to the questionnaire were examined with Fisher's exact test, using SPSS ver. 24 software (Chicago, IL, USA). Probability (p) values < 0.05 were considered significant.

Compliance with ethical standards. This study was approved by the Okayama University Graduate School of Health Sciences Committee on Ethics (No. D13-04). We obtained informed consent for participation and data publication from each subject.

Results

The respondents' background. With regard to their expressed/experienced gender, the 54 questionnaire respondents were all women, aged 45 ± 12.6 years (mean \pm SD; range 17-71 years). Their past treatment experience included psychiatric consultation (77.8%), estrogen treatment (92.6%), SRS (46.3%), and other surgery (14.8%). The SRS included (i) testes removal only; (ii) testes removal and penis amputation; and (iii) testes removal, penis amputation, and vaginoplasty. Other surgeries included breast enlargement surgery, thyroid cartilage reshaping, and/or facial feminization (Table 1). In addition, 24.0% of the

Table 1 Background of the participants

Age (years)	45.5 \pm 12.6 [17-71] (mean \pm S.D. [range])
Expressed/Experienced gender	
Female	100% (54/54)
Past treatment experience	
Psychiatric consultation	77.8% (42/54)
Hormone (estrogen) treatment	92.6% (50/54)
Surgery	
SRS	46.3% (25/54)
Testes removal only	7.4% (4/54)
Testes removal and penis amputation	5.6% (3/54)
Testes removal, penis amputation, and vaginoplasty	33.3% (18/54)
Other	14.8% (8/54)
Breast enlargement surgery	7.4% (4/54)
Thyroid cartilage reshaping	5.6% (3/54)
Facial feminization	1.9% (1/54)
Changing gender on the family registers	
Done	24.0% (13/54)
Not done	74.1% (40/54)
No answer	1.9% (1/54)
Lifestyle status as a woman	
Fully lived	61.1% (33/54)
No treatment	6.1% (2/33)
Hormone (estrogen) treatment only	27.3% (9/33)
Hormone (estrogen) treatment and SRS	66.7% (22/33)
Private life only	38.9% (21/54)
No treatment	9.5% (2/21)
Hormone (estrogen) treatment only	76.2% (16/21)
Hormone (estrogen) treatment and SRS	14.3% (3/21)

SRS: Sex reassignment surgery, refers to having undergone one or more of testes removal, penis amputation, and vaginoplasty.

respondents had changed their gender to female in their family registers (the public certificates for registering and notarizing details such as an individual's birth, marriage, death, and relatives), 61.1% were fully leading their lives as women, and 38.9% were living as women in private only.

Needs and practical experience of gender expression as women

1. Handling body shape

The rate of 'Need to' responses to 'changing bra sizes in response to breast changes' was the highest at 88.9%, and the rates of 'Need to' responses for 'measuring breast/waist/hip sizes' and 'changing clothing design in

response to body shape changes' were also high, each >80.0% (Table 2). Of these, the rate of 'I do it' responses to 'measuring breast/waist/hip sizes' was the highest at 87.0%, followed by 'changing bra sizes' at 77.1%, and 'changing clothing design' and 'changing underwear sizes in response to changes in buttocks size' at 75.0%.

The percentages of 'I did it but stopped because it was too difficult' responses were 8.3% for 'wearing a bodysuit' and 7.7% for 'wearing a girdle,' and 6.8% for 'changing clothing design.' The percentages of 'I don't do it' responses were relatively high, with 29.2% for 'wearing a bodysuit,' 25.0% for 'changing underwear

Table 2 Needs and practical experience of gender expression as women n=54

Gender expression as women	Need to				Don't need to	No answer
	Total	I do it	I did it but stopped because it was too hard	I don't do it		
Handling body shape						
Changing bra sizes in response to breast changes	88.9 % (48)	77.1 % (37)	4.2 % (2)	18.8 % (9)	9.3 % (5)	1.9 % (1)
Measuring breast/waist/hip sizes	85.2 % (46)	87.0 % (40)	6.5 % (3)	6.5 % (3)	9.3 % (5)	5.6 % (3)
Changing clothing design in response to body shape changes	81.5 % (44)	75.0 % (33)	6.8 % (3)	18.2 % (8)	11.1 % (6)	7.4 % (4)
Changing underwear sizes in response to changes in buttocks size	66.7 % (36)	75.0 % (27)	0 % (0)	25.0 % (9)	29.6 % (16)	3.7 % (2)
Wearing a girdle	48.1 % (26)	69.2 % (18)	7.7 % (2)	23.1 % (6)	48.1 % (26)	3.7 % (2)
Wearing a bodysuit	44.4 % (24)	62.5 % (15)	8.3 % (2)	29.2 % (7)	48.1 % (26)	7.4 % (4)
Handling weight gain						
Managing meals to prevent excess weight gain	87.0 % (47)	72.3 % (34)	10.6 % (5)	17.0 % (8)	9.3 % (5)	3.7 % (2)
Exercising to prevent excess weight gain	85.2 % (46)	50.0 % (23)	17.4 % (8)	32.6 % (15)	11.1 % (6)	3.7 % (2)
Skin and hair care						
Feminine hairstyle	98.1 % (53)	79.2 % (42)	5.7 % (3)	15.1 % (8)	0 % (0)	1.9 % (1)
Feminine makeup	96.3 % (52)	88.5 % (46)	1.9 % (1)	9.6 % (5)	0 % (0)	3.7 % (2)
Choice of foundation suited to my skin color	96.3 % (52)	80.8 % (42)	7.7 % (4)	11.5 % (6)	0 % (0)	3.7 % (2)
Choice of lipstick suited to my lip color	94.4 % (51)	84.3 % (43)	5.9 % (3)	9.8 % (5)	3.7 % (2)	1.9 % (1)
Use of sun blocking cosmetics	92.6 % (50)	92.0 % (46)	2.0 % (1)	6.0 % (3)	5.6 % (3)	1.9 % (1)
Excess hair removal	92.6 % (50)	100 % (50)	0 % (0)	0 % (0)	5.6 % (3)	1.9 % (1)
Skin care for women	92.6 % (50)	84.0 % (42)	4.0 % (2)	12.0 % (6)	3.7 % (2)	3.7 % (2)
Change to shampoo and conditioner suited to hair type	87.0 % (47)	83.0 % (39)	6.4 % (3)	10.6 % (5)	11.1 % (6)	1.9 % (1)
Changing skin care products to suit skin type	79.6 % (43)	81.4 % (35)	4.7 % (2)	14.0 % (6)	16.7 % (9)	3.7 % (2)
Changing hair color	68.5 % (37)	64.9 % (24)	16.2 % (6)	18.9 % (7)	29.6 % (16)	1.9 % (1)
Physical posture and behavior						
Sitting with knees together	87.0 % (47)	87.2 % (41)	2.1 % (1)	10.6 % (5)	11.1 % (6)	1.9 % (1)
Suitable gestures as a woman	85.2 % (46)	82.6 % (38)	2.2 % (1)	15.2 % (7)	13.0 % (7)	1.9 % (1)
Walking carefully to avoid being bowlegged	74.1 % (40)	95.0 % (38)	0 % (0)	5.0 % (2)	24.1 % (13)	1.9 % (1)
Use of language and voice						
Suitable use of language as a woman	81.5 % (44)	77.3 % (34)	2.3 % (1)	20.5 % (9)	16.7 % (9)	1.9 % (1)
Conversation in a higher than natural pitch	74.1 % (40)	75.0 % (30)	7.5 % (3)	17.5 % (7)	22.2 % (12)	3.7 % (2)
Use of public facilities, etc						
Use of women's bathrooms in public facilities	96.3 % (52)	84.6 % (44)	3.8 % (2)	11.5 % (6)	1.9 % (1)	1.9 % (1)
Use of women-only services at restaurants and accommodation facilities	75.9 % (41)	78.0 % (32)	0 % (0)	22.0 % (9)	20.4 % (11)	3.7 % (2)
Use of women-only train cars and seats	68.5 % (37)	81.1 % (30)	0 % (0)	18.9 % (7)	27.8 % (15)	3.7 % (2)

The percentage values of "I do it" "I did it but stopped because it was too hard" "I don't do it" represent as a proportion to the total of "Need to" for each gender expression item.

sizes,' 23.1% for 'wearing a girdle,' and 18.8% for 'changing bra sizes,' and all or half of the respondents who had had 'no treatment' chose the above answers.

The rate of 'I don't need to' responses was relatively high, with 48.1% for 'wearing a girdle,' 48.1% for 'wearing a bodysuit,' and 29.6% for 'changing underwear sizes.'

2. Handling weight gain

The 'Need to' responses were frequent, with 87.0% for 'managing meals to prevent excess weight gain' and 85.2% for 'exercising to prevent excess weight gain.' Of these, 72.3% of the respondents noted that 'I do it' for 'managing meals' and 50.0% for 'exercising.'

The percentage of 'I did it but stopped because it was too difficult' responses for exercising was 17.4%, and that for managing meals was 10.6%. The rates of 'I don't do it' responses were 32.6% for exercising and 17.0% for managing meals. The rates of 'I don't need to' responses were 11.1% for exercising and 9.3% for managing meals.

3. Skin and hair care

The rate of 'Need to' responses for 'feminine hairstyle' items was the highest at 98.1%, and the rates were also high for items such as 'feminine makeup,' 'choice of foundation suited to my skin color,' 'choice of lipstick suited to my lip color,' 'use of sun blocking cosmetics,' 'excess hair removal,' 'skin care for women,' and 'change to shampoo and conditioner suited to hair type.' Of these, 'I do it' responses were the highest at 100% for 'excess hair removal,' followed by high rates for responses pertaining to 'use of sun blocking cosmetics,' 'makeup,' 'choice of lipstick,' 'skin care,' 'change to shampoo and conditioner,' 'changing skin care products to suit skin type,' and 'choice of foundation.'

'I did it but stopped because it was too difficult' responses were relatively frequent at 16.2% for 'changing hair color.' The respondents provided 'I don't do it' responses for 'changing hair color,' 'hairstyle,' 'changing skin care products,' 'skin care,' and 'choice of foundation.' The instances of 'I don't need to' responses were relatively frequent at 29.6% for 'changing hair color,' but this response was not given at all for 'hairstyle,' 'makeup,' or 'choice of foundation.'

4. Physical posture and behavior

High rates of 'Need to' responses included 87.0% for 'sitting with knees together,' 85.2% for 'suitable gestures as a woman,' and 74.1% for 'walking carefully to avoid being bowlegged.' Of these, 'I do it' responses were fre-

quent at 95.0% for walking carefully to avoid being bowlegged, 87.2% for sitting with knees together, and 82.6% for suitable gestures.

The numbers of 'I did it but stopped because it was too difficult' responses were low, at 2.2% for 'suitable gestures,' 2.1% for 'sitting with knees together,' and no such responses for 'walking carefully to avoid being bowlegged.' The percentages of 'I don't do it' responses were 15.2% for suitable gestures and 10.6% for sitting with knees together. The percentages of 'I don't need to' responses were 24.1% for walking carefully to avoid being bowlegged, 13.0% for suitable gestures, and 11.1% for sitting with knees together.

5. Use of language and voice

The rate of 'Need to' responses was high for both 'suitable use of language as a woman' (at 81.5%) and 'conversation in a higher than natural pitch' (at 74.1%). Of these, the rates of 'I do it' responses were 77.3% for suitable use of language and 75.0% for conversation in a higher pitch.

The percentage of 'I did it but stopped because it was too difficult' responses was 7.5% for 'conversation in a higher pitch.' The rates of 'I don't do it' responses were 20.5% for suitable use of language and 17.5% for conversation in a higher pitch. The 'I don't need to' response was given at 22.2% for conversation in a higher pitch and 16.7% for suitable use of language.

6. Use of public facilities, *etc.*

The rate of 'Need to' responses was the highest at 96.3% for 'use of women's bathrooms in public facilities,' with 75.9% for 'use of women-only services at restaurants and accommodation facilities' and 68.5% for 'use of women-only train cars and seats.' Of these, 'I do it' responses were high for use of women's bathrooms (at 84.6%), use of women-only train cars and seats (at 81.1%), and use of women-only services (at 78.0%).

The response rate for 'I did it but stopped because it was too difficult' for use of women's bathrooms was 3.8%; 'I don't do it' responses were given at 22.0% for use of women-only services, 18.9% for use of women-only train cars and seats, and 11.5% for use of women's bathrooms. The response rate for 'I don't need to' was 27.8% for use of women-only train cars and seats and 20.4% for use of women-only services, while such responses were low for use of women's bathrooms (at 1.9%).

Background factors and needs/practical experience of gender expression as women.

1. Age

The respondents were then grouped by age: 30s and under (n=17), 40s (n=17), 50s (n=13), and 60s and higher (n=7). No significant difference was observed among these groups in the rates of questionnaire items regarding their needs and experience of gender expression as a woman.

2. Hormone treatment and SRS

Regarding 'changing bra sizes in response to breast changes,' the rates of 'I do it' responses were 81.8% for the respondents who indicated that they had received hormone treatment only and 86.4% for those who indicated that they had received hormone treatment and SRS, which was significantly high compared to 0% for the respondents who indicated that they had received no treatment ($p=0.001$) (Table 3). The responses covering 'need to' but 'I don't do it' were 9.1% among the respon-

dents who had received hormone treatment only and 13.6% for those who received both hormone treatment and SRS. Regarding 'wearing a girdle,' the rates of 'I do it' responses were 61.5% for the hormone-treatment-only respondents and 90.9% for the hormone treatment+SRS respondents, both of which were significantly higher than the 0% rate of the 'I do it' responses for those who had undergone no treatment ($p=0.049$).

Regarding the use of women's bathrooms in public facilities, the 'I do it' response rates were 100% for the hormone treatment+SRS respondents, which was significantly high compared to the 50.0% rate for the no-treatment respondents and 73.9% for the hormone-treatment-only respondents ($p=0.006$). Regarding the use of women-only services, the rate of 'I do it' responses was 95.7% for the hormone treatment+SRS group, which was significantly high compared to the

Table 3 Needs and practical experience of gender expression as women, according to the treatment status

Gender expression as women	No treatment (n=4)	Hormone treatment only (n=25)	Hormone treatment and SRS (n=25)	<i>P</i> -value
Handling body shape				
Changing bra sizes in response to breast changes				
Need to				
I do it	0 % (0)	81.8 % (18)	86.4 % (19)	0.001
I did it but stopped because it was too hard	0 % (0)	9.1 % (2)	0 % (0)	
I don't do it	100 % (4)	9.1 % (2)	13.6 % (3)	
Wearing a girdle				
Need to				
I do it	0 % (0)	61.5 % (8)	90.9 % (10)	0.049
I did it but stopped because it was too hard	50.0 % (1)	7.7 % (1)	0 % (0)	
I don't do it	50.0 % (1)	30.8 % (4)	9.1 % (1)	
Use of public facilities, etc.				
Use of women's bathrooms in public facilities				
Need to				
I do it	50.0 % (2)	73.9 % (17)	100 % (25)	0.006
I did it but stopped because it was too hard	0 % (0)	8.7 % (2)	0 % (0)	
I don't do it	50.0 % (2)	17.4 % (4)	0 % (0)	
Use of women-only services at restaurants and accommodation facilities				
Need to				
I do it	33.3 % (1)	60.0 % (9)	95.7 % (22)	0.003
I did it but stopped because it was too hard	0 % (0)	0.0 % (0)	0 % (0)	
I don't do it	66.7 % (2)	40.0 % (6)	4.3 % (1)	
Use of women-only train cars and seats				
Need to				
I do it	50.0 % (1)	60.0 % (9)	100 % (20)	0.002
I did it but stopped because it was too hard	0 % (0)	0 % (0)	0 % (0)	
I don't do it	50.0 % (1)	40.0 % (6)	0 % (0)	

P: Fisher's exact *P* value

The percentage values represent as a proportion to the total of each group's "need to" for each gender expression item.

"Don't need to" and "No answer" was not included in the analysis.

SRS: Sex reassignment surgery, refers to having undergone one or more of testes removal, penis amputation, and vaginoplasty.

33.3% for the no-treatment group and 60.0% for the hormone-treatment-only group ($p=0.003$). In addition, regarding the use of women-only train cars and seats, the rate of 'I do it' responses was 100% for the hormone treatment+SRS group, which was significantly high compared to the 50.0% for the no-treatment group and 60.0% for the hormone-treatment-only group ($p=0.002$). Among the respondents who had undergone hormone treatment+SRS, 70.0-89.5% responded 'I do it' to each question option, and they described living their lives fully as women.

Among the 25 respondents who had undergone SRS, no items of the needs and experiences of gender expression as women showed a significant difference between those who had made the formal change of their family register and those who had not.

3. Lifestyle status as a woman

Regarding 'feminine hairstyle,' the percentage of 'I do it' responses was 90.6% for the group of respondents who fully lived as women, which was significantly higher than the 60.0% for the group living as women in their private life only ($p=0.021$) (Table 4). Concerning the question 'choice of foundation suited to skin color,' in the former group, the 'I do it' response rate was 90.9%, which was significantly higher than the 63.2% in the latter group ($p=0.049$). Similarly, for 'skin care for women,' the 'I do it' response rate was 93.5% in the former group, which was significantly higher than 68.4% in the latter respondents ($p=0.045$).

Regarding 'suitable language as a woman,' the percentage of 'I do it' responses was 92.3% in the respondents who lived as women fully, which was significantly higher than the 55.6% in the respondents who lived as women only in their private life ($p=0.011$).

Regarding the use of women's bathrooms in public facilities, 100% of the respondents living fully as women responded 'I do it,' which was significantly higher than the 57.9% in the respondents living as women only in their private lives ($p=0$). Concerning the use of women-only services, the rate of 'I do it' responses was 92.9% for the former group and 46.2% for the latter group (a significant difference: $p=0.002$). Regarding the use of women-only train cars and seats, 'I do it' was the response of 96.0% of the full-time group, significantly higher than the 50.0% for the private-life-only group ($p=0.002$).

Among the respondents who fully lived as women, 58.3-73.1% of those who responded 'I do it' to each of

these questions had undergone hormone treatment+SRS.

Needs of support for social gender transition and experiences of receiving support. With regard to support for gender expression as a woman, the aspect that was rated highest under 'support needed' was 'makeup' at 46.3%, followed by high rates for 'fashion' at 35.2%; 'choosing and putting on underwear' at 33.3%; and 'skin care' at 33.3% (Table 5). Of these, the rates of responses indicating that the respondents were actually 'receiving or had received support' were highest for makeup (at 68.0%), followed by high rates for choosing and putting on underwear (0%), skin care (44.4%) and fashion (42.1%).

Responses indicating 'support needed' regarding voice training to speak in a feminine manner while producing a higher-pitched voice than the typical male voice were given by 24.1%, of which the response rate for 'receiving or had received training' was 30.8%.

In the questionnaire's free-response section, the respondents' opinions on support for social gender transition included descriptions of the need for a comprehensive program for improving the extent to which the respondents were able to be socially accepted as women and issues involving the difficulty of making use of existing support due to reasons such as the cost, the scheduling and service times, venue accessibility, and limited content.

Background factors and needs/experiences of support for social gender transition.

1. Age

The rates of respondents who reported receiving or having had received voice training were 50.0% (2/4) for the 50s age group and 100% (2/2) for the 60s age group, which were both significantly higher than the 0% (0/2, 0/5) for respondents in the 30s-and-under group and the 40s group ($p=0.013$).

2. Hormone therapy and SRS

The rate of 'receiving or had received support' responses for choosing and putting on underwear was 80.0% (8/10) in the hormone therapy+SRS group, which was significantly higher than the 0% (0/1) for the no-treatment group and 14.3% (1/7) for the hormone-therapy-only group ($p=0.036$).

3. Lifestyle status as a woman

The rate of 'support needed' responses for fashion was 52.4% (11/21) among the group living as women only in their private life, which was significantly higher

Table 4 Needs and practical experience of gender expression as women, according to the lifestyle status as a woman

Gender expression as women	Lifestyle status as a woman		P-value
	Private life only (n=21)	Fully lived (n=33)	
Skin and hair care			
Feminine hairstyle			
Need to			
I do it	60.0 % (12)	90.6 % (29)	
I did it but stopped because it was too hard	10.0 % (2)	3.1 % (1)	0.021
I don't do it	30.0 % (6)	6.3 % (2)	
Choice of foundation suited to my skin color			
Need to			
I do it	63.2 % (12)	90.9 % (30)	
I did it but stopped because it was too hard	15.8 % (3)	3.0 % (1)	0.049
I don't do it	21.1 % (4)	6.1 % (2)	
Skin care for women			
Need to			
I do it	68.4 % (13)	93.5 % (29)	
I did it but stopped because it was too hard	10.5 % (2)	0 % (0)	0.045
I don't do it	21.1 % (4)	6.5 % (2)	
Use of language and voice			
Suitable use of language as a woman			
Need to			
I do it	55.6 % (10)	92.3 % (24)	
I did it but stopped because it was too hard	5.6 % (1)	0 % (0)	0.011
I don't do it	38.9 % (7)	7.7 % (2)	
Use of public facilities, etc.			
Use of women's bathrooms in public facilities			
Need to			
I do it	57.9 % (11)	100 % (33)	
I did it but stopped because it was too hard	10.5 % (2)	0 % (0)	0
I don't do it	31.6 % (6)	0 % (0)	
Use of women-only services at restaurants and accommodation facilities			
Need to			
I do it	46.2 % (6)	92.9 % (26)	
I did it but stopped because it was too hard	0 % (0)	0 % (0)	0.002
I don't do it	53.8 % (7)	7.1 % (2)	
Use of women-only train cars and seats			
Need to			
I do it	50.0 % (6)	96.0 % (24)	
I did it but stopped because it was too hard	0.0 % (0)	0.0 % (0)	0.002
I don't do it	50.0 % (6)	4.0 % (1)	

P: Fisher's exact P value.

The percentage values represent as a proportion to the total of each group's "need to" for each gender expression item. "Don't need to" and "No answer" was not included in the analysis.

than 24.2% (8/33) for the group who lived fully as women ($p=0.045$). The rate of support needed but 'not receiving support' responses for makeup was 46.2% (6/13) in the former group, which was significantly higher than the 16.7% (2/12) in the latter group ($p=0.035$).

Discussion

Handling body shape changes and weight gain due to hormone treatment. Although a high percentage of the transgender women in this series reported needing to change their clothes and underwear sizes in response to changes in their body shape, ~20-40% of

Table 5 Needs and experience of support for social gender transition n=54

Support for social gender transition	Support needed	
	Total	Receiving or had received support
Makeup	46.3 % (25)	68.0 % (17)
Fashion	35.2 % (19)	42.1 % (8)
Choosing and putting on underwear	33.3 % (18)	50.0 % (9)
Skin care	33.3 % (18)	44.4 % (8)
Physical posture and behavior/gestures	25.9 % (14)	28.6 % (4)
Voice training	24.1 % (13)	30.8 % (4)
Conversation/communication	24.1 % (13)	23.1 % (3)
Hairstyle	22.2 % (12)	33.3 % (4)
Hair and scalp care	20.4 % (11)	18.2 % (2)
Diet	20.4 % (11)	9.1 % (1)

The percentage values of "Receiving or had received support" represent as a proportion to the total of "Support needed." for each support item.

them either had not so done at all or quit because it was too difficult to do so. A high percentage of those who had received 'no treatment' chose these options, which suggested that they were in a state in which they did not change their clothing because there was no change in their body shape even if they recognized the necessity, whereas this practice and its continuation were relatively difficult for the respondents who had undergone treatment.

Among the respondents who reported needing support but were not receiving or had not received it, a high percentage gave this no-support response for 'choosing and putting on underwear' at 50% (9/18) and 'fashion' at just under 60% (11/19), suggesting that many transgender women lack opportunities to obtain information about selecting well-fitted, comfortable underwear and receiving objective advice while trying on products in stores. In addition, the percentage of respondents who reported that they were receiving or had received support for choosing and putting on underwear was lower among those who did not undergo SRS compared to those who had done so, suggesting that support was difficult to obtain for them. For transgender women who have not undergone SRS, it may not be sufficient to only have information regarding underwear that is generally available to cisgender women, because the male upper body shape does not change even when breasts are enlarged through estrogen treatment, and the external sex organs remain male. Therefore, gender support professionals need to collaborate with underwear manufacturers and advisers to aid transgender women who have

had no treatment or have not undergone SRS regarding the introduction of suitable products and the selection of appropriate sizes, and to provide opportunities to try on new clothes and to provide demonstrations of how to do so.

The rate of respondents who reported needing fashion support was high among those with RLE in their private life only compared to those living as women fully. This indicates that information on clothing-related support may be difficult to acquire. Gender support professionals need to actively provide fashion information while considering the situations of transgender women with RLE only in their private lives.

A high percentage of the respondent transgender women needed to prevent weight gain through meal management and exercise, and the percentages of respondents who were not doing so or had quit because it was too difficult were 50% for exercise and just under 30% for meal management, suggesting that regular practice and continuation were difficult. The percentage of respondents who described needing support but were not receiving or had not received it for their diet was extremely high at >90% (10/11), suggesting that transgender women have few opportunities to obtain information and knowledge on effective exercise methods or meal menus and difficulties in putting them into practice. The respondents were also struggling to maintain and become habituated to these practices even if they were attempting to perform them. Gender support professionals need to collaborate with experts on exercise and nutrition to introduce exercise programs and menus that are easy for transgender women to put into

practice. They should also check whether transgender women are implementing such programs and encourage them to continue, and plan seminars to create opportunities for new approaches.

Skin and hair care. Over 90% of the transgender women in this cohort expressed needs for gender expression as women on most items, with extremely high interest in gender expression as women through skin care, hair care, and makeup. More than 20% responded that they needed to engage in these practices but had not or that they had stopped because it was too difficult for 'changing hair color' and 'feminine hairstyle,' but <20% gave responses of this type for other items, indicating that overall these issues were relatively easy to put into practice and continue implementing.

However, the rate of respondents who needed support but were not receiving it or had not received it was high: >80% (9/11) for hair and scalp care, >60% (8/12) for hairstyle, and >50% (10/18) for skin care. This indicates that the support needs of transgender women are not being fully met. In particular, the rate of respondents who were implementing a feminine hairstyle, choosing a foundation suited to their skin color, and skin care for women was lower among the transgender women with RLE only in their private lives compared to those who were living fully as women; practice and continuation could be difficult for the former group of respondents. Further, a high percentage of the respondents with RLE only in their private lives noted that they needed but were not receiving support for makeup, revealing the possibility that along with the difficulty of attending seminars on makeup, they were in need of specialized support for the techniques needed for feminine hairstyles and makeup during short periods in their private life and then returned immediately to their lives as men.

For transgender women, the process of applying makeup and doing their hair is one that facilitates both acquiring a feminine appearance and the experience of recognizing themselves as women. Makeup is known to be effective in satisfying the desire for transformation originating from dissatisfaction and discomfort with the self, providing relaxation, and improving self-respect and satisfaction [16, 17]. Employing suitable techniques of skin care for one's skin type and makeup techniques that can conceal masculine facial features and bone structure can ease transgender women's negative emotions, bring about psychological stability, and help

enhance their interpersonal skills. Gender support professionals should collaborate with cosmetic experts to plan seminars for transgender women so that they can experience and obtain makeup application skills that will help their self-expression as women. The introduction of easy makeup techniques that can be practiced by transgender women with RLE only in their private lives is also desired. The possibility of creating providing videos for individuals who cannot participate in seminars should also be explored.

Physical posture and behavior. A high percentage (>70-80%) of the respondents described needing to maintain feminine postures and movements; those who were not doing it or had tried it but stopped because it was too difficult were <20%, suggesting that these aspects were relatively easy to carry out and continue. However, a high percentage of the respondents (>70%; 10/14) needed but were not receiving or had not received support for 'physical posture and behavior/gestures,' indicating that this need among transgender women is not being met.

Awkward physical behavior, even with a feminine appearance, can make others uncomfortable and lead to difficult personal relations. Various problems in personal relations often worsen the challenges faced by persons with GD [18]. Support for transgender women in acquiring natural physical behaviors as women contributes to good interpersonal relations and improves the extent to which they are socially accepted as women. Gender support professionals need to collaborate with experts in etiquette and transgender women who are proficient in this respect in order to provide support.

Language/vocalization. A high percentage of the respondents (over 70-80%) reported needing to achieve feminine language use and vocalization; the percentage of those who had not done so or had stopped because it was too difficult was >20%, suggesting that the practice and continuation are somewhat difficult. The percentage of respondents using 'suitable feminine language' was lower among those with RLE only in their private life compared to those living fully as women, suggesting that practice and continuation were difficult for the former group.

The percentage of respondents who needed support but were not receiving or had not received it was >70% (10/13) for 'conversation/communication' and ~70% (9/13) for 'voice training'; the opinions in the free-response section included 'voice training is difficult to

maintain because it's too expensive.' However, the percentage of respondents undergoing voice training increased in accord with the respondents' age, indicating the possibility that younger transgender women with less economic stability found it difficult to obtain support.

Factors that influence the determination of a voice as female have been suggested to include not only voice pitch but also intonation, sentence final particles, dynamics, and speed [19]. Voice is also believed to be influenced by structural changes in the larynx as a result of aging; changes due to aging in the nerves, muscular system, and endocrine system; environment; and lifestyle habits [20]. Gender support professionals need to collaborate with speech therapists, voice trainers, and language-use advisers to introduce self-training vocalization methods for everyday use and communication skills that can help transgender women communicate as women without feeling uncomfortable. It is also important to help increase the extent to which transgender women are socially accepted as women during their conversing by supporting vocalization with attention to the characteristics of age groups.

Use of public facilities. Since the respondents who had no treatment or who had implemented RLE only in their private lives were also engaging in practices as transgender women, the use of public facilities is thought to involve an overall judgment of the extent to which an individual can be socially accepted as a woman, as is the change of gender in the family register. A high percentage of the respondents (>90%) reported needing to use women's bathrooms in public facilities, while the percentage of those not doing so or had stopped because it was too difficult was relatively low (<20%), suggesting that this was relatively easy to practice and continue. About 70% of the respondents described the need for the use of women-only train cars and seats, and >70% described needing to use women-only services in restaurants and accommodation facilities; however, >20% responded that they had not needed to use women-only services, suggesting that it was relatively difficult to put this into practice. Further, the percentage of those engaging in the use of women's bathrooms, women-only services, and women-only train cars and seats was lower among the transgender women who had not undergone SRS compared to those who had done so, suggesting that both one's appearance and male external sexual organs acted as obstacles,

making this practice and its continuation difficult. The indication of one's gender as being male in family registers may be a factor making it difficult to access women-only services.

Regarding bathrooms, it is possible to use bathrooms that are not crowded or multipurpose bathrooms that provide shelter from others' eyes, but being in restaurants, accommodation facilities, or trains for a given amount of time inevitably means being in view of others, which increases the risk of exposing one's assigned gender. Among the transgender women who described using public facilities, the percentage who had undergone SRS was high at $\geq 80\%$, and $\geq 70\%$ of them were living fully as women. Many of these respondents had both of these attributes, and it might not always be clear which is acting as a definite factor for practice.

For transgender women to be able to use women-only public facilities without inhibitions, a deeper understanding of transgender issues is required from the general public. However, given the current transitional status (which is by no means sufficient), support for increasing the overall extent to which transgender women are accepted as women is essential, and gender support professionals must respond to the needs of transgender women with comprehensive lifestyle support. Although the respondents did not bring up this issue, the suppression of secondary sexual characteristics through gonadotropin-releasing hormone agonist treatment is effective in further feminizing transgender women's appearance. To promote the wider use of such treatment, educational activities that involve teachers in schools are also important [21, 22].

The results of this study revealed that transgender women need support for their self-expression as women, and the support is essential for the improvement and maintenance of the extent to which they are socially accepted as women. Members of the gender support professions, particularly those involved in reproductive healthcare, need to coordinate collaborations with specialists in fields beyond medicine in order to develop appropriate support systems for transgender women.

In conclusion, this study revealed that the situations and support needs of transgender women in relation to their gender expressions as women are influenced by a range of contextual factors. There is a definite need for increased levels of personalized support that will con-

tribute to the improvement and maintenance of the extent to which transgender women can pass as women in social contexts.

Limitations of this study and future tasks. The limitations of this study stem from the number of respondents ($n = 54$) and their backgrounds. The present results need to be tested using a larger pool of respondents. In addition, there may have been an influence of the respondents' situations and support needs in relation to their gender expression as women, because >90% of the respondents were undergoing hormone treatment, approx. 50% had undergone SRS, and >60% were practicing RLE full-time as women. Future studies may need to consider treatment stages and RLE practice more closely. Because the influence of factors such as employment, economic status, family background, and location exists in gender expression practice and support experience, individuals' relationships with these issues must also be considered.

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