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## Influence of exposure to gender and sexual diversity in media (GSDM) and Thai adolescents' attitude toward LGBT individuals

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# Influence of exposure to gender and sexual diversity in media (GSDM) and Thai adolescents' attitude toward LGBT individuals

## Abstract

**Background:** Increased representation of lesbian, gay, bisexual, and transgender individuals in global media has influenced societal acceptance of diverse sexualities. However, negative attitudes persist in Thailand, where media portrayals, both positive and negative, significantly shape public perceptions of LGBT individuals. This study aims to assess how exposure to gender and sexual diversity in media (GSDM) affects Thai adolescents' attitudes toward LGBT individuals.

**Aims:** To investigate adolescent exposure to positive and negative GSDM and its association with stigmatizing attitudes toward LGBT individuals.

**Methods:** A cross-sectional survey was conducted with adolescents from eight schools in Bangkok using a questionnaire. The survey assessed demographics, exposure to GSDM, and stigmatization towards LGBT individuals. Chi-square tests, t-tests, and regression analyses were performed to identify associations.

**Results:** Out of 553 participants, with an average age of 16.34 years (ranging from 14 to 20 years), some identified as LGBT (34.72%). Participants had moderate exposure to both positive and negative GSDM content (PGSDM and NGSDM, respectively), with women more exposed to PGSDM than men. and exhibited low levels of stigmatization. Adolescents exhibited generally low stigmatization toward LGBT individuals, with higher levels of stigmatization linked to exposure to NGSDM ( $\beta = 0.80$ , 95% CI: 0.35-1.25). In contrast, PGSDM exposure was associated with reduced stigmatization ( $\beta = -2.73$ , 95% CI: -3.10- -2.35). Women and LGBT adolescents displayed significantly lower stigmatization than men and non-LGBT individuals.

**Conclusions:** Thai adolescents generally show low stigmatization toward LGBT individuals. Positive GSDM exposure reduces stigmatization, while negative exposure increases it. Media literacy programs emphasizing positive portrayals of gender diversity can promote acceptance and reduce bias.

**Keywords:** adolescents, gender and sexual diversity, media, LGBT individuals, stigmatizing attitudes

**What is already known on this topic:** Representation of lesbian, gay, bisexual, and transgender individuals in media has grown in recent years, contributing to positive societal changes. However, negative attitudes and stereotypes persist, especially in specific cultural contexts like Thailand. Existing literature emphasizes the impact of positive and negative gender and sexual diversity in media (GSDM) portrayals on shaping societal attitudes.

**What this study adds:** This study reveals that Thai adolescents exposed to positive GSDM content demonstrate lower stigmatization toward LGBT individuals, while exposure to negative content increases stigmatization. Women and LGBT adolescents are generally more accepting of LGBT individuals compared to men and non-LGBT groups.

**How this study might affect research, practice, or policy:** The findings underscore the importance of media literacy programs that encourage positive portrayals of gender diversity to foster acceptance and reduce bias. This research can guide policymakers, educators, and media professionals to promote inclusive practices and improve societal attitudes toward the LGBT community through thoughtful media representation.

## Introduction

In recent years, many countries have become more recognizant of gender diversity, as evidenced by an increase in media representation of LGBT individuals. According to the annual report by the Gay and Lesbian Alliance Against Defamation (GLAAD) <sup>1, 2</sup>, there were 775 LGBT characters broadcast during the survey period from June 1<sup>st</sup>, 2021 to May 31<sup>st</sup>, 2022, accounting for 11.9 % of all characters. This increased media representation is thought to be a contributing factor to the growing acceptance of diverse genders in society <sup>3</sup>.

In Thailand, a National Institute of Development Administration (NIDA) poll <sup>4</sup> showed a growing acceptance for the third gender, often understood in local context as trans individuals, with 92.82% of respondents accepting friends or colleagues as such (up from 90.15% in 2019), and 90.61% accepting family members or relatives (up from 86.81% in 2019). This trend is also observed in the National Statistical Office of Thailand's survey <sup>5</sup>, which showed that acceptance towards behavior not corresponding to one's sex at birth, for both transgender men and women, has risen from 35.7% and 35.9% in 2014 to 40.0% and 40.4% in 2019. Despite these positive changes in society, some groups still hold negative attitudes toward individuals of diverse genders. Examples include discrimination in the workplace, strict clothing rules, and difficulties in obtaining gender-concordant identity documents.

Gender and Sexual Diversity in Media (GSDM) refers to the representation and portrayal of individuals of different sexual orientations and gender identities/expressions (diverse SOGIE) across various forms of media, including movies, TV shows, advertisements, and news articles. The impact of GSDM on shaping people's perceptions of gender roles and stereotypes, as well as how individuals are treated in society, underscores its significance as a research subject. Previous studies have highlighted that

exposure to GSDM across various platforms can contribute to positive societal changes, especially among younger generations <sup>6</sup>. For instance, Thai films have played a critical role in providing a platform for individuals not traditionally accepted by mainstream society, facilitating a broader understanding of LGBT identities <sup>7</sup>. Similarly, a study on Yaoi (Y)-fiction literature, characterized by the Japanese terms 'yaoi' for male-male relationships and 'yuri' for female-female relationships, has shown its potential to increase acceptance of sexual diversity among readers, thus promoting gender equality <sup>8</sup>.

However, the portrayal of gender-diverse individuals in mainstream media has historically been problematic, often hyper-sexualizing or mocking them. Encouragingly, the evolution of contemporary media platforms, such as streaming services, has paved the way for more authentic and nuanced depictions of love and relationships, subsequently leading to a surge in LGBT characters and content <sup>9</sup>. In particular, the trend involving Y-media, in forms of fiction and series, has witnessed a significant increase in recent days <sup>8</sup>.

While it is evident that exposure to such media has the potential to foster positive attitudes towards LGBT individuals, it remains an unfortunate reality that negative stereotypes persist, particularly in Thai media. Such negative portrayals can contribute to the solidification of narrow perceptions surrounding gender-diverse individuals, thereby perpetuating discrimination and curtailing their rights <sup>10</sup>. Furthermore, a survey conducted by United Nations Development Programme <sup>11</sup> in 2018-2019 found that despite increased acceptance and representation of gender-diverse individuals in media and society, they still face restrictions on their rights and face discrimination due to societal judgment. Moreover, the lack of understanding of the sub-groups within the LGBT community leads to differing levels of acceptance towards these individuals <sup>2</sup>.

This study specifically aims to assess the immediate impact of positive versus negative gender-diverse media portrayals on adolescent attitudes toward LGBT individuals in Thailand. It addresses significant gaps in previous research, which has often overlooked the varied effects of different types of media portrayals and has rarely examined the nuanced experiences within different LGBT sub-groups, especially in a Thai context. By utilizing a cross-sectional survey methodology, our approach is particularly effective for capturing real-time data that reflects current conditions and public opinions. Our study seeks to enhance understanding of how diverse media portrayals can shape adolescent attitudes and influence public education about sexual diversity in Thai society, contributing crucial insights into the dynamic interplay between media consumption and adolescent attitudes.

## Methodology

This research adopted a cross-sectional survey methodology to collect data from students in Mathayom 4-6 (Grade 10-12) within Thailand's standardized educational system, as defined by the Office of the Basic Education Commission (OBEC) in Bangkok, covering the Secondary Educational Service Area Office Bangkok 1 and 2. Data collection occurred during the 1<sup>st</sup> and 2<sup>nd</sup> semesters of the academic year 2021 (Figure 1).

<Figure 1 Here>

## Sample and participants

The sample size was calculated using the Taro Yamane formula targeting a 95% confidence level and a 5% margin of error, resulting in a minimum required sample size of 400 participants. To account for potential data loss, an additional 25% (100 participants) was added, bringing the total sample size to a minimum of 500 participants.



Eligible students were those who could understand Thai and complete the questionnaire independently, with no exclusion criteria set for study participation.

Due to the COVID-19 pandemic's impact, some schools were hesitant to participate. Therefore, a purposive sampling method was employed to select four schools from each Secondary Educational Service Area Office Bangkok (1 and 2). Subsequently, researchers worked with teachers to choose classrooms and students via convenience sampling to fill out the online questionnaire. Prior to participation, the research team provided a verbal explanation of the study's purpose and procedures to all potential participants. Students were subsequently required to provide their consent via an online form, ensuring that they were fully informed and agreed to participate in the study voluntarily.

**Measurements**

The data collection instrument was an online questionnaire divided into three sections. The first section aimed to collect basic demographic information, including age, gender identity (LGBT and non-LGBT), academic level, and whether participants had family members identifying as LGBT.

The second section examined participants' media consumption habits and exposure to positive and negative media content related to gender diversity. Participants were asked to self-report their average daily media usage across various platforms (e.g., television, YouTube, books, e-books, mobile games, radio) over the past six months. The total time spent on media is derived from combining the time spent on each media type. This also included 28 questions on exposure to media content related to diverse sexualities, with half focusing on positive content related to gender and sexual diversity in media (PGSDM), and the other half on negative content related to gender and sexual diversity in media (NGSDM). The questionnaire was developed by the researchers with

insights from psychiatry and adolescent media use experts who also provided healthcare services to LGBT individuals. The questionnaire underwent a pilot test with five students sharing demographic similarities with the target group. Feedback was incorporated after consulting with the experts. Responses were measured from a scale from never (1 point) to always (5 points), indicating the frequency of exposure to PGSDM and NGSDM content. The questionnaire's content validity was verified by three experts in diverse sexualities care, achieving an Item-Objective Congruence (IOC) score of 0.90. Its reliability was confirmed through Cronbach's alpha, showing excellent internal consistency overall ( $\alpha = 0.92$ ), and for questions on positive ( $\alpha = 0.86$ ) and negative ( $\alpha = 0.89$ ) media content exposure.

The third section utilized the LGBTQ stigma scale <sup>2</sup> to assess stigmatizing attitudes towards LGBT individuals, adapted to "LGBT stigma scale" for better contextual relevance within Thai society. This adaptation aimed to avoid potential confusion by excluding references to individuals identifying as queer. The scale, consisting of 84 self-rated questions, was translated into Thai following the World Mental Health Composite International Diagnostic Interview (WMH-CIDI) protocol <sup>12</sup> and piloted with five students. Revisions were made based on expert feedback. It covered six themes reflecting biases against various LGBT sub-groups: lesbian women, gay men, bisexual women, bisexual men, transgender women, and transgender men. Each theme contained 14 items across six sub-themes, ranging from social/family relationships to perceptions of femininity/masculinity. Responses ranged from strongly disagree (1 point) to strongly agree (5 points), with reverse scoring for items conveying positive sentiments (items 1, 2, 6, 7, 11, and 12 in each theme). Higher scores indicated stronger stigmatizing attitudes towards LGBT individuals. The scale demonstrated excellent reliability ( $\alpha =$

0.99), with each identity group section also showing good reliability ( $\alpha$  ranging from 0.82 to 0.85).

**Statistical analysis**

The data was analyzed using SPSS Statistics (version 16, IBM Corporation). Descriptive statistics were used to report the frequency, percentage, mean, and standard deviation of demographic data, time spent on each type of media, and stigmatization score towards LGBT individuals. The chi-square test was employed to examine differences in demographic data between males and females, while t-test was used to compare the time spent on each media type and stigmatizing attitudes scores towards LGBT individuals between males and females. Additionally, linear regression analysis was conducted to identify factors that could predict stigmatizing attitudes towards LGBT individuals.

**Patient and public involvement**

Patients or the public were not involved in the design, conduct, reporting or dissemination plans of our research.

**Results**

A total of 554 adolescents participated in the survey. However, one participant did not provide complete information, leaving 553 valid responses with complete data for analysis. The missing data from the single incomplete response were excluded from the final analysis to ensure the reliability and accuracy of statistical outcomes. As a result, the final analytical sample comprised 553 participants (Figure 1).

**Demographic data**

According to Table 1, 553 participants responded to the questionnaire. The average age was 16.34 years (min-max = 14-20, SD = 0.86), with 237 (42.86%) males and 316 (57.14%) females. A majority of the participants (n = 361, 65.28%) identified as non-LGBT, while 192 (34.72%) identified as LGBT. Additionally, 80 participants (14.47%) reported having a family member who identified as LGBT.

**Table 1. Characteristics of the sample population**

Model		Total N = 553 N (%) / mean (S.D.)	Male N = 237 (42.91%) N (%) / mean (S.D.)	Female N = 316 (57.14%) N (%) / mean (S.D.)	$\chi^2/t$	p
Sexual orientation	Non-LGBT	361 (65.28)	187 (78.90)	174 (55.06)	33.96	<0.001***
	LGBT	192 (34.72)	50 (21.10)	142 (44.94)		
Religion	Buddhism	505 (91.32)	222 (93.67)	283 (89.55)	2.90	0.089
	Others	48 (8.68)	15 (6.32)	33 (10.44)		
Current grade	Grade 10	132 (23.86)	44 (18.57)	88 (27.85)	8.10	0.017*
	Grade 11	88 (15.91)	158 (66.67)	175 (55.38)		
	Grade 12	333 (60.21)	35 (14.77)	53 (16.77)		
Presence of LGBT in family	No	473 (85.53)	215 (90.72)	258 (81.65)	9.01	0.003**
	Yes	80 (14.46)	22 (9.28)	58 (18.35)		
	Lesbian	27 (24.32)				
	Gay	21 (18.92)				
	Bisexual women	35 (31.53)				
	Bisexual men	5 (4.50)				
	Trans women	13 (11.71)				
	Trans men	10 (9.01)				
	Total media usage time (minutes) <sup>a</sup>	1537.18 (1283.17)	1673.52 (1498.71)	1434.93 (1085.367)	2.08	0.038*
Exposure to LGBT content in the media <sup>b</sup>	PGSDM	48.46 (10.40)	43.67 (11.04)	52.05 (8.24)	-9.82	<0.001***
	NGSDM	31.47 (7.78)	31.24 (8.56)	31.64 (7.15)		

a = mean of sum score (S.D.), b = Exposure to LGBT content in the media (63.14 - 70.00 means very frequently, 49.14 - 63.13 means frequently, 35.14 - 49.13 means occasionally, 21.14 - 35.13 means rarely, and 14.03 - 21.13 means never); \* = p-value < 0.05, \*\* = p-value < 0.01, \*\*\* = p-value < 0.001

## Media exposure

Participants reported using various media forms for an average of 1,537.18 minutes (25 hours and 37 minutes) per day over the past 6 months (Table 1). The cumulative time spent on media might exceed the typical 24-hour day due to multitasking. Online media, including websites, YouTube, and social networks, was the most frequently used, averaging 395.58 minutes per day (6 hours and 35 minutes). Music consumption was next, averaging 248.60 minutes per day (4 hours and 8 minutes), while radio programs being the least used, averaging 18 minutes per day. Males tended to engage more with media than females ( $\chi^2 = 2.08$ ,  $p = 0.038$ ).

Most participants reported moderate exposure to GSDM content. The overall exposure score to GSDM content was 79.93 (S.D. = 14.06, min-max = 28-121), with PGSDM content exposure at a moderate level (average score = 48.46, S.D. = 10.40, min-max= 14-69) and NGSDM content at a low level (average score = 31.47, S.D. = 7.78, min-max= 14-58) (Table 1). Although men spent more time on media than women, women reported significantly more exposure to PGSDM content ( $\chi^2 = -9.82$ ,  $p < 0.001$ ). Exposure levels to NGSDM content were similar for both male and female participants.

**Attitudes towards LGBT individuals**

As depicted by Table 2, the overall mean score for the LGBT stigma scale was 165.82 (min-max = 84-275, S.D. = 56.69). Participants showed the highest level of stigmatization towards trans men (average score = 28.06, min-max = 14-50, S.D. = 10.18), followed by trans women and bisexual men (average score = 28.03 and 27.95, min-max = 14-58 and 14-48, and S.D. = 10.24 and 10.11, respectively). Male participants had higher stigmatizations scores across all sexual identities than female participants, with mean stigma scores of 196.95 (S.D. = 53.49) and 142.48 (S.D. = 47.05), respectively. In terms of attitudes within LGBT subgroups, male participants demonstrated the highest stigma score against trans women (mean = 33.35, S.D. = 9.56), while female participants showed the highest stigmatization towards trans men (mean = 24.16, S.D. = 8.72).

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**Table 2. Mean of LGBT stigma scores and differences between males and females**

Stigmatization toward LGBT	Min	Max	Total N = 553 mean of sum score (S.D.)	Male N = 237 (42.91%) mean of sum score (S.D.)	Female N = 316 (57.14%) mean of sum score (S.D.)	t	p
Overall LGBT individuals <sup>a</sup>	84	275	165.82 (56.69)	196.95 (53.49)	142.48 (47.05)	12.47	<0.001***
lesbian women <sup>b</sup>	14	46	26.63 (8.68)	31.40 (8.68)	23.05 (6.75)	12.27	<0.001***
gay men <sup>b</sup>	14	54	27.69 (9.52)	32.85 (9.08)	23.82 (7.87)	12.25	<0.001***
bisexual women <sup>b</sup>	14	52	27.47 (9.93)	32.86 (9.48)	23.43 (8.21)	12.24	<0.001***
bisexual men <sup>b</sup>	14	48	27.95 (10.11)	33.23 (9.48)	23.98 (8.66)	11.78	<0.001***
trans women <sup>b</sup>	14	58	28.03 (10.24)	33.35 (9.56)	24.03 (8.82)	11.72	<0.001***
trans men <sup>b</sup>	14	50	28.06 (10.18)	33.26 (9.68)	24.16 (8.72)	11.40	<0.001***

a = The average overall score of stigmatization towards LGBT (378.84 - 420.00 means the highest level of stigmatization, 294.84 - 378.83 means a high level of stigmatization, 210.84 - 294.83 means a moderate level of stigmatization, 126.84 - 210.83 means a low level of stigmatization, and 84.00 - 126.83 means the least level of stigmatization), b = average total score of stigmatizations against LGBT separated by subgroups (63.14 - 70.00 means the highest level of stigmatizations, 49.14 - 63.13 means a high level of stigmatization, 35.14 - 49.13 means a moderate stigmatization, 21.14 - 35.13 means a low level of stigmatizations, and 14.00 - 21.13 means the least level of stigmatization); \*\*\* = p-value < 0.001

### Relationship between exposure to GSDM and stigmatizing attitudes towards LGBT individuals

Table 3 reveals that exposure to PGSDM content was associated with lower stigmatization levels towards overall LGBT individuals ( $\beta = -2.73$  (-3.10- -2.35),  $p < 0.001$ ), as well as every LGBT subgroup ( $\beta = -0.48$  (-0.54- -0.41) to  $-0.43$  (-0.49- -0.37),  $p < 0.001$ ). Conversely, exposure to NGSDM content was associated with higher stigmatization levels towards overall LGBT individuals, as shown by a higher mean score on the LGBT stigma scale ( $\beta = 0.80$  (0.35-1.25),  $p = 0.001$ ), as well as every LGBT subgroup ( $\beta = 0.11$  (0.04-0.18) to  $0.15$  (0.07-0.24),  $p = 0.001$ -0.005).

Female participants had lower stigmatization levels towards LGBT individuals and every subgroup than male participants ( $\beta = -26.71$  (-34.50- -18.92),  $p < 0.001$  and  $\beta = -4.69$  (-6.08- -3.307) to  $-4.21$  (-5.41- -3.01),  $p < 0.001$ , respectively). LGBT participants also had lower stigmatization levels towards LGBT individuals and every subgroup than non-LGBT participants ( $\beta = -18.50$  (-26.24- -10.77),  $p < 0.001$  and  $\beta = -3.67$  (-5.126- -2.221) to  $-2.17$  (-3.36- -0.98),  $p < 0.001$ , respectively).

However, no significant association was found between individuals' stigmatization towards LGBT and their age, whether they had LGBT family members, or the overall time spent consuming media.

Table 3. Relationship between exposure to LGBT media and LGBT stigma scores

	Overall LGBT individuals		Lesbian women		Gay men		Bisexual women		Bisexual men		Trans women		Trans men	
	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value
Age (years)	1.48 (-2.55-5.51)	0.471	0.18 (-0.45-0.80)	0.579	0.28 (-0.41-0.970)	0.423	0.27 (-0.45-0.98)	0.467	0.33 (-0.41-1.07)	0.380	0.20 (-0.57-0.96)	0.616	0.23 (-0.53-0.98)	0.553
Female	-26.71 (-34.50- -18.92)	<0.001***	-4.21 (-5.41- -3.01)	<0.001***	-4.50 (-5.83- -3.17)	<0.001***	-4.69 (-6.08- -3.307)	<0.001***	-4.47 (-5.91- -3.03)	<0.001***	-4.59 (-6.0- -3.12)	<0.001***	-4.25 (-5.71- -2.78)	<0.001***
LGBT	-18.50 (-26.24- -10.77)	<0.001***	-2.17 (-3.36- -0.98)	<0.001***	-3.16 (-4.48- -1.83)	<0.001***	-2.90 (-4.28- -1.53)	<0.001***	-3.29 (-4.72- -1.88)	<0.001***	-3.31 (-4.7- -1.85)	<0.001***	-3.67 (-5.13- 2.22)	<0.001***
Presence of LGBT in family	-2.17 (-12.42-8.08)	0.678	0.10 (-1.48-1.68)	0.902	-0.52 (-2.28-1.23)	0.558	-0.09 (-1.92-1.73)	0.922	-0.37 (-2.27-1.53)	0.699	-0.52 (-2.46-1.41)	0.596	-0.76 (-2.68-1.17)	0.439
media usage time	0.00 (0.00-0.01)	0.221	0.00 (0.00-0.01)	0.205	0.00 (0.00-0.01)	0.321	0.00 (0.00-0.01)	0.339	0.00 (0.00-0.01)	0.262	0.00 (0.000-0.001)	0.242	0.00 (0.00-0.01)	0.165
PGSDM	-2.73 (-3.10- -2.35)	<0.001***	-0.43 (-0.49- -0.37)	<0.001***	-0.44 (-0.51- -0.38)	<0.001***	-0.48 (-0.54- -0.41)	<0.001***	-0.47 (-0.54- -0.41)	<0.001***	-0.46 (-0.53- -0.39)	<0.001***	-0.46 (-0.53- -0.39)	<0.001***
NGSDM	0.80 (0.35-1.25)	0.001**	0.11 (0.04-0.18)	0.002**	0.14 (0.06-0.22)	0.001**	0.14 (0.05-0.22)	0.001**	0.15 (0.07-0.22)	<0.001***	0.14 (0.06-0.23)	0.001**	0.12 (0.04-0.21)	0.005**

Abbreviations: LGBT = lesbian, gay, bisexual, transgender, Trans = transgender, PGSDM = positive gender and sexual diverse media content, NGSDM = negative gender and sexual diverse media content; \* = p-value < 0.05, \*\* = p-value < 0.01, \*\*\* = p-value < 0.001

## Discussion

The study found that Thai adolescents are moderately exposed to GSDM, with a majority portraying positive representations of sexual diversity. Women are exposed to positive GSDM content more than men. Overall, adolescents in Thailand demonstrate low stigmatizing attitudes towards LGBT individuals and sub-groups. Exposure to PGSDM content is associated with a lower level of stigmatization towards LGBT individuals and sub-groups, while exposure to NGSDM content is associated with higher levels of stigmatization. Gender and sexual orientation emerge as moderating factors, with females and LGBT individuals showing lower levels of stigmatization towards LGBT individuals and sub-groups.

### Exposure to GSDM among adolescents

The study revealed that adolescents demonstrate a moderate level of exposure to media containing sexual diversity content, with most media portraying positive representations of sexual diversity. This trend represents a significant shift from the limitations documented in earlier literature, particularly in the early 2000s. During that era, LGBT content in media, especially on broadcast and cable TV, often depicted negative stereotypes, relegating characters to roles as punchlines, or showcasing exaggerated displays of affection<sup>13, 14</sup>.

However, entertainment media has undergone a noteworthy transformation since then, with the representation of LGBT characters becoming more comprehensive and authentic. This shift aligns with a study by Netzley<sup>15</sup>, which observed a change in the portrayal of gay characters on television from stereotypes to multi-dimensional characters between the 2002-2003 and 2005-2006 seasons. This corresponds to studies by Cook<sup>16</sup> and Nölke<sup>9</sup>, which observed an increasing number of LGBT characters in mainstream



media, transitioning from comedic roles, hyper-sexualization, and mockery to representations of various forms of love and the message that every family can be a good family.

Analysis of LGBT character representation by GLAAD <sup>17</sup> from 2005 to the present indicates an increase in the number and percentage of LGBT characters over the years. Nevertheless, this growth has not been without challenges. Gaps and disparities persist, affecting the quality and diversity of LGBT representation. Negative stereotypes endure, casting a shadow over the progress made <sup>18</sup>. However, amidst these challenges, there are encouraging signs of progress, with instances of positive portrayal and realistic depiction. A significant aspect of this evolution comes from the role of streaming platforms, which offer a broader canvas for the representation of LGBT characters and identities. The relatively fewer content restrictions and regulations on these platforms compared to traditional media enable a richer portrayal of diverse identities <sup>16</sup>.

In Thailand, the LGBT community has been part of the media for a long time, but their role and representation have evolved over the years. In the past, Thai media portrayed LGBT people, often referred to as the “third gender” or “kathoei,” in negative stereotypes, depicting inappropriate behavior or comedic personas, especially in the case of kathoeis or ladyboys <sup>19</sup>. This has evolved as efforts to distinguish between gay and kathoei identities led to clearer character identities within entertainment media, capturing audience and producer attention. The rapid growth of the Thai Boys Love (BL) drama market, a genre of fictional media originating in Japan that features homoerotic relationships between male characters, in recent years is a testament to this changing landscape. A survey by Thai Public Broadcasting Service, spanning from 2000-2019, underscores the prevalence of gay characters dominating media representation within the LGBT spectrum <sup>20</sup>. In contrast, Thai news media portrays a stark underrepresentation of

individuals with LGBT identities, often resorting to inaccurate, stereotypical, and harmful depictions<sup>10</sup>. Thus, the journey towards full and accurate representation of LGBT individuals remains ongoing, emphasizing the critical role media plays in shaping societal perceptions and attitudes towards the LGBT community.

The findings of this study highlight a noteworthy gender discrepancy in exposure to PGSDM content, with females showing greater exposure compared to males. This may be attributed to the fact that males tend to spend more time on gaming media, consistent with some previous studies<sup>21</sup>, while females tend to spend more time on e-books (supplementary table). Furthermore, a previous study found that romance was the most popular book genre among females, while science fiction was more preferred by men, which may explain the different kinds of media content related to sexual diversity experienced by these two genders<sup>22</sup>. Qualitative studies by Chou<sup>23</sup> on Taiwanese yaoi readers reveal female readers' motivation to explore these materials as a means of transcending gender constraints. Similarly, Zsila and colleagues'<sup>24</sup> exploration of yaoi media consumption motives confirms identification/self-analysis and genuine love devoid of gender, alongside pro-gay attitudes, as influential factors.

Conversely, the inclusion of LGBT content within gaming media is relatively nascent, emerging only in recent years. Many games now allow players to create characters and define their gender identities freely. However, LGBT content is often limited to certain parts of the game, rather than being central to the game's overall theme. For example, some games may feature non-player characters (NPCs) or other characters that can have various genders or sexual expressions or offer different conversational styles, tools, costumes, and residences. This landscape underscores the potential influence of gender on media consumption patterns and the resultant exposure to diverse sexual diversity content.

**Attitudes of adolescents towards LGBT individuals**

Our study revealed that adolescents in Thailand generally hold positive attitudes towards LGBT individuals and sub-groups, aligning with previous surveys conducted by NIDA <sup>4</sup>, as well as findings from other Southeast Asian nations such as Singapore and the Philippines <sup>25</sup>.

However, the level of prejudice against LGBT individuals may depend on other factors, such as religion and the political system. A Study by Jäckle and Wenzelburger found that nations underpinned by strong religious convictions often harbor negative sentiments toward homosexual groups, which subsequently extend to LGBT individuals <sup>26</sup>. In certain regions, the criminalization of transgender practices and same-sex relationships further compounds these negative perceptions. These attitudes are often rooted in the historical, cultural, and religious fabric of a country, making significant shifts challenging to attain.

**Factors associated with adolescents' attitudes towards LGBT individuals**

The study found that exposure to PGSDM content is associated with lower levels of stigmatization towards LGBT individuals and sub-groups, while exposure to NGSDM content is associated with higher levels of stigmatization. These findings align with previous research, such as studies by Calzo and Ward <sup>27</sup> that surveyed 1,761 undergraduate students from 2000 to 2002 and found a substantial link between media consumption and more accepting attitudes toward homosexuality. Bonds-Raacke et al. <sup>28</sup> found that thinking positively about gender-diverse characters led to more favorable attitudes toward gay individuals. Kathinthong's <sup>8</sup> research underscored the influence of Y-fictions on acceptance levels of sexual diversity among female readers, revealing their potential to promote gender equality. These findings underscore the potential of media

representation to shape attitudes towards LGBT individuals, highlighting the responsibility of media creators to present diverse and positive portrayals. Informed by social cognitive learning theory, media characters and scenes serve as symbolic representations that influence adolescents' attitudes. The recurrence of media exposure may foster fixed perceptions, in line with representation theory, which suggests that the media tends to highlight specific characteristics of people or objects to simplify storytelling. However, this practice can distort the audience's perception of true representation of events, people, places, or history.

Additionally, our study revealed that women and LGBT individuals exhibited lower stigmatization towards LGBT individuals than men and non-LGBT groups. This aligns with Worthen's work <sup>2</sup>, which indicated that LGBT individuals held lower levels of prejudice than non-LGBT individuals. Studies by Srimuang and Pholphirul <sup>29</sup> corroborated our findings, demonstrating that males displayed higher discrimination tendencies against gender-diverse individuals. Several factors might contribute to this difference, including greater exposure to LGBT matters, enhanced empathy, and increased openness to gender and sexuality. Research by Crocker and Major <sup>30</sup> suggests that individuals from stigmatized groups, like LGBT individuals, often demonstrate empathy towards other marginalized groups, fostering positive attitudes. Furthermore, personal relationships with LGBT individuals, such as friends or family members, can significantly influence attitudes, particularly among women. This underscores the importance of promoting understanding and empathy towards LGBT individuals across society, especially among those more prone to harboring stigmatizing attitudes.

### Strengths and limitations

This study investigated exposure to GSDM content in both positive and negative aspects across a variety of media types, a strength compared to previous studies that mainly

focused on specific types of media such as news, television programs, and films. Additionally, prior studies tend to include only those media contents revealing some positive or negative aspects, not holistically. However, several limitations should be considered when interpreting the findings. First, as a cross-sectional study, the direction of the casual relationship cannot be conclusively determined. Second, the study’s sample is limited to adolescents in the educational system of the OBEC in Bangkok, and therefore, the results may not be generalized to the broader population. While the reported percentage of adolescents identifying as LGBT (34.72%) in this study is notably high, it is improbable that such a significant portion of the adolescent population falls within this demographic. Nevertheless, it is essential to recognize the challenges faced by adolescents in disclosing their gender identity, especially given internal concerns about societal acceptance and external pressures to adhere to traditional gender norms. The fear of encountering stigma and discrimination often compels transgender youth to conceal their true identity, further complicating accurate demographic assessments. Moreover, the COVID-19 pandemic might have affected the data collection process, as many schools found it inconvenient to participate in the study, which may have affected the representativeness of the sample. Third, the data was collected through a self-report questionnaire, subject to bias and may not accurately represent the participants’ attitudes. Fourth, the research only focused on attitudes towards LGBT individuals and therefore does not provide a complete picture of bias towards other sexual identities such as asexual groups, queers, and non-binary individuals. Lastly, other potential factors influencing attitudes towards LGBT individuals, such as knowledge about LGBT, and LGBT acquaintances, were not explored in this study. Future research should explore these factors in more depth.

## Conclusion

These findings suggest that media can play a significant role in shaping attitudes towards LGBT individuals, and that exposure to positive representations of sexual diversity can lead to greater acceptance and lower levels of bias. Additionally, the study highlights the importance of considering the role of gender in media usage behaviors and exposure to different types of content related to sexual diversity. Overall, the study provides insights into the attitudes and experiences of Thai adolescents towards sexual diversity and can inform efforts to promote greater acceptance and understanding of LGBT individuals and sub-groups.

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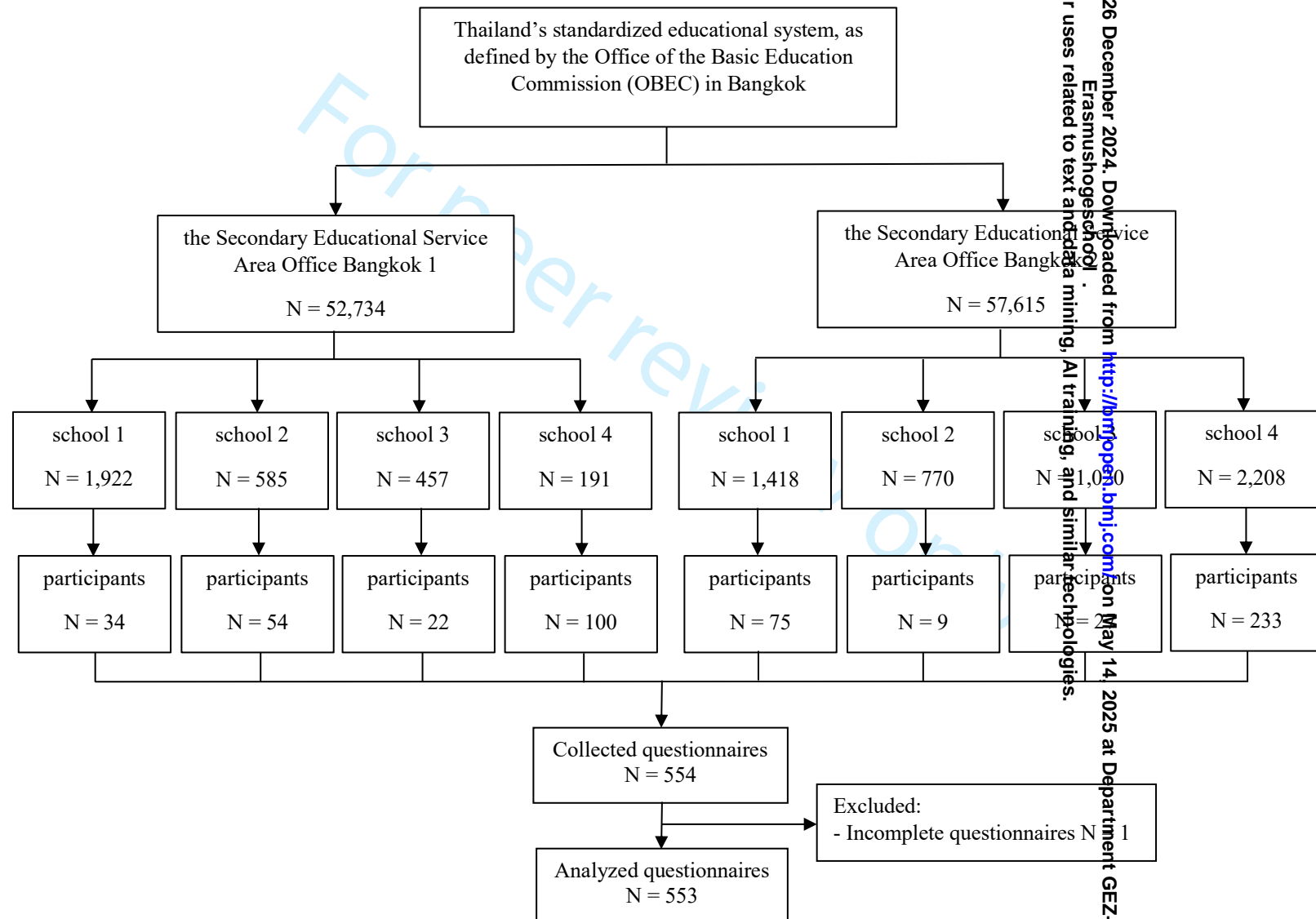
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Figure 1. Stratified convenience sampling of school in Thailand's standardized educational system, as defined by the Office of the Basic Education Commission (OBEC) in Bangkok



Supplementary table. Time of using each type of media in daily life (minutes/day).

Media used in daily life (Types of Media)	Min (min/ day)	Max (min/ day)	Total N = 553 (min/day) mean (S.D.)	Male N = 237 (42.91%) (min/day) mean (S.D.)	Female N = 316 (57.14%) (min/day) mean (S.D.)	t	p
Television	0	1380	111.14 (206.58)	116.32 (210.93)	107.26 (203.50)	0.51	0.610
Online	0	1439	395.58 (291.17)	391.66 (304.23)	398.52 (281.43)	-0.27	0.784
Streaming	0	1439	158.54 (210.36)	140.78 (214.61)	171.86 (206.46)	-1.72	0.086
DVDs	0	1200	20.38 (107.04)	25.23 (124.01)	16.73 (92.34)	0.92	0.356
Publication	0	1200	100.93 (181.12)	87.47 (191.06)	111.03 (172.91)	-1.52	0.130
Electronic-books	0	1200	111.55 (157.31)	87.59 (158.87)	129.52 (153.95)	-3.13	0.002**
Game player	0	1220	50.67 (155.11)	80.11 (196.17)	28.58 (110.39)	3.64	<0.001***
Computer games	0	1260	110.34 (210.60)	198.24 (263.51)	44.42 (124.60)	8.32	<0.001***
Mobile game	0	1380	153.77 (218.36)	208.24 (260.09)	112.92 (170.20)	4.91	<0.001***
Song	0	1410	248.60 (267.17)	242.30 (260.64)	253.33 (272.28)	-0.48	0.631
Podcasts	0	1140	32.36 (109.46)	40.84 (127.55)	26.00 (93.34)	1.58	0.115
Clubhouse	0	1170	25.25 (109.73)	32.78 (142.27)	19.61 (76.55)	1.291	0.197
Radio	0	1090	18.07 (85.49)	21.96 (102.20)	15.15 (70.43)	0.93	0.355
All types of media usage time	0	12310	1537.18 (1283.17)	1673.52 (1498.71)	1434.93 (1085.37)	2.08	0.038*

abbreviations: min = minimum, max = maximum, min = minutes, DVD = digital video discs, S.D. = standard deviation

# BMJ Open

## Association between exposure to gender and sexual diversity in media (GSDM) and Thai adolescents' attitude toward LGBT individuals: A cross-sectional study in Bangkok schools

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# Association between exposure to gender and sexual diversity in media (GSDM) and Thai adolescents' attitude toward LGBT individuals: A cross-sectional study in Bangkok schools

## Abstract

**Objective:** In recent years, global media has increasingly represented lesbian, gay, bisexual, and transgender<sup>1</sup> individuals, contributing to greater societal acceptance of diverse sexualities and gender identities. However, in Thailand, negative attitudes towards LGBT individuals remain prevalent, and media portrayals, both positive and negative, play a critical role in shaping public perceptions. These portrayals can significantly influence how different groups, particularly adolescents, view LGBT individuals. Given the importance of media in shaping attitudes, this study aims to explore the association between Thai adolescents' exposure to gender and sexual diversity in media (GSDM) and their stigmatizing attitudes toward LGBT individuals.

**Setting:** A cross-sectional survey was conducted during the 1st and 2nd semesters of the academic year 2021 in eight schools located in Bangkok, Thailand.

**Participants:** Adolescents from these schools completed a survey assessing demographics, exposure to GSDM, and stigmatizing attitudes toward LGBT individuals. The LGBTQ stigma scale was used for attitudes, and media exposure was measured using a researcher-developed questionnaire. Linear regression analysis was conducted to test the association between exposure to GSDM and stigmatizing attitudes.

**Results:** Out of 553 participants, with an average age of 16.34 years (ranging from 14 to 20 years), a third identified as LGBT (34.72%). Participants had moderate exposure to both positive and negative GSDM content (PGSDM and NGSDM, respectively), with those assigned female at birth more exposed to PGSDM than those assigned male at birth, and exhibiting lower levels of stigmatization. Adolescents assigned female at birth and those who identified as LGBT

displayed significantly lower stigmatization than those assigned male at birth and non-LGBT individuals. Adolescents overall exhibited generally low stigmatization toward LGBT individuals, with higher levels of stigmatization linked to exposure to NGSDM ( $\beta = 0.80$ , 95% *CI*: 0.35-1.25). In contrast, PGSDM exposure was associated with reduced stigmatization ( $\beta = -2.73$ , 95% *CI*: -3.10- -2.35).

**Conclusions:** Thai adolescents generally exhibit low levels of stigmatization toward LGBT individuals. The study found an association between positive GSDM exposure and lower levels of stigmatization, while negative exposure was linked to higher levels of stigmatization. These findings suggest that media literacy programs emphasizing positive portrayals of gender diversity may be beneficial in promoting acceptance and reducing bias.

**Keywords:** adolescents, gender and sexual diversity, media, LGBT individuals, stigmatizing attitudes

**Data availability statement**

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

**Strengths and limitations of this study**

- This study investigated both positive and negative exposure to GSDM across a wide variety of media types, offering a more comprehensive perspective compared to prior studies that focused on specific forms of media.
- Previous studies often examined media content in isolation, whereas this study considered media exposure holistically, including a range of platforms.
- As a cross-sectional study, it cannot determine causal relationships between media exposure and attitudes toward LGBT individuals.
- The sample is limited to adolescents in the OBEC educational system in Bangkok, which may restrict the generalizability of the findings to broader populations.

- Data collection through self-reported questionnaires is subject to bias, and the focus on LGBT individuals may not fully capture biases toward other sexual identities.

## Introduction

In recent years, many countries have become more recognizant of sexual and gender diversity, as evidenced by an increase in media representation of LGBT individuals. According to the annual report by the Gay and Lesbian Alliance Against Defamation (GLAAD) <sup>2,3</sup>, there were 775 LGBT characters broadcast during the survey period from June 1<sup>st</sup>, 2021 to May 31<sup>st</sup>, 2022, accounting for 12% of all characters. This increased media representation is thought to be a contributing factor to the growing acceptance of diverse genders <sup>4</sup>, aligning with a previous study by Calzo and Ward <sup>5</sup>, which found a significant link between media consumption and more accepting attitudes toward homosexuality.

In Thailand, the 2022 National Institute of Development Administration (NIDA) poll <sup>6</sup> showed a growing acceptance of the third gender, often understood in the local context as trans individuals, with 92.82% of respondents accepting friends or colleagues as such (up from 90.15% in 2019), and 90.61% accepting family members or relatives (up from 86.81% in 2019). According to the Williams Institute's Global Acceptance Index <sup>7</sup>, social acceptance of LGBT individuals in Thailand has increased since the 1980s. However, compared to the United States and Western European countries, Thailand still exhibits lower acceptance levels. Despite positive trends, discrimination and stigmatization persist in Thailand, particularly in areas like the workplace and access to gender-concordant identity documents. While same-sex relationships are not criminalized, Thailand has yet to fully legalize same-sex marriage, though the introduction of civil partnership bills indicates progress. Challenges remain for LGBT



individuals, especially regarding full legal gender recognition, affecting their access to services and legal rights.

Gender and Sexual Diversity in Media (GSDM) refers to the representation and portrayal of individuals of different sexual orientations and gender identities/expressions (diverse SOGIE) across various forms of media, including movies, TV shows, advertisements, news articles, and social media. Social media, in particular, has significantly changed the portrayal of LGBT individuals, particularly transgender people, by offering more diverse and positive representations. Online platforms foster supportive communities, allowing transgender individuals to document their journeys and access real-life role models. This online presence helps counterbalance the stereotypical or negative perception of LGBT individuals <sup>8</sup>.

Research has shown that positive portrayals of gender and sexual diversity in media are generally associated with lower levels of stigmatization, while negative portrayals can reinforce prejudice <sup>9</sup>. However, conflicting findings complicate this narrative, as some studies suggest that even negative portrayals may reduce social distance and challenge stereotypes through increased visibility. Repeated exposure to LGBT characters, regardless of tone, can contribute to more positive attitudes <sup>10</sup>. Given the limited number of studies exploring both positive and negative portrayals of LGBT individuals, drawing firm conclusions about their overall impact remains challenging.

The impact of GSDM on shaping people's perceptions of gender roles and stereotypes, as well as how individuals are treated in society, underscores its significance as a research subject. Previous studies have highlighted that exposure to GSDM across various platforms can contribute to positive societal changes, especially among younger generations <sup>11</sup>. For instance, Thai films have played a critical role in providing a platform for individuals not traditionally accepted by mainstream society,

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2  
3 facilitating a broader understanding of LGBT identities <sup>12</sup>. Similarly, a study on Yaoi  
4 (Y)-fiction literature, characterized by the Japanese terms 'yaoi' for male-male  
5 relationships and 'yuri' for female-female relationships, has shown its potential to  
6 increase acceptance of sexual diversity among readers, thus promoting gender equality  
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15 However, the portrayal of gender-diverse individuals in mainstream media has  
16 historically been problematic, often hyper-sexualizing or mocking them. Encouragingly,  
17 the evolution of contemporary media platforms, such as streaming services, has paved  
18 the way for more authentic and nuanced depictions of love and relationships,  
19 subsequently leading to a surge in LGBT characters and content <sup>14</sup>. In particular, the  
20 trend involving Y-media, in forms of fiction and series, has witnessed a significant  
21 increase in recent days <sup>13</sup>.  
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31 While it is evident that exposure to such media has the potential to foster  
32 positive attitudes towards LGBT individuals, it remains an unfortunate reality that  
33 negative stereotypes persist, particularly in Thai media. Such negative portrayals can  
34 contribute to the solidification of narrow perceptions surrounding gender-diverse  
35 individuals, thereby perpetuating discrimination and curtailing their rights <sup>15</sup>.  
36 Furthermore, a survey conducted by the United Nations Development Programme <sup>16</sup> in  
37 2018-2019 found that despite increased acceptance and representation of gender-diverse  
38 individuals in media and society, they still face restrictions on their rights and  
39 discrimination due to societal judgment. Moreover, the lack of understanding of the  
40 sub-groups within the LGBT community leads to differing levels of acceptance towards  
41 these individuals <sup>3</sup>.  
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56 This study aims to assess the association between positive (PGSDM) versus  
57 negative (NGSDM) gender-diverse media portrayals and adolescent attitudes toward  
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LGBT individuals in Thailand. Specifically, the research questions explore adolescents' levels of exposure to PGSDM and NGSDM, their attitudes toward LGBT individuals, and how exposure to both types of GSDM is associated with these attitudes. The hypotheses are that adolescents exhibit high levels of exposure to PGSDM, low levels of stigmatization toward LGBT individuals, and that exposure to PGSDM is associated with less stigmatization, while exposure to NGSDM is associated with higher levels of stigmatization. This study addresses gaps in previous research, which has often overlooked the varied effects of different media portrayals and rarely examined the nuanced experiences within different LGBT sub-groups, especially in a Thai context. By utilizing a cross-sectional survey methodology, the study captures current attitudes and media exposure, providing valuable insights into the relationship between media consumption and adolescents' attitudes toward sexual diversity in Thai society.

**Methodology**

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Faculty of Medicine, Ramathibodi Hospital. This research has been approved by the Human Research Ethics Committee at a university-affiliated hospital. The approval number is MURA2021/486. The research adopted a cross-sectional survey methodology to collect data from students in Mathayom 4-6 (Grade 10-12) within Thailand’s standardized educational system, as defined by the Office of the Basic Education Commission (OBEC) in Bangkok, covering the Secondary Educational Service Area Office Bangkok 1 and 2. Data collection occurred during the 1<sup>st</sup> and 2<sup>nd</sup> semesters of the academic year 2021 (Figure 1).

<Figure 1 Here>

## Sample and participants

The sample size was calculated using the Taro Yamane formula targeting a 95% confidence level and a 5% margin of error, resulting in a minimum required sample size of 400 participants. To account for potential data loss, an additional 25% (100 participants) was added, bringing the total sample size to a minimum of 500 participants. Eligible students were those who could understand Thai and complete the questionnaire independently, with no exclusion criteria set for study participation.

Due to the COVID-19 pandemic's impact, some schools were hesitant to participate. Therefore, a purposive sampling method was employed to select four schools from each Secondary Educational Service Area Office Bangkok (1 and 2). Subsequently, researchers worked with teachers to choose classrooms and students via convenience sampling to fill out the online questionnaire. Prior to participation, the research team provided a verbal explanation of the study's purpose and procedures to all potential participants. Students were subsequently required to provide their consent via an online form, ensuring that they were fully informed and agreed to participate in the study voluntarily.

A total of 554 adolescents participated in the survey. However, one participant did not provide complete information, leaving 553 valid responses for analysis. As a result, the final analytical sample comprised 553 participants (Figure 1).

## Measurements

The data collection instrument was an online questionnaire divided into three sections. The first section aimed to collect basic demographic information, including age, birth sex (male or female), gender identity and sexual orientation (heterosexual, bisexual, homosexual, transgender, and unsure). Participants who identified their gender identity and sexual orientation as heterosexual were grouped into the non-LGBT

category, while those who identified as transgender, homosexual, bisexual, or were unsure were grouped into the LGBT category. The questionnaire also collected information about the participants' academic level, religions, and whether any of their family members identified as LGBT.

The second section examined participants' media consumption habits and exposure to positive and negative media content related to gender and sexual diversity. Participants were asked to self-report their average daily media usage across various platforms (e.g., television, YouTube, books, e-books, mobile games, radio) over the past six months. The total time spent on media is derived from combining the time spent on each media type. This also included 28 questions on exposure to media content related to diverse sexualities (supplementary questionnaire), with half focusing on positive content related to gender and sexual diversity in media (PGSDM), and the other half on negative content related to gender and sexual diversity in media (NGSDM). The questionnaire was developed by the researchers with insights from psychiatry and adolescent media use experts who also provided healthcare services to LGBT individuals. The questionnaire underwent a pilot test with five students sharing demographic similarities with the target group. Feedback was incorporated after consulting with the experts. Responses were measured on a scale from never (1 point) to always (5 points), indicating the frequency of exposure to PGSDM (min-max = 14 - 70) and NGSDM content (min-max = 14 - 70). The questionnaire's content validity was verified by three healthcare professionals with expertise in gender and sexual diversity, achieving an Item-Objective Congruence (IOC) score of 0.90. Its reliability was confirmed through Cronbach's alpha, showing excellent internal consistency overall ( $\alpha = 0.92$ ), and for questions on positive ( $\alpha = 0.86$ ) and negative ( $\alpha = 0.89$ ) media content exposure.

The third section utilized the LGBTQ stigma scale <sup>3</sup> to assess stigmatizing attitudes towards LGBT individuals, adapted to the "LGBT stigma scale" for better contextual relevance within Thai society. This scale has been used in previous studies, such as in 'Homophobia in the Country? Rural America and the Stigmatization of LGBTQ People: An Empirical Test of Norm-Centered Stigma Theory,' which examines stigma in rural populations. However, no known studies have applied this scale specifically to adolescents. This adaptation excluded references to individuals identifying as queer, as the term is not widely recognized in the Thai context. More specific terms like lesbian, gay, bisexual, and transgender are commonly used, and including 'queer' could have caused confusion, affecting response accuracy. The scale, consisting of 84 self-rated questions, was translated into Thai following the World Mental Health Composite International Diagnostic Interview (WMH-CIDI) protocol <sup>17</sup> and piloted with five students. Revisions were made based on expert feedback. It covered six themes reflecting biases against various LGBT sub-groups: lesbian women, gay men, bisexual women, bisexual men, transgender women, and transgender men.<sup>1</sup> Each theme contained 14 items across six sub-themes, ranging from social/family relationships to perceptions of femininity/masculinity. Responses ranged from strongly disagree (1 point) to strongly agree (5 points), with reverse scoring for items conveying positive sentiments (items 1, 2, 6, 7, 11, and 12 in each theme). The overall score ranged from 84 to 420, and each subscale score ranged from 14 to 70. Higher scores indicated stronger stigmatizing attitudes towards LGBT individuals. The scale demonstrated excellent reliability ( $\alpha = 0.99$ ), with each identity group section also showing good reliability ( $\alpha$  ranging from 0.82 to 0.85).

**Statistical analysis**

The data was analyzed using SPSS Statistics (version 16, IBM Corporation). Descriptive statistics were used to report the frequency, percentage, mean, and standard deviation of demographic data, time spent on each media type, and stigmatization score towards LGBT individuals. The chi-square test was employed to examine differences in demographic data between males and females, and a t-test was used to compare the time spent on each media type and stigmatizing attitudes scores towards LGBT individuals between these groups. A block-wise linear regression analysis was conducted to identify predictors of stigmatizing attitudes towards LGBT individuals. In the first step, control variables, including age, birth sex, LGBT versus non-LGBT gender and sexual identity, presence of LGBT individuals in the family, and overall media usage time, were introduced into the model. The main predictors, PGDSM and NGSDM, were added in the second and third steps. This analysis was performed to test our hypotheses. Only one incomplete response (out of 554) was excluded from the analysis due to missing data.

**Patient and public involvement**

Patients or the public were not involved in the design, conduct, reporting or dissemination plans of our research.

**Results**

**Demographic data**

According to Table 1, 553 participants responded to the questionnaire. The average age was 16 years (min-max = 14-20, SD = 0.86), with 43% assigned male at birth and 57% assigned female at birth. Two-thirds of the participants (65%) identified as non-LGBT,



while one-third (35%) identified as LGBT. Additionally, 14% of participants reported having a family member who identified as LGBT.

**Table 1. Characteristics of the sample population**

Demographic Variables		Total N = 553 N (%)	Male N = 237 (42.91%) N (%)	Female N = 316 (57.14%) N (%)	$\chi^2$	p
Sexual orientation	Non-LGBT	361 (65.28)	187 (78.90)	174 (55.06)	33.96	<0.001***
	LGBT	192 (34.72)	50 (21.10)	142 (44.94)		
Religion	Buddhism	505 (91.32)	222 (93.67)	283 (89.55)	2.90	0.089
	Others	48 (8.68)	15 (6.32)	33 (10.44)		
Current grade	Grade 10	132 (23.86)	44 (18.57)	88 (27.85)	8.10	0.017*
	Grade 11	88 (15.91)	158 (66.67)	175 (55.38)		
	Grade 12	333 (60.21)	35 (14.77)	53 (16.77)		
Presence of LGBT in family	No	473 (85.53)	215 (90.72)	258 (81.65)	9.01	0.003**
	Yes	80 (14.46)	22 (9.28)	58 (18.35)		
	Lesbian	27 (24.32)				
	Gay	21 (18.92)				
	Bisexual women	35 (31.53)				
	Bisexual men	5 (4.50)				
	Trans women	13 (11.71)				
	Trans men	10 (9.01)				
Continuous Variables		Total Mean (SD)	Male Mean (SD)	Female Mean (SD)	t	p
Total media usage time (minutes)		1537.18 (1283.17)	1673.52 (1498.71)	1434.93 (1085.37)	2.08	0.038*
Exposure to GSDM content <sup>a</sup>	PGSDM	48.46 (10.40)	43.67 (11.04)	52.05 (8.24)	-9.82	<0.001***
	NGSDM	31.47 (7.78)	31.24 (8.56)	31.64 (7.15)		

Abbreviation: GSDM = gender and sexual diversity in media, PGSDM = positive content related to gender and sexual diversity in media, NGSDM = negative content related to gender and sexual diversity in media; a = range of the sum scores for exposure to GSDM content 63.14 - 70.00 means very frequent, 49.14 - 63.13 means frequent, 35.14 - 49.13 means occasional, 21.14 - 35.13 means rare, and 14.03 - 21.13 means never; \* = p-value < 0.05, \*\* = p-value < 0.01, \*\*\* = p-value < 0.001

## Media exposure

Participants reported using various media forms over the past 6 months, with the most frequently used being online media, averaging 395.58 minutes per day (6 hours and 36 minutes) (supplementary table 1), music was the next most popular, averaging



248.60 minutes per day (4 hours and 9 minutes), while radio programs were the least used, averaging 18 minutes per day.

Most participants reported moderate exposure to GSDM content with an overall exposure score to GSDM content was 79.93. PGSDM content exposure was at a moderate level (average score = 48.46), while NGSDM content exposure was at a low level (average score = 31.47) (Table 1). Although participants assigned male at birth spent more time on media than those assigned female at birth ( $t = 2.08$ ,  $p = 0.038$ ), participants assigned female at birth reported significantly more exposure to PGSDM content ( $t = -9.82$ ,  $p < 0.001$ ). Exposure to NGSDM content was similar between participants assigned male and female at birth.

**Table 2. Mean of LGBT stigma scores and differences between males and females**

Stigmatization toward LGBT	Min	Max	Total N = 553 mean of sum score (S.D.)	Male N = 237 (42.91%) mean of sum score (S.D.)	Female N = 316 (57.14%) mean of sum score (S.D.)	t	p
LGBT individuals in general <sup>a</sup>	84	275	165.82 (56.69)	196.95 (53.49)	142.48 (47.05)	12.47	<0.001***
lesbian women <sup>b</sup>	14	46	26.63 (8.68)	31.40 (8.68)	23.05 (6.75)	12.27	<0.001***
gay men <sup>b</sup>	14	54	27.69 (9.52)	32.85 (9.08)	23.82 (7.87)	12.25	<0.001***
bisexual women <sup>b</sup>	14	52	27.47 (9.93)	32.86 (9.48)	23.43 (8.21)	12.24	<0.001***
bisexual men <sup>b</sup>	14	48	27.95 (10.11)	33.23 (9.48)	23.98 (8.66)	11.78	<0.001***
trans women <sup>b</sup>	14	58	28.03 (10.24)	33.35 (9.56)	24.03 (8.82)	11.72	<0.001***
trans men <sup>b</sup>	14	50	28.06 (10.18)	33.26 (9.68)	24.16 (8.72)	11.40	<0.001***

a = The average overall score of stigmatization towards LGBT (378.84 - 420.00 means the highest level of stigmatization, 294.84 - 378.83 means a high level of stigmatization, 210.84 - 294.83 means a moderate level of stigmatization, 126.84 - 210.83 means a low level of stigmatization, and 84.00 - 126.83 means the least level of stigmatization), b = average total score of stigmatizations against LGBT separated by subgroups (63.14 - 70.00 means the highest level of stigmatizations, 49.14 - 63.13 means a high level of stigmatization, 35.14 - 49.13 means a moderate stigmatization, 21.14 - 35.13 means a low level of stigmatizations, and 14.00 - 21.13 means the least level of stigmatization); \*\*\* = p-value < 0.001

**Attitudes towards LGBT individuals**

As depicted by Table 2, the overall mean score for the LGBT stigma scale was 165.82, within the possible range of 84.00–420.00, indicating a low level of stigmatization (126.84–210.83). Each subscale had a possible range of 14.00–70.00. Participants showed the highest stigmatization towards trans men (average score = 28.06), followed by trans women (average score = 28.03) and bisexual men (average score = 27.95), all within the low stigmatization range (21.14–35.13). Participants assigned male at birth had higher stigmatization scores across all sexual and gender

identities than those assigned female at birth, with mean stigma scores of 196.95 and 142.48, respectively. In terms of attitudes within LGBT subgroups, participants assigned male at birth demonstrated the highest stigma score against trans women. In contrast, those assigned female at birth showed the highest stigmatization towards trans men.

### **Relationship between exposure to GSMD and stigmatizing attitudes towards LGBT individuals**

Table 3 reveals that exposure to PGSMD content was significantly associated with lower stigmatization levels towards LGBT individuals in general ( $\beta = -2.73$  (-3.10- -2.35),  $p < 0.001$ ), as well as across all LGBT subgroups ( $\beta$  ranging from -0.48 (-0.54- -0.41) to -0.43 (-0.49- -0.37),  $p < 0.001$ ). Conversely, exposure to NGSDM content was associated with higher stigmatization levels towards LGBT individuals in general ( $\beta = 0.80$  (0.35-1.25),  $p = 0.001$ ), and across all subgroups ( $\beta$  ranging from 0.11 (0.04-0.18) to 0.15 (0.07-0.24),  $p = 0.001$ -0.005). Together, PGSMD and NGSDM explained a significant portion of the variance in stigmatizing attitudes ( $R^2 = 0.47$ ).

Control variables significantly associated with higher stigmatizing attitudes were being assigned female at birth (vs. assigned male at birth) and being LGBT (vs. non-LGBT). Participants assigned female at birth ( $\beta = -26.71$  (-34.50- -18.92),  $p < 0.001$ ) and LGBT participants ( $\beta = -18.50$  (-26.24- -10.77,  $p < 0.001$ ) demonstrated significantly lower stigmatization levels towards LGBT individuals overall and across every subgroup (details on significant values can be found in supplementary table 2).

Table 3. Relationship between exposure to LGBT media and LGBT stigma scores

	LGBT individuals in general	Lesbian women	Gay men	Bisexual women	Bisexual men	Trans women	Trans men
	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)
Age (years)	1.48 (-2.55-5.51)	0.18 (-0.45-0.80)	0.28 (-0.41-0.970)	0.27 (-0.45-0.98)	0.33 (-0.41-1.078)	0.20 (-0.57-0.96)	0.23 (-0.53-0.98)
Female	-26.71 (-34.50- -18.92)***	-4.21 (-5.41- -3.01)***	-4.50 (-5.83- -3.17)***	-4.69 (-6.08- -3.307)***	-4.47 (-5.91- -3.04)***	-4.59 (-6.0- -3.12)***	-4.53 (-6.0- -2.78)***
LGBT	-18.50 (-26.24- -10.77)***	-2.17 (-3.36- -0.98)***	-3.16 (-4.48- -1.83)***	-2.90 (-4.28- -1.53)***	-3.29 (-4.72- -1.86)***	-3.31 (-4.7- -1.85)***	-3.33 (-4.7- -2.22)***
Presence of LGBT in family	-2.17 (-12.42-8.08)	0.10 (-1.48-1.68)	-0.52 (-2.28-1.23)	-0.09 (-1.92-1.73)	-0.37 (-2.27-1.52)	-0.52 (-2.46-1.41)	-0.76 (-2.68-1.17)
Media usage time	0.00 (0.00-0.01)	0.00 (0.00-0.01)	0.00 (0.00-0.01)	0.00 (0.00-0.01)	0.00 (0.00-0.01)	0.00 (0.000-0.001)	0.00 (0.00-0.01)
PGSDM	-2.73 (-3.10- -2.35)***	-0.43 (-0.49- -0.37)***	-0.44 (-0.51- -0.38)***	-0.48 (-0.54- -0.41)***	-0.47 (-0.54- -0.40)***	-0.46 (-0.53- -0.39)***	-0.46 (-0.53- -0.39)***
NGSDM	0.80 (0.35-1.25)**	0.11 (0.04-0.18)**	0.14 (0.06-0.22)**	0.14 (0.05-0.22)**	0.15 (0.07-0.24)***	0.14 (0.06-0.23)**	0.12 (0.04-0.21)**

Abbreviations: LGBT = lesbian, gay, bisexual, transgender, Trans = transgender, PGSDM = positive gender and sexual diverse media content, NGSDM = negative gender and sexual diverse media content; \* = p-value < 0.05, \*\* = p-value < 0.01, \*\*\* = p-value < 0.001

## Discussion

This study aimed to explore Thai adolescents' exposure to GSDM and its association with stigmatizing attitudes towards LGBT individuals. Specifically, we hypothesized that exposure to positive GSDM (PGSDM) would be associated with lower levels of stigmatization, while exposure to negative GSDM (NGSDM) would be associated with higher levels of stigmatization. Furthermore, we sought to address the gap in understanding how Thai adolescents engage with diverse media content and how this engagement shapes their attitudes toward LGBT individuals and subgroups.

The study found that Thai adolescents are moderately exposed to GSDM, with a majority reporting more exposure to positive representations of gender and sexual diversity than negative ones. Adolescents assigned female at birth reported higher exposure to positive GSDM content than those assigned male at birth. Overall, adolescents in Thailand demonstrate low stigmatizing attitudes towards LGBT individuals in general and sub-groups. As hypothesized, exposure to PGSDM content is associated with lower levels of stigmatization towards LGBT individuals in general and sub-groups, while exposure to NGSDM content is associated with higher levels of stigmatization.

### Exposure to GSDM among adolescents

The study revealed that Thai adolescents are moderately exposed to GSDM content, with positive representations reported more frequently than negative ones. This shift contrasts with earlier studies from the 2000s, which documented negative stereotypes of LGBT individuals in media, particularly on TV<sup>18, 19</sup>. Social media has played a key role in this change by offering more diverse and positive portrayals of LGBT individuals,

especially transgender people, and providing real-life role models. This aligns with research by Cook <sup>20</sup> and Nölke <sup>14</sup>, who observed an increasing number of positive LGBT representations in mainstream media.

Globally, studies have shown that adolescents report varying levels of exposure to positive and negative GSDM content. For instance, studies in Western contexts indicate that exposure to positive LGBT representations is becoming more common <sup>21</sup>, while negative stereotypes persist in certain media formats <sup>22</sup>.

In Thailand, the media landscape has evolved over the years, with portrayals of LGBT individuals, once dominated by negative stereotypes <sup>23</sup>, becoming more nuanced. While genres such as Boys Love (BL) dramas have contributed to increasing visibility for gay characters <sup>24</sup>, other LGBT identities remain underrepresented in both entertainment and news media <sup>15</sup>. The findings of this study also highlight a difference in exposure to PGSDM content based on birth sex, with participants assigned female at birth showing greater exposure than those assigned male at birth. This may be attributed to differing media preferences, as previous research shows males spent more time on gaming media <sup>25</sup>, while females engaged more with e-books and romance genres, which often feature diverse representations of gender and sexuality <sup>26,27</sup>.

**Attitudes of adolescents toward LGBT individuals**

Our study revealed that adolescents in Thailand reported, on average, low levels of stigmatizing attitudes towards LGBT individuals in general and subgroups, aligning with previous surveys conducted by NIDA <sup>6</sup>, as well as findings from other Southeast Asian nations such as Singapore and the Philippines <sup>28</sup>.

We found that LGBT participants exhibited lower levels of prejudice towards LGBT individuals compared to non-LGBT groups, which aligns with Worthen's work<sup>3</sup>. Additionally, participants assigned female at birth exhibited lower stigmatization levels towards LGBT individuals than those assigned male at birth. This difference may be due to the rigid socialization of men into traditional masculinity, which often involves rejecting traits perceived as feminine. Trans women, who challenge these norms by embodying femininity, may experience higher levels of stigmatization from men. Research shows that men often react negatively to gender nonconformity, as it is perceived as a threat to traditional masculine identities. Conversely, those assigned female at birth may stigmatize trans men, viewing them as rejecting conventional female roles, which can disrupt traditional gender expectations and cause discomfort<sup>29</sup>,<sup>30</sup>. Greater exposure to LGBT matters, enhanced empathy, and openness to gender and sexuality may contribute to these differences<sup>31</sup>. Personal relationships with LGBT individuals, such as friends or family members, can also significantly influence attitudes, particularly among women, underscoring the importance of fostering understanding and empathy towards LGBT individuals across society.

### **Relationship between exposure to GSDM and stigmatizing attitudes towards LGBT individuals**

The study found that exposure to PGSDM content is associated with lower levels of stigmatization towards LGBT individuals in general and sub-groups, while exposure to NGSDM content is associated with higher levels of stigmatization. These findings align with previous research, such as a study by Bonds-Raacke et al.<sup>32</sup> found that thinking positively about gender-diverse characters led to more favorable attitudes toward gay individuals. Kathinthong's<sup>13</sup> research underscored the influence of Y-fiction

on acceptance levels of gender and sexual diversity among female readers, revealing their potential to promote gender equality. These findings underscore the potential of media representation in shaping attitudes toward LGBT individuals and highlight the responsibility of media creators to present diverse and positive portrayals. Informed by social cognitive learning theory, media characters, and scenes serve as symbolic representations that influence adolescents' attitudes. The recurrence of media exposure may foster fixed perceptions, in line with representation theory, which suggests that media tends to emphasize certain characteristics of people or objects, potentially distorting the audience's perception of reality.

**Strengths and limitations**

This study investigated exposure to GSDM content in both positive and negative aspects across a variety of media types, covering both positive and negative aspects, which is a strength compared to previous studies that focused on specific types of media such as news, television programs, and films. With the prevalence of online media, adolescents can now choose much of the content they consume (e.g., streaming specific movies or following social media channels). Adolescents with less stigmatizing attitudes towards LGBT individuals may be more inclined to consume LGBT-positive media, which is a limitation when interpreting the results.

Several limitations should be considered when interpreting the findings. First, as a cross-sectional study, the direction of the causal relationship cannot be conclusively determined. Second, the study's sample is limited to adolescents in the educational system of the OBEC in Bangkok, and therefore, the results may not be generalized to the broader population. Although a notably high percentage of adolescents (34.72%) identify as LGBT in this study, this figure may be influenced by factors such as

challenges in disclosing gender identity and sexual identity, internal concerns about societal acceptance, and external pressures to conform to traditional gender norms. The fear of encountering stigma and discrimination may lead many transgender and nonbinary youth to conceal their identities, complicating demographic assessments.

Furthermore, the COVID-19 pandemic affected the data collection, as many schools were hesitant to participate, potentially impacting the sample's representativeness. Third, the data was collected through a self-report questionnaire, which is subject to bias and may not accurately represent the participants' attitudes. Fourth, the research focused on attitudes towards LGBT individuals and did not explore bias towards other gender and sexual identities such as asexual, queer, and non-binary individuals. Lastly, other potential factors influencing attitudes towards LGBT individuals, such as knowledge about LGBT, and LGBT acquaintances, were not explored in this study. Future research should explore these factors in more depth.

## Conclusion

These findings suggest that media exposure may influence attitudes towards LGBT individuals and that exposure to positive representations of gender and sexual diversity is potentially associated with greater acceptance and lower levels of bias. Additionally, the study highlights the importance of considering the role of gender in media usage behaviors and exposure to different types of content related to gender and sexual diversity. Overall, the study provides insights into the attitudes and experiences of Thai adolescents towards gender and sexual diversity, which may help inform efforts to promote greater acceptance and understanding of LGBT individuals in general and sub-groups.



**Application of the study**

The findings of this study offer potential applications. Media literacy programs could be designed to help adolescents critically engage with gender and sexual diversity in media, encouraging reflection on how these portrayals shape attitudes. Policymakers may find value in these results when considering guidelines for more inclusive media representation. Similarly, media professionals could focus on creating more balanced portrayals of LGBT individuals. While this study only identifies associations, future research should explore how long-term media exposure influences adolescents' attitudes toward LGBT individuals.

**Statements and Declarations**

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**Contributorship Statement**

SR, KK, SP, KS, and AJ contributed to the conception and design of the study. SR and KK performed material preparation, data collection, and analysis. The first draft of the

manuscript was written by SR and KK. SR and KK completed revisions based on reviewer comments. SR, KK, SP, KS, and AJ reviewed and commented on previous versions of the manuscript, and all read and approved the final manuscript. KK accepts full responsibility as the guarantor for the integrity and accuracy of the work. ChatGPT-4o was used in the development of this manuscript. These tools assisted with grammar checks, clarity improvements, and formatting consistency. All intellectual content, including the research design, data interpretation, and final conclusions, was created and verified by the authors. The authors take full responsibility for the integrity and accuracy of the content presented in this study.

### Competing Interests

The authors have no competing interests to declare that are relevant to the content of this article.

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### Data availability statement

The data supporting the findings of this study are available upon request.

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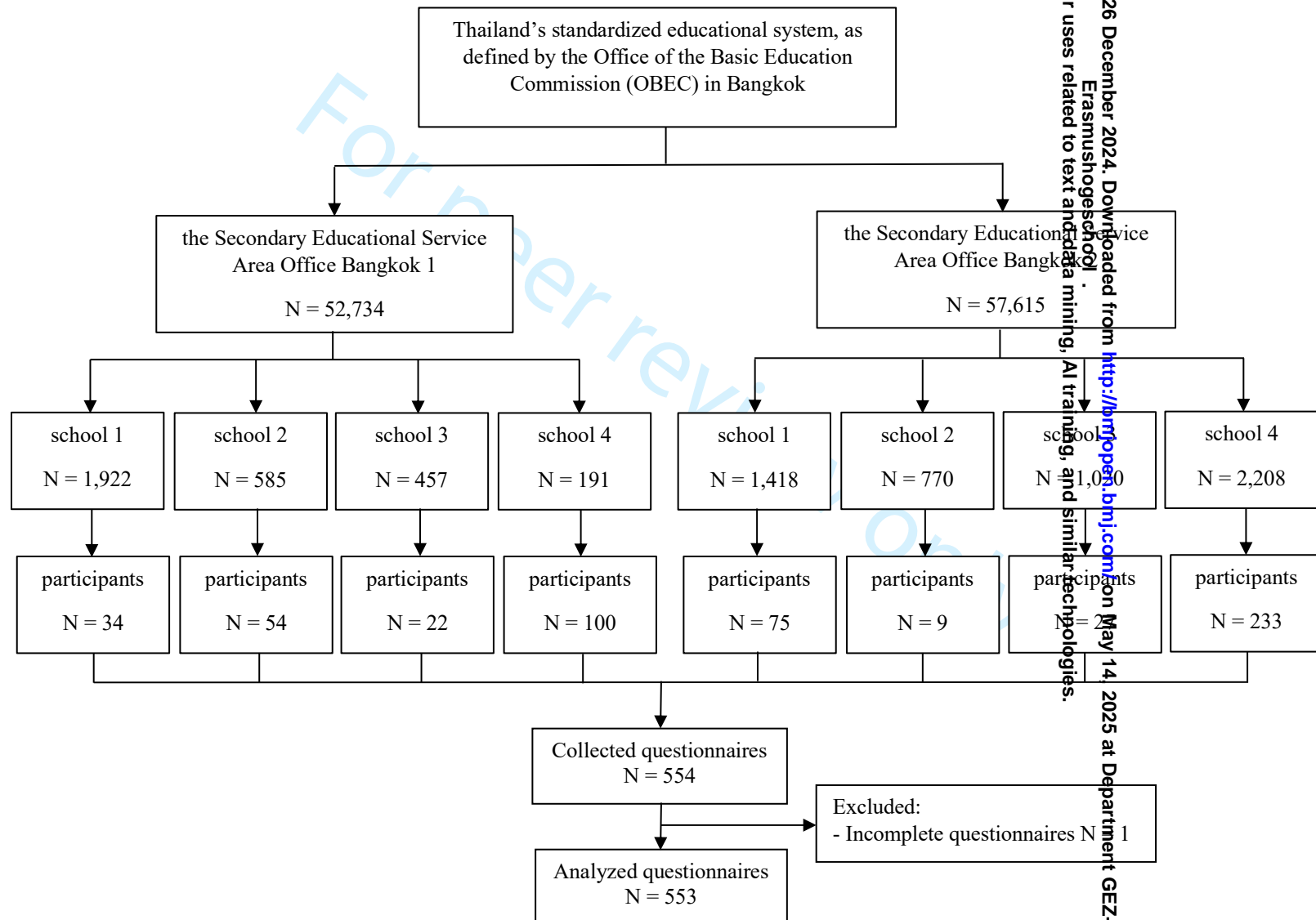
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Figure 1. Stratified convenience sampling of school in Thailand's standardized educational system, as defined by the Office of the Basic Education Commission (OBEC) in Bangkok

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Figure 1. Stratified convenience sampling of school in Thailand's standardized educational system, as defined by the Office of the Basic Education Commission (OBEC) in Bangkok



Supplementary table 1. Time of using each media type in daily life (minutes/day)

Media used in daily life. (Types of Media)	Min (min/ day)	Max (min/ day)	Total N = 553 (min/day) mean (S.D.)	Male N = 237 (42.91%) (min/day) mean (S.D.)	Female N = 316 (57.14%) (min/day) mean (S.D.)	t	p
Television	0	1380	111.14 (206.58)	116.32 (210.93)	107.26 (203.50)	0.51	0.610
Online	0	1439	395.58 (291.17)	391.66 (304.23)	398.52 (281.43)	-0.27	0.784
Streaming	0	1439	158.54 (210.36)	140.78 (214.61)	171.86 (206.46)	-1.72	0.086
DVDs	0	1200	20.38 (107.04)	25.23 (124.01)	16.73 (92.34)	0.92	0.356
Publication	0	1200	100.93 (181.12)	87.47 (191.06)	111.03 (172.91)	-1.52	0.130
Electronic books	0	1200	111.55 (157.31)	87.59 (158.87)	129.52 (153.95)	-3.13	0.002**
Video games	0	1220	50.67 (155.11)	80.11 (196.17)	28.58 (110.39)	3.64	<0.001***
Computer games	0	1260	110.34 (210.60)	198.24 (263.51)	44.42 (124.60)	8.32	<0.001***
Mobile game	0	1380	153.77 (218.36)	208.24 (260.09)	112.92 (170.20)	4.91	<0.001***
Song	0	1410	248.60 (267.17)	242.30 (260.64)	253.33 (272.28)	-0.48	0.631
Podcasts	0	1140	32.36 (109.46)	40.84 (127.55)	26.00 (93.34)	1.58	0.115
Clubhouse	0	1170	25.25 (109.73)	32.78 (142.27)	19.61 (76.55)	1.291	0.197
Radio	0	1090	18.07 (85.49)	21.96 (102.20)	15.15 (70.43)	0.93	0.355
All types of media usage time	0	12310	1537.18 (1283.17)	1673.52 (1498.71)	1434.93 (1085.37)	2.08	0.038*

abbreviations: min = minimum, max = maximum, min = minutes, DVD = digital video discs, S.D. = standard deviation

Supplementary table 2. Relationship between exposure to LGBT media and LGBT stigma scores

	Overall LGBT individuals		Lesbian women		Gay men		Bisexual women		Bisexual men		Trans women		Trans men	
	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value	$\beta$ (95% CI)	p-value
Age (years)	1.48 (-2.55-5.51)	0.471	0.18 (-0.45-0.80)	0.579	0.28 (-0.41-0.970)	0.423	0.27 (-0.45-0.98)	0.467	0.33 (-0.41-1.07)	0.380	0.20 (-0.57-0.96)	0.616	0.23 (-0.53-0.98)	0.553
Female	-26.71 (-34.50- -18.92)	<0.001***	-4.21 (-5.41- -3.01)	<0.001***	-4.50 (-5.83- -3.17)	<0.001***	-4.69 (-6.08- -3.307)	<0.001***	-4.47 (-5.91- -3.03)	<0.001***	-4.59 (-6.0- -3.12)	<0.001***	-4.25 (-5.71- -2.78)	<0.001***
LGBT	-18.50 (-26.24- -10.77)	<0.001***	-2.17 (-3.36- -0.98)	<0.001***	-3.16 (-4.48- -1.83)	<0.001***	-2.90 (-4.28- -1.53)	<0.001***	-3.29 (-4.72- -1.86)	<0.001***	-3.31 (-4.7- -1.85)	<0.001***	-3.67 (-5.13- 2.22)	<0.001***
Presence of LGBT in family	-2.17 (-12.42-8.08)	0.678	0.10 (-1.48-1.68)	0.902	-0.52 (-2.28-1.23)	0.558	-0.09 (-1.92-1.73)	0.922	-0.37 (-2.27-1.53)	0.699	-0.52 (-2.46-1.41)	0.596	-0.76 (-2.68-1.17)	0.439
media usage time	0.00 (0.00-0.01)	0.221	0.00 (0.00-0.01)	0.205	0.00 (0.00-0.01)	0.321	0.00 (0.00-0.01)	0.339	0.00 (0.00-0.01)	0.262	0.00 (0.000-0.001)	0.242	0.00 (0.00-0.01)	0.165
PGSDM	-2.73 (-3.10- -2.35)	<0.001***	-0.43 (-0.49- -0.37)	<0.001***	-0.44 (-0.51- -0.38)	<0.001***	-0.48 (-0.54- -0.41)	<0.001***	-0.47 (-0.54- -0.40)	<0.001***	-0.46 (-0.53- -0.39)	<0.001***	-0.46 (-0.53- -0.39)	<0.001***
NGSDM	0.80 (0.35-1.25)	0.001**	0.11 (0.04-0.18)	0.002**	0.14 (0.06-0.22)	0.001**	0.14 (0.05-0.22)	0.001**	0.15 (0.07-0.22)	<0.001***	0.14 (0.06-0.23)	0.001**	0.12 (0.04-0.21)	0.005**

Abbreviations: LGBT = lesbian, gay, bisexual, transgender, Trans = transgender, PGSDM = positive gender and sexual diverse media content, NGSDM = negative gender and sexual diverse media content; \* = p-value < 0.05, \*\* = p-value < 0.01, \*\*\* = p-value < 0.001



Supplementary questionnaire

General Information Questionnaire

Instructions: Please mark ✓ in the blank and answer the questions truthfully.

Part 1: Demographic data

1. Age ..... years
2. Birth Sex ☐ Male ☐ Female
3. Which of the following choices best describes you?  
☐ heterosexual  
☐ bisexual  
☐ homosexual  
☐ transgender  
☐ I'm not sure about myself yet.
4. Religion ☐ Buddhism ☐ Christianity ☐ Islam ☐ Others
5. Grade Level ☐ Grade 10 ☐ Grade 11 ☐ Grade 12
6. Presence of LGBT in family ☐ No ☐ Yes (Please do 6.1-6.6)  

6.1 Lesbian ☐ No ☐ Yes

6.2 Gay ☐ No ☐ Yes

6.3 Bisexual women ☐ No ☐ Yes

6.4 Bisexual men ☐ No ☐ Yes

6.5 Trans women ☐ No ☐ Yes

6.6 Trans men ☐ No ☐ Yes
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**Part 2:** Questionnaire on Media Consumption and Exposure to Gender and Sexual Diversity in Media (GSDM)

In the past 6 months, how many hours per day have you used the following media on average?

1. Watching TV, VDOs, Movies

- 1) Traditional television program ..... (hr./min.)
- 2) Online (ex. website, YouTube, other social media ) ..... (hr./min.)
- 3) Streaming (ex. Netflix, WeTV, AISPlay, LineTV) ..... (hr./min.)
- 4) DVDs ..... (hr./min.)

2. Reading

- 1) Publication (ex. books, comic books, novels, magazines, newspaper) ..... (hr./min.)
- 2) Electronic book (ex. E-book, article /web novel/online news) ..... (hr./min.)

3. Playing games (online and offline)

- 1) Video games (ex. PSP, Nintendo ) ..... (hr./min.)
- 2) Computer games ..... (hr./min.)
- 3) Mobile games..... (hr./min.)

4. Listening

- 1) Songs ..... (hr./min.)
- 2) Podcasts ..... (hr./min.)
- 3) Clubhouse..... (hr./min.)
- 4) Radio ..... (hr./min.)

Exposure to Gender and Sexual Diversity in Media (GSDM)

In the past 6 months, to what extent have you encountered content about LGBT individuals with the following characteristics and behaviors from various media, such as television, the Internet, books, video clips, movies, etc.? Please answer the following questions truthfully by placing a check mark (✓) next to the response that best reflects your experience.

Contents/ Characteristics of LGBT that appear in the media	Never	Not often	Sometimes	Quite Often	Often
1. LGBT individuals in the media are cheerful, making those around them happy and comfortable.					
2. LGBT individuals in the media are emotionally volatile, unable to control their emotions, and often use violence to solve problems.					
3. LGBT individuals in the media are empathetic, listen to problems, and provide good advice.					
4. LGBT individuals in the media are self-centered and lack empathy for others.					
5. LGBT individuals in the media speak politely and show respect to others.					
6. LGBT individuals in the media speak disrespectfully to others, such as using vulgar language, sarcasm, or insults.					
7. LGBT individuals in the media are talented, such as excelling in academics, singing, dancing, or being confident in expressing themselves.					
8. LGBT individuals in the media are anxious, ashamed, withdrawn, and reluctant to express themselves.					
9. LGBT individuals in the media have a good relationship with their families and are accepted by their family members.					
10. LGBT individuals in the media have a poor relationship with their families and are not being accepted by their family members.					
11. LGBT individuals in the media play a positive role as foster parents or caregivers for children.					
12. LGBT individuals in the media play an inappropriate role as foster parents or caregivers for children.					
13. LGBT individuals in the media are successful in their careers.					

14. LGBT individuals in the media are unsuccessful in their careers.					
15. LGBT individuals in the media have equal rights and are treated like others in areas such as education, work, and society (e.g., marriage rights, having children, legal rights).					
16. LGBT individuals in the media lack rights and are not being treated like others in areas such as education, work, and society (e.g., marriage rights, having children, legal rights).					
17. LGBT individuals in the media are accepted by their peers, such as being part of a group or being chosen as a leader in activities.					
18. LGBT individuals in the media are rejected by their peers, such as being excluded from groups, and often teased, or bullied.					
19. LGBT individuals in the media displaying appropriate sexual interest, in line with the situation.					
20. LGBT individuals in the media are overly obsessed with sex and display inappropriate sexual interest, not suitable for the situation.					
21. LGBT individuals in the media practice safe sex, such as using condoms, not frequently changing partners, or avoiding group sex.					
22. LGBT individuals in the media practice unsafe sex, such as not using condoms, frequently changing partners, or engaging in group sex.					
23. LGBT individuals in the media have a stable and lasting relationship with their partner.					
24. LGBT individuals in the media have a short-term or unstable relationship with their partner.					
25. LGBT individuals in the media are secure in their identity or sexual orientation, and it cannot be changed.					
26. LGBT individuals in the media can change their identity or sexual orientation, for example, a gay man can become straight again.					
27. LGBT individuals in the media have a realistic appearance or image, such as being handsome, beautiful, or ordinary, with a mix of features.					
28. LGBT individuals in the media have an unrealistic appearance or image, such as					

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being excessively handsome, beautiful, or unattractive beyond reason.					
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