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Accessing Sexual Health Information Online: Content, Reasons and Practical Barriers in Emerging Adults

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Abstract: The Internet is an important platform for providing sexual health information for emerging adults. However, less is known about what content is accessed, why it is accessed and what practical barriers exist. Emerging adulthood is a developmental period often associated with increased risky sexual behaviour. This study explored practical aspects of accessing online sexual health information including the type of content accessed, reasons for accessing informationand practical barriers to accessing websites. A quantitative, cross-sectional design was applied. Participants were 751 emerging adults aged 18–29 years old (M = 23.3; SD = 3.11), recruited from the Republic of Ireland. Participants completed an online survey including variables about demographics, Internet searches for sex-related information, reasons for conducting searches, important aspects and practical difficulties in accessing sexual health websites. Most participants reported using the Internet for sexual health information. Content accessed related to sexually transmitted infections, contraceptives and relationship advice. Reasons for conducting searches included curiosity, privacy and presence of infection. Important website factors were usefulness, ease of understanding and confidentiality. Practical barriers included difficulty filtering excess information, lack of relevant content and limited awareness of trusted sources. Differences were observed between genders and sexual orientations. The findings have implications for healthcare and/or public health professionals who are responsible for providing online sexual health resources for emerging adults.

Keywords: sexual health information; internet; emerging adults; sexual health websites; barriers; online

Citation: Flinn, C.; Koretsidou, C.; Nearchou, F. Accessing Sexual Health Information Online: Content, Reasons and Practical Barriers in Emerging Adults. *Youth* **2023**, *3*, 107–124. https://doi.org/10.3390/youth3010007

Academic Editor: Jeong Jin Yu

Received: 27 October 2022
Revised: 5 January 2023
Accepted: 9 January 2023
Published: 13 January 2023

1. Introduction

1.1. Emerging Adulthood

Emerging adulthood refers to the age period from late adolescence to the late 20 s [1,2] and is marked with transitions across different domains in a young person's life. Embarking on a career or studies [3], exploring identities including sexual identity [4], and establishing financial independence [5] are some of the challenges that young individuals encounter on their trajectory into adulthood. Casual sexual relationships are common during emerging adulthood and are often associated with having multiple sexual partners [6,7]. As such, emerging adults are significantly more likely than any other age group to contract sexually transmitted infections (STIs) [8].

1.2. Sexually Transmitted Infections and Sexual Health Education

STIs impose large burdens on families and communities worldwide and often result in adverse psychosocial outcomes and financial costs through directly affecting sexual, reproductive and maternal-child health [9]. There are eight known pathogens that have been definitively linked to high morbidity and mortality rates. Among these, there are three bacterial STIs, including *Neisseria gonorrhoeae* (gonorrhoea), *Chlamydia trachomatis* (chlamydia), and *Treponema pallidum* (syphilis) and one parasitic STI, *Trichomonas vaginalis* (trichomoniasis), that can be cured with antibiotics. *Human papillomavirus* (HPV), *herpes*

simplex virus (HSV), *hepatitis B virus* (HBV) and *human immunodeficiency virus* (HIV) are viral STIs that are considered incurable, although their chronic course and symptoms can be susceptible to alteration through medications [10,11].

The prevalence of STIs has continued to rise in the past years. In the United States (U.S.) from 2016 to 2020, reported gonorrhoea cases increased 37% in 20–24 year olds and 40% in 25–29 year olds [12]. In 2021 in Ireland, the highest age-specific notification rates for chlamydia and HSV were among 20–24 year olds, and for gonorrhoea the rate was highest among 25–29 year olds [13]. In response to rapidly rising prevalence, sexual health education has emerged as an important area of interest for researchers and practitioners alike. However, it remains questionable whether formal sex education, as it currently stands, adequately supports young people today. It has been suggested by various sources that sex education programmes do not resonate with the needs and concerns of young people [14,15]. In 2015, the European Union (EU) Agency for Fundamental Rights reported that school-based sex education programmes in most EU member states did not include information on sexual orientation or gender identity [16]. Although Sweden is considered to have a well-developed curriculum [16], a study of female Swedish students (13–25 years old) reported that most participants were unsatisfied with the coverage of numerous topics, for instance sexual assault (96%) and harassment (94%), pornography (90%), abortion (80%) and emergency contraception (80%). Moreover, a study of Swedish higher education programmes in health care, police, legal and social work reported that the programmes were not comprehensive in their coverage of sexual and reproductive health and rights [17]. According to a 2020 report by the European Commission, eight countries in the EU do not include sexual education as a mandatory part of school curricula. These countries are Bulgaria, Croatia, Hungary, Italy, Lithuania, Romania, Slovakia and Spain [18]. In the U.S., sex education in schools is mandatory in only 25 (of 50) states, with merely 13 requiring it to be medically accurate [19]. Twelve states mandate that abstinence is included in sex education programmes, and a further 25 states require that abstinence is emphasised in the programmes. Moreover, decisions about sex education in the U.S. are made at local or state levels, with no federal laws dictating what sex education should look like in schools or how it should be taught [20]. This could lead to significant variability in the quality and content of sex education being delivered in schools. In Ireland, schools are permitted by law to promote the moral, spiritual, social and personal development of students, in consultation with their parents and with regard to the characteristic spirit of the school [21]. This means that schools under religious patronage may use their characteristic spirit or ethos, as a barrier to teaching objective sex education. Given the large proportion of schools in Ireland under religious patronage (e.g., in 2022, 87% of primary and 47% of post-primary schools were of Catholic ethos [22]), this issue has created concerns about the type of sex education being delivered by groups that oppose matters such as contraception, abortion or homosexuality. Researchers have highlighted the importance of topics such as consent, healthy relationships and gender in shaping young people's sexual health [23]. With this in mind, it is important that young people have independent access to high quality information about sexual health and other sex-related topics.

1.3. Sexual Health and the Media

The dawn of the digital era, perhaps in combination with the recognised limitations of many formal sex education programmes, has seen many young people turn to the media for information regarding sex and relationships. The Internet is a common channel for accessing information about sensitive health-related topics, such as sexual health [24]. Sexual health is frequently explored on the Internet by young people [14,25]. As young people mature and acquire sexual experiences, their curiosity and need for knowledge about sex-related topics also grows [26]. It is possible that young people may feel uncomfortable with or avoid engaging in conversations about intimate relationships and sensitive health issues with their parents or healthcare providers [27,28], turning instead to the Internet because it is fast, easily accessible and anonymous [25,29,30]. Furthermore, the Internet can provide a

wide range of information on a variety of sex-related topics, in addition to opportunities to engage with different perspectives and other peoples' experiences [25,29,30]. Searching for sexual health information online may be predicted by various demographic factors, for example, gender or sexual orientation.

1.4. Gender Differences

Differences between genders are well-established in relation to help-seeking, with evidence suggesting that the process is often more difficult for males than it is for females [31]. Evidence reporting gender differences in online health information seeking among emerging adults is somewhat limited. However, a number of studies conducted in various EU countries, with a variety of age groups, have demonstrated that females use the Internet to search for health information more often than males [32,33]. With regard to sexual health specifically, a study of German adolescents found that females were almost twice as likely than males to attach importance to the reputability of a publisher's website when looking for sexual health information online [34].

1.5. LGB Youth

Lesbian, gay and bisexual (LGB) in the present study refers to individuals whose sexual orientation is not heterosexual, including homosexual and bisexual individuals. It has been suggested that emerging adults who identify as LGB could be particularly likely to turn to the Internet for sexual health information because access through more traditional means is lacking [25]. A recent study of sexual minority women found that participants reported that they preferred using online resources because of expectations or experiences of heteronormativity from their sexual health service providers [35]. Similar findings that serve to highlight this heteronormative focus have also been reported by LGB youth with regard to school-based sex education programmes [36,37]. Further evidence of heteronormative focus can be found in the fact that only 22 U.S. states mention topics related to LGB youth in school-based sex education. Six of these states mandate discriminatory LGB sex education, which involves negatively portraying or stigmatising LGB people [38]. An array of studies has indicated a consistent trend of negative experiences with sexual health education [15,39,40], indicating that LGB youth do not receive appropriate and relevant sexual health information from school. A study of emerging adults (aged 18–25 years) from Canada found that LGB participants used the media (educational websites/news outlets) for sexual health information significantly more than heterosexual participants [41]. Researchers have suggested that youth who identify as LGB may not be comfortable discussing sexuality with their family or friends, especially if they have not yet disclosed their sexual orientation to those people [42]. Further, parents of LGB adolescents have reported that a significant barrier to effective communication with their child is a lack of understanding about LGB-specific sexuality [43].

1.6. Barriers to Accessing Online Sexual Health Information

While online sexual health information can be a valuable resource for emerging adults, some factors associated with this practice may serve as barriers to attaining accurate, useful information. For one, a study of Scottish adolescents found that difficulty filtering overabundant information was reported to be a significant barrier to accessing sexual health websites and obtaining relevant information [44]. In addition, difficulties involving finding locally relevant information and understanding medical terminology were also reported by the adolescents. Practical barriers relating to concerns about the credibility or validity of online information sources have also been reported in the literature. For example, numerous studies spanning adolescents and young adults have reported problems such as limited awareness of trusted and reliable online sources [44], difficulty judging the credibility of Internet-based health sources [45], and scepticism or distrust of online information [45,46].

1.7. The Present Study

Sexual ill-health, such as STIs, can have long-term consequences. For example, untreated STIs can lead to infertility, ectopic pregnancy and chronic pelvic pain [47]. The causal function of HPV infections in cervical cancer has been documented beyond reasonable doubt, with persistent infection with one of approximately 15 genotypes of carcinogenic HPV causing almost all cases of cervical cancer [48]. In fact, HPV has been proposed as the first identified 'necessary cause' of a human cancer [49] (p. 244). Moreover, untreated infections can facilitate STI transmission, in addition to stigmatising entire subgroups of people [50]. STIs can also have large costs for healthcare systems and economies. For example, in 2018, incident STIs were estimated to have cost the American healthcare system almost $16 billion in direct medical costs alone [51]. It is therefore important for emerging adults to have access to high-quality information about sexual health and other sex-related topics. Despite the Internet being an important platform for providing sex-related information, less is known about the type of content that emerging adults access, what they deem important when accessing and evaluating information, and whether they obtain the desired information. With sexual health information being increasingly accessed digitally, it is ever more important to explore young peoples' information needs as well as any practical barriers to accessing information online.

Consequently, the present study aimed to explore practical aspects of accessing online sexual health information in emerging adults aged 18–29 years old, including the type of content accessed, reasons for accessing online sexual health information, important aspects for sexual health websites and practical barriers to accessing content. Finally, this study aimed to explore differences across reported gender and sexual orientation.

2. Method

2.1. Participants

Participants were 751 emerging adults aged 18–29 years old (M = 23.3; SD = 3.11), recruited from the Republic of Ireland. Most participants were female (64.2%) and identified as White Irish (59.9%). Table 1 presents detailed demographic characteristics of the sample. For the purposes of sub-group analyses, participants were classified by reported gender into male and female. Participants who responded 'other' or 'prefer not to say' were not included in the sub-group analyses due to the very low frequency of responses. Furthermore, the total sample was classified into two sub-groups by reported sexual orientation: heterosexual and LGB youth (homosexual and bisexual combined). Participants who responded 'other' or 'prefer not to say' were excluded due to the very low frequency of responses.

2.2. Procedure

Data for this quantitative, cross-sectional study were collected online from January to June 2020 using the Qualtrics survey platform. The anonymous, self-report survey was shared through online social media platforms. Snowball sampling and purposive sampling (aimed at young adults) were used. Specifically, a flyer containing the study information (including study topic and participant eligibility) was shared. This flyer could subsequently be shared with additional potential participants by members of the public who encountered it. There were no paid advertisements used in the participant recruitment process. There were no incentives offered to participants for taking part. Emerging adults aged 18–29 years old were eligible to participate. Qualtrics was used to screen potentially eligible participants by age and country of residence. The estimated completion time of the online survey was approximately 15–20 min. Informed consent was obtained from all participants.

Table 1. Demographic characteristics of participants (n = 751), including sexual orientation.

Characteristic	***n* (%)**
Gender	
Male	259 (34.5)
Female	482 (64.2)
Prefer not to say	2 (0.3)
Other	8 (1.1)
Ethnic background	
White Irish	450 (59.9)
Irish Traveller	1 (0.1)
Other White background	244 (32.5)
Black or Black Irish	8 (1.1)
African	4 (0.5)
Asian or Asian Irish	14 (1.9)
Chinese	5 (0.7)
Any other Asian background	7 (0.9)
Other including mixed background	18 (2.4)
Education	
Primary	11 (1.5)
Lower secondary	14 (1.9)
Higher secondary	266 (35.4)
Third-level education	341 (45.4)
Postgraduate education	119 (15.8)
Employment status	
Employed	322 (42.9)
Self-employed	29 (3.9)
Unemployed	72 (9.6)
Student	328 (43.7)
Sexual Orientation (n = 748)	
Heterosexual	518 (69.3)
Homosexual	49 (6.6)
Bisexual	151 (20.2)
Prefer not to say	8 (1.1)
Other	22 (2.9)
Relationship status	
Married or cohabiting	71 (9.6)
In a committed relationship	287 (38.2)
Not in a committed relationship	392 (52.2)

2.3. Measures

2.3.1. Experience of Using the Internet for Sexual Health Information

Experience of using the Internet for sexual health information was measured by a single item, 'Have you previously tried to obtain sexual health information from the Internet?'. Participants were asked to rate their experience on a Likert scale (1 = Never, 5 = Always). Higher scores indicated a higher level of experience in using the Internet for sexual health information.

2.3.2. Sex-Related Topics

Participants were asked what sex-related topics they had previously searched on the Internet. Response options included information about HIV and/or other STIs; facts and statistics about HIV/STIs; offline sexual health testing; contraceptives; additional precautions to reduce the risk of HIV/STI transmission; mechanics of sexual behaviours (e.g., actions of sexual intercourse such as vaginal sex, anal sex, etc.); relationship advice; other topics (open-ended). Participants were asked to select all topics that applied to them. The items were informed by key themes that arose in a qualitative study conducted by Magee et al. [52]. This study involved conducting interviews with 16–24 year olds about the sexual health information they seek online. The topics that arose during interviews were considered important for inclusion in the present study. Furthermore, topics relating

to HIV/STIs in particular were considered important, primarily due to the serious and long-term consequences that HIV and STIs pose to individuals and healthcare systems.

2.3.3. Reasons for Seeking Information

Participants were asked to indicate their reasons for using the Internet to access sexual health information. Response options included needing to know the information for the future; the presence of symptoms and/or infection; work or college assignments; having no-one to ask; privacy-related reasons; curiosity; other reasons (open-ended). Participants were asked to select all reasons that applied to them. The items were informed by two studies. Specifically, three responses (needing to know the information for the future, the presence of symptoms and/or infection, and work or college assignments) were informed by Magee, Bigelow, Dehaan and Mustanski [52], and three responses (having no-one to ask, privacy-related reasons and curiosity) were informed by Mitchell, Ybarra, Korchmaros and Kosciw [25].

2.3.4. Important Website Factors

Participants were asked what factors were important to them when accessing websites that provide sexual health information. Factors included the credibility of the author/organisation; up-to-date information; ease of understanding; local relevance; confidentiality; ease of navigation; usefulness; quality of links; appearance; use of multimedia; live support chat. Participants were asked to rate their experience on a five-point Likert scale (1 = Not Important, 5 = Very Important). Higher scores indicated higher perceived importance. The items were informed by Escoffery et al. [53].

2.3.5. Practical Difficulties

Participants were asked about the practical difficulties they had experienced when accessing sexual health information online. Response options included difficulty filtering excess information; difficultly navigating large organisations' websites; difficulty finding locally-relevant information; difficulty reading and understanding content; limited awareness of trusted sources; too much text; not liking the tone of the content. Participants were asked to select all difficulties that applied to them. The items were informed by Patterson, Hilton, Flowers and McDaid [44].

2.4. Data Analysis

Descriptive statistics were calculated for all study variables. Chi-square tests and one-way analysis of variance (ANOVA) were used to examine the differences accounted for by reported gender (male; female) and sexual orientation (heterosexual; LGB). Cramér's V and Eta-squared (η^2) were the effect size coefficients used to measure the strength of differences across groups. Cramér's V statistic ranges from 0 to 1, with higher values indicating larger strengths of associations or effect sizes [54]. Eta-squared values around 0.01 indicate a small effect size; values around 0.06 indicate a moderate effect size; values around 0.14 indicate a large effect size [55]. Statistical analyses were performed using IBM SPSS Statistics for Windows, version 25 [56].

3. Results

3.1. Experience of Using the Internet for Sexual Health Information

As shown in Table 2, only 6% of participants indicated that they had not previously used the Internet to obtain sexual health information. There was a significant difference between males and females in terms of experience with online sexual health information (η^2 = 0.06, indicating a moderate effect size). Females (M = 3.16; SD = 0.91) reported using the Internet for sexual health information more often than males did (M = 2.69; SD = 0.94). There was a significant difference between sexual orientations (η^2 = 0.03, indicating a small effect size). LGB youth (M = 3.24; SD = 0.85) reported using the Internet for sexual health information more often than heterosexual youth (M = 2.90; SD = 0.96).

Table 2. Frequencies of experience of using the Internet for sexual health information, accounted for by gender and sexual orientation.

Variable		Total Sample (n = 751)	Gender (n = 741)				Sexual Orientation (n = 718)			
			Male	Female	F	p-Value	Heterosexual	LGB	F	p-Value
		n (%)	n (%)	n (%)	44.03	<0.001 *	n (%)	n (%)	19.46	<0.001 *
Experience of using the Internet for sexual health information	Never	43 (5.7)	24 (9.3)	18 (3.7)			34 (6.6)	7 (3.5)		
	Rarely	168 (22.4)	86 (33.2)	81 (16.8)			139 (26.8)	22 (11.0)		
	Sometimes	334 (44.5)	105 (40.5)	222 (46.1)			218 (42.1)	98 (49.0)		
	Very often	165 (22.0)	35 (13.5)	129 (26.8)			100 (19.3)	62 (31.0)		
	Always	41 (5.5)	9 (4.5)	32 (6.6)			27 (5.2)	11 (5.5)		

* $p < 0.001$.

3.2. Sex-Related Topics and Reasons for Seeking Information

The most commonly searched sex-related topics were contraceptives (67.8%), information about HIV and/or other STIs (63.2%), and facts and statistics (53.8%). The least frequently searched topic was additional precautions to reduce the risk of HIV/STI transmission (21.2%). The response option 'other topics searched for (i.e., open-ended response option) showed that participants also conducted searches for information about pregnancy and abortion (n = 7), gender and sexuality (n = 5), sexual violence (n = 3) and sex-positivity (n = 3). Participants' responses to the open-ended option are presented in more detail in the Supplementary Materials (Table S1). Males and females did not differ in their searches for information about HIV/STIs, facts and statistics, the mechanics of sexual behaviour, offline sexual health testing or additional precautions to reduce HIV/STI transmission. However, they did exhibit differences in terms of their searches for information on contraceptives (V = 0.35, indicating a moderate effect size) and relationship advice (V = 0.12, indicating a small effect size), with females searching for these topics more frequently than males (see Table 3). Furthermore, LGB youth did not differ from heterosexual youth in terms of searches for information about contraceptives, facts and statistics about HIV/STIs or relationship advice. However, LGB youth did search significantly more often for information about HIV/STIs (V = 0.17, indicating a small effect size), the mechanics of sexual behaviours (V = 0.13, indicating a small effect size), offline sexual health testing (V = 0.17, indicating a small effect size) and additional precautions to reduce HIV/STI transmission (V = 0.21, indicating a small effect size) compared to heterosexual youth (see Table 3).

The most common reasons for searching the Internet for sexual health information were curiosity (70.4%), needing to know the information for the future (60.9%) and privacy-related reasons (51.9%, e.g., embarrassment). The least common reasons were searching the Internet for a work or college assignment (8.0%) and having no-one to ask (26.5%). Other reasons (i.e., open-ended response option) found that participants also conducted online searches because it was convenient (n = 4) and to help inform other people such as friends (n = 3). Participants' responses to the open-ended option are presented in more detail in the Supplementary Materials (Table S2). There were no gender differences for reasons including needing to know the information for the future and having no-one to ask. However, females were more likely than males to access online sexual health information because of curiosity (V = 0.11, indicating a small effect size), privacy-related reasons (V = 0.09, indicating a very small effect size), the presence of symptoms or infection (V = 0.13, indicating a small effect size) and for work or college assignment reasons (V = 0.11, indicating a small effect size). In terms of sexual orientation, there were no differences between LGB youth and heterosexual youth for reasons including privacy, presence of symptoms or infection, having no-one to ask or for work or college assignment reasons. However, LGB youth were more likely than heterosexual youth to report curiosity (V = 0.10, indicating a small effect size) and needing to know the information for the future (V = 0.13, indicating a small effect size) as reasons for accessing online sexual health information (see Table 3).

Table 3. Frequencies of sex-related topics searched for and reasons for conducting searches, accounted for by gender and sexual orientation.

Variable		Total Sample (n = 751)	Gender (n = 741)				Sexual Orientation (n = 718)			
			Male	Female	χ^2	p-Value	Heterosexual	LGB	χ^2	p-Value
		n (%)	n (%)	n (%)			n (%)	n (%)		
Sex-related topics	Contraceptives	509 (67.8)	119 (45.9)	387 (80.3)	91.7	<0.001 *	361 (69.7)	129 (64.5)	1.97	0.18
	Information about HIV/STIs	475 (63.2)	152 (58.7)	316 (65.6)	3.42	0.06	305 (58.9)	154 (77.0)	20.5	<0.001 *
	Facts and statistics about HIV/STIs	404 (53.8)	139 (53.7)	262 (54.4)	0.03	0.86	267 (51.5)	118 (59.0)	3.23	0.07
	Relationship advice	381 (50.7)	111 (42.9)	265 (55.0)	9.91	0.002 **	275 (53.1)	95 (47.5)	1.80	0.18
	Mechanics of sexual behavior	331 (44.1)	115 (44.4)	211 (43.8)	0.03	0.87	210 (40.5)	109 (54.5)	11.4	<0.001 *
	Offline sexual health testing	193 (25.7)	63 (24.3)	129 (26.8)	0.52	0.47	111 (21.4)	76 (38.0)	20.6	<0.001 *
	Extra precautions to reduce HIV/STI transmission	159 (21.2)	64 (24.7)	93 (19.3)	2.96	0.09	82 (15.8)	70 (35.0)	31.8	<0.001 *
	Other (open-ended)	40 (5.3)	9 (3.5)	29 (6.0)	-	-	21 (4.1)	13 (6.5)	-	-
Reasons	Curious	529 (70.4)	165 (63.7)	358 (74.3)	9.06	0.003 **	350 (67.6)	155 (77.5)	6.82	0.01 **
	Need to know information for future	457 (60.9)	149 (57.5)	303 (62.9)	2.02	0.16	299 (57.7)	144 (72.0)	12.5	<0.001 *
	Privacy-related	390 (51.9)	120 (46.3)	267 (55.4)	5.55	0.02 **	276 (53.3)	100 (50.0)	0.62	0.43
	Presence of symptoms or infection	287 (38.2)	77 (29.7)	206 (42.7)	12.1	<0.001 *	197 (38.0)	84 (42.0)	0.95	0.33
	No-one to ask	199 (26.5)	68 (26.3)	130 (27.0)	0.04	0.83	131 (25.3)	60 (30.0)	1.64	0.20
	Work or college assignment	60 (8.0)	10 (3.9)	50 (10.4)	9.60	0.002 **	36 (6.9)	18 (9.0)	0.87	0.35
	Other (open-ended)	21 (2.8)	6 (2.3)	14 (2.9)	-	-	8 (1.5)	10 (5.0)	-	-

* $p < 0.001$. ** $p < 0.05$.

3.3. Important Website Factors

Emerging adults were asked to indicate which factors they considered important when accessing websites that provide sexual health information. As can be seen in Table 4, the most important website factors were usefulness, ease of understanding and confidentiality. The least important factors were live support chat, use of multimedia and appearance. Females rated most of the website factors as more important than males did, including the usefulness of the website ($\eta^2 = 0.02$), ease of understanding ($\eta^2 = 0.03$), having up-to-date information ($\eta^2 = 0.01$), ease of navigation ($\eta^2 = 0.02$), the quality of links ($\eta^2 = 0.01$), local relevance ($\eta^2 = 0.01$), appearance ($\eta^2 = 0.01$), use of multimedia ($\eta^2 = 0.01$) and live support chat ($\eta^2 = 0.01$). However, it should be noted that a number of these factors displayed very small effect sizes and therefore the differences may be non-substantial. There were no significant differences between males and females in terms of the importance of confidentiality and the credibility of the author/organisation. Furthermore, LGB youth rated the local relevance of information on websites significantly higher than heterosexual youth (see Table 4). However, the very small effect size indicates a non-substantial difference ($\eta^2 = 0.01$).

3.4. Practical Difficulties

As can be seen in Table 5, the most commonly reported practical difficulties participants experienced when accessing online sexual health information was difficulty filtering excessive information (40.3%), a lack of relevant information (32.8%) and having limited awareness of specific, trusted and relevant sources (27.0%). The least frequently reported difficulties were not liking the tone of the content (12.3%) and difficulty reading and understanding the content (13.2%). Females were more likely than males to report numerous obstacles including difficulty filtering excess information ($V = 0.12$, indicating a small effect size), a lack of relevant content ($V = 0.08$, indicating a very small effect size), having limited awareness of specific, trusted and relevant sources ($V = 0.08$), difficulty finding locally relevant information about services ($V = 0.12$, indicating a small effect size), difficulty reading and understanding the content ($V = 0.09$, indicating a very small effect size) and not liking the tone of the content ($V = 0.09$, indicating a very small effect size). There were no gender differences for difficulties including there being too much text and having difficulty navigating large organisations' websites. In terms of sexual orientation, LGB youth were more likely than heterosexual youth to report a lack of relevant content ($V = 0.08$, indicating a very small effect size).

Table 4. Descriptive statistics for important factors when accessing sexual health websites, accounted for by gender and sexual orientation.

Item Description	Total Sample (n = 741)	Gender (n = 731)				Sexual Orientation (n = 708)			
		Male	Female	F	p-Value	Heterosexual	LGB	F	p-Value
	M (SD)	*M (SD)*	*M (SD)*			*M (SD)*	*M (SD)*		
Usefulness	4.37 (0.71)	4.24 (0.73)	4.43 (0.70)	11.9	<0.001 *	4.36 (0.71)	4.41 (0.69)	0.92	0.34
Ease of understanding	4.13 (0.89)	3.92 (0.94)	4.24 (0.85)	22.1	<0.001 *	4.15 (0.91)	4.11 (0.83)	0.29	0.59
Confidentiality	4.12 (1.11)	4.02 (1.17)	4.18 (1.08)	3.52	0.06	4.17 (1.09)	4.05 (1.14)	1.80	0.18
Up-to-date information	4.10 (0.98)	3.98 (0.95)	4.17 (0.99)	6.65	0.01 **	4.08 (0.99)	4.17 (0.96)	1.08	0.30
Credibility of author/organisation	4.06 (1.07)	4.02 (0.98)	4.09 (1.12)	0.55	0.46	4.04 (1.10)	4.14 (0.97)	1.38	0.24
Ease of navigation	3.84 (0.91)	3.65 (0.97)	3.94 (0.87)	17.1	<0.001 *	3.86 (0.89)	3.85 (0.97)	0.001	0.98
Quality of links	3.77 (1.02)	3.60 (1.05)	3.86 (1.00)	10.7	0.001 **	3.78 (1.03)	3.77 (1.00)	0.01	0.94
Local relevance	3.29 (1.22)	3.11 (1.22)	3.40 (1.20)	9.40	0.002 **	3.25 (1.20)	3.48 (1.18)	5.61	0.02 **
Appearance	3.10 (1.05)	2.98 (1.08)	3.15 (1.03)	4.29	0.04 **	3.14 (1.03)	2.99 (1.10)	2.79	0.10
Use of multimedia	2.79 (1.17)	2.64 (1.14)	2.88 (1.18)	7.14	0.01 **	2.82 (1.16)	2.72 (1.19)	1.11	0.29
Live support chat	2.03 (1.21)	1.87 (1.12)	2.11 (1.24)	6.82	0.01 **	2.07 (1.21)	1.91 (1.16)	2.49	0.12

* $p < 0.001$. ** $p < 0.05$. Scores ranged from 1 to 5, higher scores indicate higher importance.

Table 5. Frequencies of practical difficulties experienced when accessing online sexual health information, accounted for by gender and sexual orientation.

Item Description	Total Sample (n = 751)	Gender (n = 741)				Sexual Orientation (n = 718)			
		Male	Female	χ^2	p-Value	Heterosexual	LGB	χ^2	p-Value
	n (%)	*n* (%)	*n* (%)			*n* (%)	*n* (%)		
Difficult to filter excessive information	303 (40.3)	85 (32.8)	217 (45.0)	10.4	0.001 **	209 (40.3)	82 (41.0)	0.03	0.87
Lack of content relevant to me	246 (32.8)	72 (27.8)	170 (35.3)	4.28	0.04 **	155 (29.9)	76 (38.0)	4.31	0.04 **
Limited awareness of specific, trusted, relevant sources	203 (27.0)	58 (22.4)	143 (29.7)	4.51	0.03 **	135 (26.1)	56 (28.0)	0.28	0.60
Too much text	174 (23.2)	51 (19.7)	122 (25.3)	2.97	0.09	132 (25.5)	38 (19.0)	3.36	0.07
Difficult to find locally relevant information about services	170 (22.6)	41 (15.8)	129 (26.8)	11.4	<0.001 *	109 (21.0)	55 (27.5)	3.41	0.07
Difficult to navigate large organisations' websites	150 (20.0)	43 (16.6)	104 (21.6)	2.62	0.11	94 (18.1)	49 (24.5)	3.65	0.06
Difficult to read and understand content	99 (13.2)	24 (9.3)	74 (15.4)	5.44	0.02 **	69 (13.3)	29 (14.5)	0.17	0.68
Did not like the tone of the content	92 (12.3)	21 (8.1)	69 (14.3)	6.08	0.01 **	58 (11.2)	28 (14.0)	1.08	0.30

* $p < 0.001$. ** $p < 0.05$.

4. Discussion

4.1. Overview of Findings

The present study was conducted between January and June 2020. We aimed to explore practical aspects of accessing online sexual health information among emerging adults aged 18–29 years old, including the type of content accessed, the reasons for accessing online sexual health information, the aspects considered important for sexual health websites and the practical barriers to accessing content. Overall, our findings highlight that emerging adults in Ireland frequently use the Internet for sexual health information and they search for a wide range of topics, most commonly contraceptives, information about HIV/STIs, and facts and statistics. Emerging adults in our sample most commonly access sexual health information online for curiosity-related reasons. As an overall sample, emerging adults reported that the most important website-related factor was usefulness, and that the most common practical difficulty they experienced was difficulty filtering excess information. These patterns appeared to differ between genders and sexual orientations. Results are discussed initially in terms of the overall sample, followed by an interpretation of the differences between reported genders and sexual orientations.

4.1.1. Experience with Seeking Online Sexual Health Information

The majority of the emerging adults in our sample used the Internet to access sexual health information, supporting previous research suggesting that the media is among the most commonly reported sources of sexual health information for young people [57]. It is possible that many emerging adults turn to the media for sexual health information because formal sources of information, such as school-based sex education programmes, have failed to keep up with the modernisation of emerging adults' sex lives. For example, casual sexual relationships and having multiple sexual partners have largely become a normative part of emerging adulthood [6,7], while researchers have suggested that modern sex education programmes fail to resonate with the needs and concerns of young people [14,15].

4.1.2. Sex-Related Topics and Reasons for Seeking Information

Our findings suggest that emerging adults use the Internet to obtain information about a range of topics including STIs, contraceptives, mechanics of sexual activities and relationship advice. This supports previous research suggesting that relationships, contraception and STI information were among the most frequently accessed topics online by adolescents [58]. Our findings indicate a pattern of searching for information about sex-related topics, which exists on a continuum across the developmental periods of adolescence and emerging adulthood. It has been suggested that young people may avoid conversations about intimate relationships with their parents [27], and that adolescents can feel embarrassed discussing sensitive health topics with healthcare providers [28]. Although adulthood begins at 18 years of age, the subjective sense of adulthood does not necessarily correspond with this timeframe. Emerging adulthood is associated with many life changes, including new romantic relationships and exploring sexual identities [1]. Emerging adults are discovering and navigating their sex lives and their sexual health, and could feel uncomfortable or embarrassed about discussing issues related to this new stage of their lives with healthcare providers. Hence, it is not surprising that our study found that over half of the participants reported that privacy was a motivator for accessing sexual health information online. During a developmental period associated with significant life changes, accessing information about sensitive or intimate topics from the Internet could help emerging adults retain a sense of privacy in relation to their sex lives.

4.1.3. Important Website Factors

The most important factors for accessing sexual health websites were usefulness, ease of understanding and confidentiality. The least important were live support chat and use of multimedia. These findings add to the existing pool of evidence. For instance, a study of U.S. college students found that appearance, use of multimedia and interactivity were

rated as least important [53]. Author credibility, ease of understanding and confidentiality were rated as very important. A study of Scottish adolescents (16–19 years old) reported that participants were wary about engaging with sex-related audiovisual content [44]. Our findings indicate that emerging adults may perceive actively interacting with sexual health websites through a live chat support to be too intrusive or an invasion of their privacy. When accessing sexual health information online, emerging adults appear to value confidentiality more than receiving individualised information. For example, participants considered confidentiality more important than live support chat features, while they did not value the use of multimedia on sexual health websites. This could indicate that they valued the health information itself above the use of pictures or videos. Alternatively, this could indicate that they were worried about being seen accessing sexual health information online, and that pictures or videos may be considered too conspicuous. Previous evidence has suggested that young people feared being observed when engaging with online sexual health content [44]. Our findings may suggest that stigma related to accessing sexual health information and services is still experienced by emerging adults in Ireland.

4.1.4. Practical Barriers

Emerging adults frequently reported practical barriers to accessing information, including difficulty filtering excess information followed by a lack of relevant content and having limited awareness of specific, trusted and relevant sources of sexual health information. Our findings corroborate existing research on 16–19 year olds [44], thus indicating that these practical barriers that are experienced by adolescents are maintained into emerging adulthood. Our study suggests that emerging adults in Ireland may not possess the skill level required to effectively access relevant and accurate sexual health information online. Although many young people may have sophisticated Internet skills, there are shortcomings in their abilities to locate, appraise and use online health information [59]. During a time when misinformation is rife, the ability to access trustworthy and medically accurate health information is extremely important. Our findings highlight that emerging adults require guidance to become better aware of accurate information sources, and support in learning how to locate and evaluate information.

4.1.5. Gender Differences

Our findings suggest, with a moderate effect size, that females search the Internet for sexual health information more than males. This supports previous evidence, which has suggested that females were more likely than males to search for health information online [33,60]. It is well-established that females seek help more often than males. For example, gender differences are established in health-related help-seeking [31] and online health information seeking [32]. Using the Internet for sexual health information could be viewed as a first port-of-call in help-seeking processes for sexual health issues. Furthermore, differences in attitudes towards seeking help could be a result of gender stereotypes, which dictate what is defined as acceptable for male and female behaviour [61]. Males may not seek help or information because it could be associated with negative self-evaluation [62], or because males may perceive seeking help as failure more than females do [63].

Our study indicates that more females than males search for information about contraceptives (moderate effect size) and that females searched for relationship advice more than males; however, the effect size was small. The gender differences in contraceptive information are perhaps not surprising, given that females alone bear the physical consequences of not using contraception. Despite years of research and debate, reversible male contraception has not advanced [64]. Evidence indicates a lack of involvement by males when it comes to contraceptive responsibility. For example, a study of Australian males aged 15–25 years reported that a common reason for ceasing condom use was the perception that contraception was ‘a girl’s responsibility’ [65] (p. 40).

Females reported curiosity, privacy-related reasons and the presence of infection as reasons for conducting searches more than males did; however, all of the effect sizes were

small, indicating no substantial differences. Females also considered numerous website factors more important than males did; however, the effect sizes were again small. These included the usefulness of the website, ease of understanding and navigation, up-to-date information, the quality of links, local relevance, appearance, use of multimedia and live support chat. When accessing websites, females reported more obstacles including difficulty filtering excess information, lack of relevant content, limited awareness of trusted sources, difficulty finding locally relevant information, difficulty reading and understanding the contentand not liking the tone of the content. However, the effect sizes were consistently small, indicating non-substantial differences. These very small differences could be a result of having more females in the sample than males. Further, females reported using the Internet for sexual health information more often than males did, and therefore they would consequently have more experience with the practical barriers associated with it. Our findings could also reflect sexual double standards within sexuality, wherein female sexuality may be disparaged, whereas male sexuality may be sanctioned or even celebrated. There is evidence for sexual double standards, with frequent sexual activity reported to be more expected and evaluated more positively for men than for women [66]. With this in mind, it is perhaps not surprising that females in our sample reported privacy- and curiosity-related reasons for accessing sexual health information online more than males did.

4.1.6. Sexual Orientation Differences

Our study found a number of differences between reported sexual orientation. LGB youth search for sexual health information online more often than heterosexual youth. We observed a small effect size. Previous research has suggested that bisexual, gay or lesbian, and questioning youth access online information about sex more often than heterosexual youth [25]. It is likely that LGB youth specifically do not receive relevant or appropriate sexual health information from formal sources, such as healthcare providers, and therefore obtain information from the Internet. Indeed, a study of primary care providers in the U.S. found that only half of the participating providers believed they were competent to provide LGB healthcare [67]. Moreover, a study of medical students in the United Kingdom found that most students (69%) did not receive specific training on LGB-related health needs [68].

Our findings indicate that LGB youth search for information about HIV/STIs, additional precautions against HIV/STI transmission and offline sexual health testing more often than heterosexual youth. Although the effect sizes were small, these findings corroborate previous research, which reported that one-quarter of gay/lesbian/queer youth accessed information on HIV/AIDS or other STIs, followed by 13% of bisexual youth and 5% of heterosexual youth [25]. Having same-sex partners does not eliminate the risk of contracting STIs, because transmission can occur through vaginal, oral and anal sex. In 2019 in Ireland, 87% of Lymphogranuloma venereum, 58% of syphilis and 34% of gonorrhoea cases occurred in men who have sex with men, indicating that this cohort is disproportionately affected by STIs [69]. Given the high prevalence of STIs in this cohort, it is understandable that LGB youth in our sample would search for online information about HIV/STIs more often than heterosexual youth. Furthermore, it is not surprising that LGB youth reported needing to know the information as a reason for carrying out online searches more often than heterosexual youth did, albeit with a small effect size. In addition, LGB youth more frequently reported curiosity as a reason for conducting searches than their heterosexual counterparts, although similarly the effect size was small. This aligns with existing research, which suggested that curiosity, privacy and having no-one to ask were common reasons for accessing sexual health information online [25]. LGB youth may feel stigmatised accessing offline sexual health care, and therefore turn to online sources instead. Evidence has indicated that LGB youth can receive poor quality healthcare due to stigma [70]. LGB youth may prefer online resources due to expectations or experiences of heteronormativity from sexual health service providers [35]. LGB youth in our sample also reported a lack of content relevant to them on sexual health websites more than heterosexual youth did. Although the effect size was small, it may still serve to

highlight potential deficits in the available sexual health information for emerging adults who do not identify as heterosexual.

4.2. Implications for Practice

This study carries important implications for healthcare and/or public health professionals who are responsible for providing online sexual health resources for emerging adults. Online sexual health content should provide emerging adults with information on a range of issues including STIs, sexual behaviours, and intimate and sexual relationships. Our findings can be used to guide web designers to develop online sexual health resources tailored specifically for emerging adults, and not generally for adolescents and emerging adults together. Given the differences observed between our study and similar studies conducted in adolescent samples, it is important to treat the two developmental age cohorts appropriately and distinctly. For example, in comparison to previous research in adolescents [25], we found that larger proportions of emerging adults in our sample reported curiosity-related reasons for accessing online sexual health information (70% vs. 46%), in addition to privacy-related reasons (52% vs. 43%) and having no-one to ask (27% vs. 10%). This suggests that emerging adults experience significant privacy concerns when seeking sexual health information from formal sources or feel that they do not have anyone to ask about sex-related issues, even more so than adolescents. Therefore, the provision of high-quality and accessible online information about a range of sex-related topics designed specifically for this developmental cohort is important. Privacy and confidentiality concerns should be given significant consideration in the development of future online sexual health resources. For instance, website developers could consider clearly posting their privacy policies on their website's landing/home page. Developers may also consider discreet website interfaces without the use of multimedia (e.g., images and videos). In addition, including clear instructions for closing the website quickly may help to address potential worries about being seen accessing sexual health content online. For example, GLSEN.org [71] (an LGB-inclusive sexual health education organisation) provides all website users with rapid exit instructions upon opening the website in case they feel the need to quickly exit the sensitive content they are viewing.

Ease of understanding was particularly important in our sample of emerging adults. Therefore, information provided by sexual health websites should be clear, straightforward and accessible to emerging adults of all educational backgrounds. Confusing medical terminology and jargon should be avoided, as should excess information or large amounts of text. Finally, website navigation panes should be simple and clearly labelled in order for emerging adults to easily find the information that is relevant to them.

4.3. Limitations and Directions for Future Research

Despite its strengths, the present study has some limitations that should be considered when interpreting findings. This was a self-report survey, and therefore social desirability bias may have influenced participants' responses. Although social desirability tends to be lower when participants complete studies anonymously and through the Internet, it cannot be eliminated entirely [72]. It is also important to note that our sample was almost entirely White, thus limiting the generalisability of the findings and interpretation. Participants were asked about any previous behaviour relating to online sexual health-information seeking, with no time restriction applied. Therefore, recall bias may have influenced responses as well. The present study did not include any measurement of offline sexual health-information seeking, and therefore we were not able to follow up with participants who indicated that they only sometimes accessed information online. Furthermore, we were not able to compare usefulness between online and offline information. Future research could benefit from inquiring about alternative or offline sources of sexual health information such as parents, friends or healthcare professionals.

Because this study used single items to capture a number of the included constructs, it cannot provide information about their reliability or validity. For example, experience of

using the Internet for sexual health information was measured by a single item, and thus we have no means of assessing internal consistency. This is a limitation of the study and future research should aim to include established or multi-item scales in order to address such issues.

This study focused largely on sexual health topics relating to HIV/STIs, due to the serious and long-term consequences of untreated infections. However, future research could benefit from the inclusion of additional, sex-positive topics (such as desire, pleasure, orgasm and health sexual communication), which are seldom included in school-based sex education programmes yet are important topics for young people to learn about and understand. Furthermore, in the open-ended response option for other topics searched for on the Internet, a number of participants reported that they searched for topics relating to pregnancy and abortion, as well as gender and sexuality. Future research could benefit from inquiring specifically about these topics, in addition to those relating to sexual violence and consent.

Lastly, because the respective subsamples were not large enough to conduct robust analysis with individual sexual identities the present study grouped sexual orientation into heterosexual and LGB. This excluded the investigation of differences within the LGB community and treated all individuals belonging to this community as one. Future research should consider oversampling sexual minority youth with a variety of different sexual identities in order to attain data robust enough for analyses between distinct sexual identity groups. Similarly, with gender identities, the present study compared only participants identifying as male and female as a result of low frequencies of participants identifying as additional, non-binary genders. Gender minority youth may face additional challenges in their psychosexual development, and therefore future research should aim to investigate sexual health information-seeking in gender minority youth specifically.

5. Conclusions

The present study offers valuable insights into the practical aspects of accessing online sexual health information among emerging adults aged 18–29 years old, such as the type of content accessed, the reasons for accessing online sexual health information, important aspects for sexual health websites and the practical barriers to accessing content. In addition, it provides useful comparisons across reported gender and sexual orientation. Our findings highlight that emerging adults frequently use the Internet for sexual health information, particularly for information relating to contraceptives and STIs. Curiosity and privacy were often reported as reasons for accessing online information. Websites providing sexual health information should include useful and relevant information that is comprehensible and confidential, in addition to avoiding excessive information.

Factors such as gender and sexual orientation should be considered and accounted for in future research and sexual health resources. Our findings have considerable implications for the development and design of online sexual health resources, which should be developmentally appropriate for emerging adults.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/youth3010007/s1, Table S1: Breakdown of 'Other (please specify)' responses for sex-related topics searched for on the Internet; Table S2: Breakdown of 'other (please specify)' responses for reasons for conducting online searches (n = 20).

Author Contributions: Conceptualisation, C.F. and F.N.; methodology, C.F. and F.N.; formal analysis, C.F. and F.N.; investigation, C.F.; writing—original draft preparation, C.F. and F.N.; writing—review and editing, C.F., C.K. and F.N.; supervision, F.N.; project administration, C.F. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Taught Masters Research Ethics Committee—School of Psychology of UNIVERSITY COLLEGE DUBLIN (TMREC-PSY: [2019-11], 22 January 2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: No data are publicly available for this study.

Conflicts of Interest: The authors declare no conflict of interest.

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