

Factors Related to LGBT Recognition for University Students and Employed Adults

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Abstract

Background: The aim of this study was to investigate Japanese students and employed adults' characteristic features, and sexual situation, and to find the correlated factors of lesbian, gay, bisexual, transgender (LGBT) recognition in order to obtain suggestions for improved relationships with sexual minorities in a diversifying society. **Methods:** This quantitative cross-sectional descriptive correlational study occurred during 2018 to 2019 when 2210 questionnaires were distributed to a purposive sample of eligible participants. A total of 1534 completed questionnaires (69.4%) were returned, of which 1439 (65.1%) were suitable for analyses. The survey included respondents' 1) characteristics, 2) sexual situation, and 3) LGBT recognition scale. Data were analyzed with descriptive statistics, factor analysis, reliability analysis, and structural equation modeling. SPSS ver. 26.0 (SPSS, Chicago, IL, USA) was used for data analysis at a 5% significance level. **Results:** The LGBT recognition score was significantly affected by suffering from gender identity (standardized partial regression coefficient: $\beta = 0.17$, $p < 0.001$), age ($\beta = -0.19$, $p < 0.001$), learning about LGBT experience ($\beta = 0.29$, $p < 0.001$), experience of disclosure from LGBT person ($\beta = 0.14$, $p < 0.001$), sexual problems with intimate relationship ($\beta = 0.07$, $p < 0.001$), and diversity penetration ($\beta = 0.14$, $p < 0.05$). **Conclusions:** Suffering from gender identity, learning about LGBT experience, experience of disclosure from LGBT person, sexual problem with intimate relationship, and diversity penetration had a positive effect, whereas age had negative effects on the LGBT recognition score.

Keywords

Sexual and Gender Minorities, Cross-Sectional Studies, Covariance Structure Analysis

1. Introduction

In Japan, 8.9% are classified as lesbian, gay, bisexual, transgender (LGBT), and the percentage of people in Japan who know the term LGBT is 68.5% (penetration rate), and it is increasing year by year [1]. Even so, LGBT people are prone to self-loathing and loneliness due to unconsciously discriminatory remarks, actions, and imposition of sexual orientation regardless of their gender identification [2]. According to Japanese research reports, LGBT people tend to have low self-esteem [3]. Studies from other countries found that LGBT people have a high suicide rate [4], and are prone to eating disorders [5]. Therefore, being poorly understood and in a minority, it is not surprising that LGBT people may have many health issues.

LGBT patients need competent nurses to support them; researchers found that education, training and practice, that included understanding LGBT issues, would improve the health outcomes of LGBT patients [6]. LGBT-focused education in medicine, dentistry, or nursing has been reported to help improve understanding and counseling skills for LGBT people [7]. It was also reported that the inclusion of LGBT health-related issues in the health curriculum and professional training for undergraduates was important [8] [9]. However, LGBT recognition is presumed to be low in Japan, where the penetration or diffusion of information and understanding of sexual minorities is lagging. A previous study by Asazawa *et al.* in 2019 established a valid and reliable scale for measuring LGBT recognition [9]. However, the target population was largely young women. Therefore, the purpose of this study was to build on the findings of Asazawa *et al.* and to investigate Japanese students and employed adults' characteristic features, and sexual situation, and to find the correlated factors of LGBT recognition in order to obtain suggestions for improving health care for sexual minorities in a diversifying society.

2. Methods

2.1. Study Design

This study was a descriptive quantitative cross-sectional questionnaire survey.

2.2. Definition of Terms

LGBT: Lesbian, Gay, Bisexual, and Transgender, an abbreviation that represents sexual and gender minorities.

Transgender: People who feel that they belong to the other sex, and not the sex they were born with, and who express this in their sexual behavior.

Diversity penetration: The extent to which the lives of minority populations are recognized in an economic market or population such as health care.

2.3. Participants and Setting

The participants were Japanese university undergraduate and graduate students and employed adults in a general company. There were two companies, a

small-sized elderly care facility and a large publishing house. A majority of the employees of the elderly care facility were women, and a majority of employees of the publishing house were men. Data were collected by purposive sampling of the participants from a convenience sample of university students and employed adults in the Kanto district of Japan in which the head of the university and head of the companies agreed to cooperate with this study. Participants were selected because the head of the university and head of the companies agreed to cooperate in this study. The inclusion criteria were 1) undergraduate and graduate students or employed adults, and 2) could communicate in Japanese. The exclusion criterion was participants with severe psychiatric disorders.

2.4. Procedures

After obtaining permission from the department head of the university and head of the company, verbal and written information regarding the research project was provided to the participants. A self-administered questionnaire was designed to ask for a single answer anonymously. Submission of the completed questionnaire indicated consent. Employed adult participants were returned the completed questionnaire in a sealed envelope by post. Students returned the completed questionnaire in a sealed envelope either by post or by placing it in a collection box at the entrance lobby of the university. During the study period from June 2018 to June 2019, 2201 questionnaires were distributed to eligible participants. A total of 1534 (69.4%) completed questionnaires were returned, of which 1439 (65.1%) were suitable for analyses.

2.5. Ethical Considerations

The study was conducted after obtaining approval from the Ethics Committee for Epidemiological Studies at Tokyo Healthcare University. Following the Declaration of Helsinki, a written explanation regarding the study objectives, methods, protection of anonymity, and voluntary basis of participation was provided to each participant. The participants were also informed that the collected data would only be used for this study.

2.6. Measures

2.6.1. Participants' Attributes

The attributes of the participants surveyed included sex identified on family register, age, diversity penetration (Is diversity pervasive in your current environment? Select yes, no), education in middle and high school, significant medical history, and genital disease history ([Table 1](#)).

2.6.2. Sexual Situation

The participants' sexual situation included the following: Suffering from gender identity, Sexual problem with intimate partner/relationship (for all participants), Experience of disclosing from LGBT person, and experience of learning about LGBT ([Table 2](#)).

Table 1. Demographic data of the participants (N = 1439).

Participants's sociodemographic characteristics	N	%
Sexes on the family register		
male	221	15.4
female	1218	84.6
Age (years)		
10s	532	37.0
20s	577	40.1
30s	69	4.8
40s	102	7.1
50s	104	7.2
60s	30	2.1
over 70	25	1.7
Position		
students	1070	74.4
employed adults	369	25.6
Diversity penetration		
yes	490	34.1
no	949	65.9
Education in middle and high school		
coeducation	1102	76.6
single-sex	337	23.4
Significant medical history		
yes	477	33.1
no	962	66.9
Genital disease history		
yes	151	10.5
no	1288	89.5

Table 2. Participant's sexual situation (N = 1439).

Items	Mean	SD
	N	%
LGBT recognition scale	40.6	5.5
Suffering of gender identity		
yes	40	2.8
no	1399	97.2
Sexual problem in close person		
yes	214	14.9
no	1225	85.1
Experience of confession from LGBT		
yes	322	22.4
no	1117	77.6
LGBT learning experience		
yes	846	58.8
no	593	41.2

2.6.3. LGBT Recognition Scale

The level of LGBT recognition was evaluated using the original version of the LGBT recognition scale [9]. The 3 sub-scales of the LGBT recognition scale consisted of the Knowledge of LGBT, Understanding of LGBT, and Tolerance for LGBT. It has a total of 10 items, which are scored as follows: “Strongly Disagree” 1 point, “Disagree” 2 points, “Neutral” 3 points, “Agree” 4 points, and “Strongly Agree” 5 points. The score ranges from 10 to 50 points. The higher the score, the higher is the LGBT recognition. Asazawa *et al.*, the developers of the LGBT recognition scale, had verified the reliability and validity [9].

2.7. Statistical Analysis

The software programs SPSS version 26.0 (SPSS, Chicago, IL, USA) and AMOS version 26.0 (IBM, Armonk, NY, USA) were used for the data analyses. The significance level was set at 5%. The alpha coefficient and factor loadings were calculated to examine the reliability of the responses on scale. The covariance structure analysis was used. Attribute and gender status have been replaced with dummy variables to act as independent variables. A LGBT recognition prediction model was examined to determine whether these factors affected LGBT recognition in participants using structural equation modeling.

3. Results

During the study period, 2210 questionnaires were distributed to eligible participants. A total of 1534 completed questionnaires (69.4%) were returned, of which 1439 were suitable for analyses. Therefore, the response rate was 65.1%.

3.1. Participants

Table 1 shows the demographic characteristics of the participants. The gender identified on the family register was 15.4% for men and 84.6% for women, and 37.0% in their teens, 40.1% in their 20s, and 22.9% 30 and above. There were 1070 students (74.4%) and 369 employed adults (25.6%).

A minority (34.1%) reported the presence diversity penetration. Education in middle and high school was coeducation 76.6%, and single-sex 23.4%. Reporting significant medical history was 33.1% and 10.5% had genital disease history. **Table 2** shows the participant’s sexual situation. There were 40 participants (2.8%) who suffered from gender identity, and 214 participants (14.9%) had sexual problems with an intimate partner. There were 322 participants (22.4%) who had the experience of disclosure by an LGBT person, and 846 participants (58.8%) had learning experience about LGBT.

3.2. Reliability and Validity of the Scales (Table 3)

The factor structure was confirmed for each variable of LGBT recognition scale. The construct validity was confirmed by factor analysis using the maximum likelihood method and promax rotation. The results of the factor analysis yielded

Table 3. Exploratory factor analysis of LGBT recognition scale (N = 1439).

No.	Factor/items	Factor loading		
		Factor 1	Factor 2	Factor 3
Factor 1: Knowledge of LGBT Cronbach's $\alpha = 0.83$				
2	I have an understanding of homosexuals and bisexuals.	0.96	0.00	-0.02
1	I have an understanding of gender identity disorder.	0.94	0.01	-0.02
3	I want to find out more about LGBT myself.	0.35	0.15	0.06
Factor 2: Understanding of LGBT Cronbach's $\alpha = 0.79$				
4	I feel that "homosexuals and bisexuals have difficulty living".	-0.02	0.95	-0.02
6	I feel that "there is social criticism and pressure on LGBT".	0.03	0.91	-0.03
5	I feel that "people with gender identity disorder have difficulty living".	0.00	0.53	0.06
Factor 3: Tolerance for LGBT Cronbach's $\alpha = 0.82$				
7	I accept family and friends even if they are homosexual or bisexual.	-0.08	-0.03	0.94
9	Being homosexual or bisexual is a matter of personal choice.	-0.05	0.00	0.92
10	I refrain from discriminatory language against LGBT parties.	0.10	0.12	0.46
8	I accept family and friends even if they are transgender.	0.22	0.12	0.40
Rotation sums of squared loadings		3.12	2.37	2.96
Factor correlation matrix		Factor 1	1	
		Factor 2	0.27	1
		Factor 3	0.59	0.23

Exploratory factor analysis, Maximum likelihood method, promax rotation; Cumulative contribution ratio 63.2%; Cronbach's alpha for the total score was 0.83.

a factor loading of 0.35 or more for all the items, and the contribution rate of LGBT recognition scale was 63.2%. The reliability of the scale was reconfirmed using the Cronbach's α coefficient with a value of 0.83. Accordingly, reliability and validity were reconfirmed for LGBT recognition. Based on the above validity and reliability examination, it was reconfirmed that the LGBT recognition scale was appropriate, thus the 10 original items were accepted for this study. The total score was calculated and the average score of LGBT recognition scale score for the participants was 40.6 ± 5.5 points.

3.3. LGBT Recognition Prediction Model

A LGBT recognition prediction model was created using structural equation modeling. The latent variables selected were nine factors: age, sex, diversity penetration, significant medical history, genital disease history, suffering from gender identity, sexual problem with intimate partner, experience of disclosure from LGBT person, and learning about LGBT experience. The sex, significant medical history, and genital disease history among the observed variables were excluded from the model because they had no significant path coefficient. Thus, the LGBT recognition value for the Japanese students and employed adult-related

model used in this study can reliably explain the relationships among the age, diversity penetration, suffering from gender identity, sexual problem with intimate partner, experience of disclosure from an LGBT person, and learning experience about LGBT. There were three questions (Q3, Q4, and Q5) in the LGBT recognition scale among the latent variables that were excluded from the model because they had no significant path coefficient. The measurement model was then retested resulting in a better model fit index. Drawing the partial correlation coefficient for the same error variables created the final model. The final values were as follows: GFI = 0.978; AGFI = 0.965; CFI = 0.979, RMSEA = 0.044, AIC = 281.3, chi-square score = 213.3, degree of freedom = 57, and chi-square/degree of freedom ratio = 3.742. The final model is shown in **Figure 1**. The standardized estimates were all significant at the 5% level. The fit indices demonstrated an adequate fit of the model to the data. The LGBT recognition score was significantly affected by suffering from gender identity (standardized partial regression coefficient: $\beta = 0.17$, $p < 0.001$), age ($\beta = -0.19$, $p < 0.001$), learning experience about LGBT ($\beta = 0.29$, $p < 0.001$), experience of disclosure from LGBT ($\beta = 0.14$, $p < 0.001$), sexual problem with intimate partner ($\beta = 0.07$, $p < 0.001$), and diversity penetration ($\beta = 0.14$, $p < 0.05$). Therefore, suffering from gender identity, learning experience about LGBT, experience of disclosure from an LGBT person, sexual problem with intimate partner, and diversity penetration had a positive effect, whereas age had a negative effect on the LGBT recognition score.

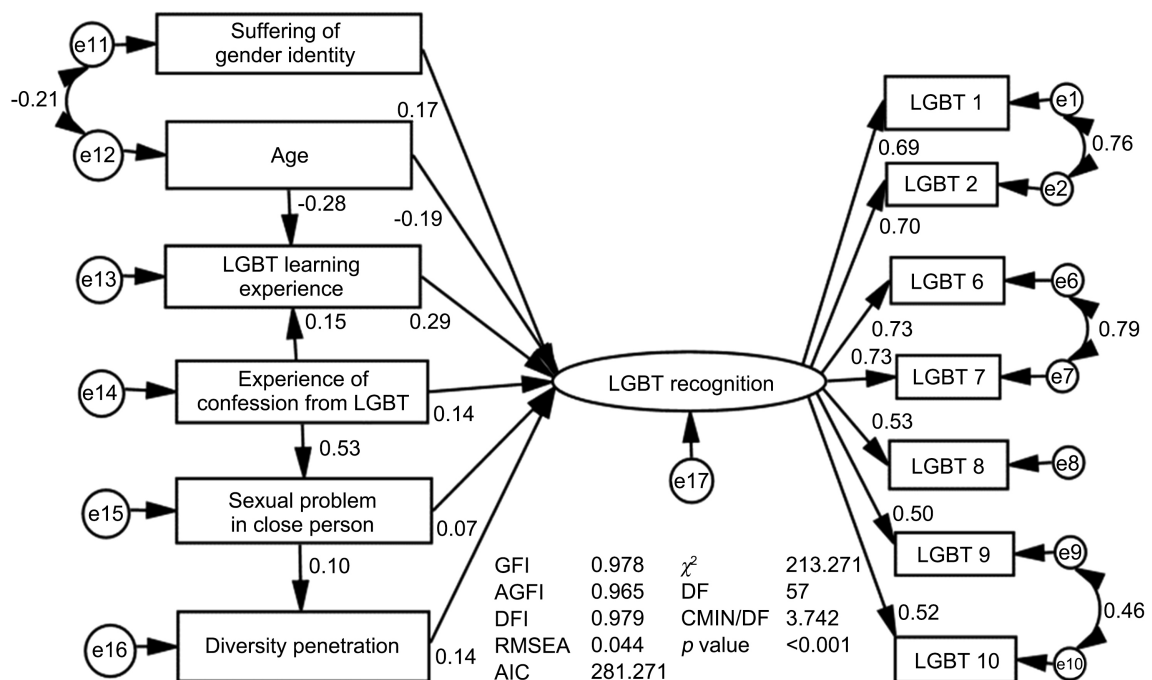


Figure 1. The LGBT recognition prediction model for Japanese students and employed adults (N = 1439). *GFI = Goodness of Fit Index, AGFI = Adjusted Goodness of Fit Index, CFI = comparative fit index, RAMSEA = Root Mean Square Error of Approximation, AIC = Akaike’s Information Criterion, χ^2 = chi-square value, DF = degrees of freedom, CMIN/DF = chi-squared/degree of freedom.

4. Discussion

4.1. Participants

This quantitative cross-sectional survey study investigated Japanese students and employed adults' characteristic features, and sexual situations, and to find the correlated factors of LGBT recognition in order to obtain suggestions for improving health care providers' relationships with sexual minorities. Since many participants were selected from a university setting, the participants were young students in their teens and 20s, the majority of respondents were women. Because many of the participants were young, the penetration of diversity learning was high at 34%, and the experience of learning about LGBT was 58%, while 80% of Japanese feel the need to increase diversity, only 10% - 45% of companies are working all on diversity, not just LGBT [10]. According to Okumura, 33% of university students had learning experiences about LGBT [11]. Compared to these reports, participants in this study were considered to be more knowledgeable and informed about LGBT. The percentage of people with suffering from gender identity was 2.8%, which was considerably lower than 8.9% in the Dentsu survey [1]. However, 14.9% had a sexual problem with intimate partner, and 22% had an Experience of disclosure from an LGBT person. Participants were aware that others besides themselves had sexual problems. It was thought that the participants were very sensitive and easily recognized the situation of others.

4.2. Need for LGBT Education

Six factors were associated with LGBT recognition: age, diversity penetration, suffering from gender identity, Sexual problem with intimate relationship, experience of disclosure from an LGBT person, and LGBT learning experience. High LGBT recognition leads to an understanding of sexual minorities.

LGBT recognition is important for an environment where people with sexual minorities can live comfortably. Therefore, in order to create a society where sexual minorities can live comfortably, it is necessary to 1) create an atmosphere that makes it easy to discuss sexual issues with others and especially their health care providers, 2) set up an environment that makes it easy to disclose about sexual orientation, and 3) LGBT learning experience. Diversity education and initiatives in Japan are mainly about women, the elderly, and people with disabilities, and there are only a few about sexual minorities [12]. It is important to create a social environment where a variety of minorities such as race and sexual orientation can live comfortably [13]. In order to create a comfortable society particularly within the health care system with less discrimination, we would like to implement an LGBT learning program for people of all ages and genders and strive to understand each other. Diversity and inclusion education is more necessary for Japanese educational institutions.

5. Conclusion

Predictors of the LGBT recognition value for the Japanese students and em-

ployed adults were age, diversity penetration, suffering from gender identity, sexual problem with intimate relationship, experience of disclosure from an LGBT person, and LGBT learning experience. Results suggested that LGBT learning experience is necessary for Japanese students and employed adults in order to create an environment with high LGBT recognition and diversity.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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