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Swipe Right: Harms Associated With Using and Meeting People via Dating Apps

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Across many countries, the use of dating applications and websites (DAWs) has become increasingly popular over recent years; however, research examining the relationship between DAWs use and experience of dating violence and/or other harms is limited. This study aims to explore the use, motivations, and experiences of harm associated with using DAWs and meeting people in person via DAWs. An online convenience sample pilot survey was completed by adults ($n = 217$) aged 18+ years, living in the UK or the Republic of Ireland, who had used a DAW in the past two years. Differences were found in usage, motivations, and experiences of using DAWs in age and gender. Nearly half, 46.5% of respondents reported having been a victim of at least one harm as a result of meeting someone in person via DAWs in their lifetime; 33.2% reported experiencing sexual violence, 27.2% verbal abuse, 8.3% sexual activity in exchange for goods and 6.5% physical assault. Further to this, 41.9% of respondents reported being “Catfished” in the past two years (i.e., the other person looking different in person compared to their DAWs profile). In multivariate analysis, experiencing at least one harm was significantly associated with female gender (Adjusted odds ratio [AOR] 4.0; $p < .001$), being aged 40+ years (AOR 3.1; $p < .01$; reference category, 18–29 years) and being “Catfished” (AOR 3.3; $p < .001$). In multivariate analysis, sexual violence was significantly associated with being female (AOR 6.9; $p < .001$), being aged 40+ years (AOR 2.9; $p = .013$; reference category, 18–29 years) and being “Catfished” (AOR 2.9; $p = .001$). The study reinforces the importance of understanding the use of DAWs, exposure to harms on and offline, and risks associated with “Catfishing.”

KEYWORDS: violence; dating violence; sexual violence; sexual harassment; catfishing

Statement of Human Rights: Formal ethical approval was granted from Liverpool John Moores Ethics Committee.

INTRODUCTION

Dating violence is a major public health issue and a human rights violation (World Health Organization, 2017). Different definitions have been used to describe dating violence throughout academic literature, including intimate partner violence, partner violence/abuse, and domestic violence; due to such ambiguity, prevalence rates widely fluctuate, depending on the definitional criteria adopted for particular research (Lewis & Fremouw, 2001). For the purpose of this study, dating violence is defined as the perpetration or threat of an act of violence by at least one member of a couple on the other member in the context of dating (Bandyopadhyay et al., 2014). This violence can take a number of forms, including sexual violence, physical violence, verbal abuse, psychological abuse, and stalking (World Health Organization, 2002). Whilst incidences of dating violence are believed to be significantly under-reported, figures worldwide show that it can affect millions of people. Globally, one in three (35%) women (15–69 years old) have experienced physical and/or sexual violence by an intimate partner or non-partner sexual violence (World Health Organization, 2017). In the UK, 7.3% of women and 3.6% of men reported having experienced any type of partner abuse in the last year, equivalent to an estimated 1.6 million female victims and 757,000 male victims (Office for National Statistics, 2020). In the United States, it is estimated that 24 people per minute are victims of rape, physical violence, or stalking by an intimate partner, which equates to more than 12 million women and men over the course of a year (Centres for Disease Control and Prevention, 2019). Despite the high prevalence, dating violence, particularly sexual violence, is significantly underreported, with only an estimated 17% of all rapes in the UK reported to the police (Choi et al., 2018).

Sexual violence now not only affects people in person but can also be perpetrated online. Advances in technology have led the internet to revolutionize the way people meet and interact with each other. A wide range of new profile-matching and location-oriented applications (apps) offer popular tools for facilitating dating and sexual hook-ups (Albury et al., 2017). Dating apps/websites (DAWs) allow people to scrutinize and make quick decisions based solely on the information and photographs another person provides about themselves (New England College, 2020). In recent years, online dating has become an increasingly popular and socially acceptable way to meet significant others (Whitty & Carr, 2006). This growth in online dating has particularly accelerated over the past few years, with almost a third (32%) of adult relationships between 2015 and 2019 starting online (eHarmony and Imperial College Business School, 2015). The estimated prevalence of DAW usage varies between sources—according to Statista, in 2019, there were 180 million users worldwide (Statista, 2020). Further research has estimated that 9.1 million people in Britain reported having ever used an online dating site (Infogram, 2020). As well as growth in popularity, acceptance and accessibility of using DAWs has increased; however, with the ease of use of DAWs comes new concerns, particularly in relation to safety (Gordon, 2020). The use of DAWs has been shown to be associated with risky sex, harassment, and poor mental health (Mccosker et al., 2019).

Individuals who spend a lot of time online may increase their risk of victimization due to their increased accessibility and visibility (Marganski & Melander, 2018). A study of US college students found that frequent use of DAWs was a significant factor in being a victim of sexual violence (Scannell, 2019). DAWs are also unique in the way people can openly provide personal details about themselves; for example, some dating sites allow users to link different

social media accounts to their dating profiles, which may allow for additional personal information or photographs to be shared between users (Albury et al., 2017). Such linkage may increase the risk of victimization because it allows perpetrators to monitor potential victims more closely (Marganski & Melander, 2018). DAWs also allow perpetrators access to potential victims over an extended period of time and provide several opportunities to gain their trust and arrange offline meetings (Mcgrath & Casey, 2002). For most individuals, the goal of online dating will be to progress to offline dating; however, this progression from online to in-person can pose a risk of experiencing dating harm (Pui et al., 2018). Data on dating violence, particularly crimes linked to online dating, are sparse (Choi et al., 2018). However, across the UK, crime data suggest increases in the number of offenses reported relating to online dating, including sexual violence (National Crime Agency, 2016; Thomas, 2020). Across 23 of the 43 police forces in England and Wales, there were 2,029 recorded offenses where a dating app or website was mentioned between 2015 and 2018 (Thomas, 2020). A nationally representative sample from the USA found that 28% of online daters have been contacted by someone through an online dating site or app in a way that made them feel harassed or uncomfortable (Pew Research Center, 2013). Estimates suggest that between 2003 and 2015, 85% of victims of sexual offenses in the UK linked to online dating were female (BBC, 2016), which aligns with non-DAWs related sexual violence statistics (Office for National Statistics, 2021).

Some studies have investigated safety strategies people use when meeting someone in person whom they have been speaking to online to mitigate their risk of victimization. These strategies include sharing the date location with friends, managing own transport to and from the date, and limiting alcohol consumption (Campbell, 2020). A study from the USA found that 61% of women, compared to 26% of men, regularly take steps to avoid being sexually assaulted when meeting someone in person from a DAW, including; maintaining an awareness of their surroundings (73% female; 48% male), having their phone close by (68% female; 39% male), not drinking too much (44% female; 32% male) and trying not to dress in a certain way (29% female; 11% male) (YouGov, 2019).

A US study of adult DAW users found that 53% of respondents told “little white lies” when developing their dating profiles, with 20% of females reporting using an older photograph to appear younger and thinner and 40% of males reporting having lied about some aspect of their jobs in order to appear more successful (Opinion matters, 2011). Some individuals may lie for more sinister reasons; for example, sexual predators may create an anonymous profile and engage with potential victims under false pretenses (Scannell, 2019). The term “Catfishing” was coined due in part to the popular TV documentary *Catfish* (Schulman & Joost, 2010), in which an individual is seen developing an online relationship with someone who might be completely different from the identity that they had portrayed. Catfishing can include a range of manipulations, including financial exploitation, for example, identity fraud or maintaining a relationship with another individual in hopes of receiving money from them (Lauckner et al., 2019; Vandeweerd et al., 2016). These deceptions can have negative effects on the victim’s mental health, including post-traumatic stress disorder, loss of one’s social support system, and social isolation (Whitty & Carr, 2006). To the authors’ knowledge, no research has examined the relationship between Catfishing and dating violence, such as sexual violence, verbal abuse, and physical assaults.

Therefore, this study aims to develop an understanding of adults’ use of DAWs and experiences of dating harm. The study has two key objectives, including exploring:

- Adults’ use of DAWs, including attitudes and motivations for use and experiences of harm.

- Adult experiences of meeting people in person via DAWs, including experiences of dating violence and associated risk and protective factors.

METHODS

Procedure

An online survey was designed to capture respondents' experiences, attitudes, and behaviors related to using DAWs, as well as their experiences of going on dates with someone they met online (including harm). Inclusion criteria were defined as an individual who had used any DAWs in the past two years, was over the age of 18 years, and lived in the UK or Republic of Ireland. Recruitment to the survey was conducted via convenience sampling with a link to the survey posted on social media sites and forums, including Facebook, Instagram, Twitter, and Reddit. An email was sent to staff and students within a public health department at a UK university. A standardized recruitment message was used explaining the purpose of the study, inclusion criteria, and a link to the online survey. This method allowed individuals to be recruited completely anonymously. If an individual chose to participate, they clicked on the link. The link directed them to an online participation information sheet, which was presented to each participant at the beginning of the survey. Online consent was obtained at the beginning of the survey before respondents answered any questions. The survey was hosted by JISC online survey system and was open for eight weeks. Only responses of those who completed the entire survey were recorded and analyzed; responses of those who opted to close the survey before selecting submit were not recorded. Participants were informed prior to taking part that due to the survey being anonymous, once they had submitted their survey, they would be unable to withdraw. Ethical approval for the study was granted by the Liverpool John Moores University Research Ethics Committee (20/PHI/007), and the study adhered to the Declaration of Helsinki.

Sample

Between April and June 2020, 266 respondents completed the survey. However, when inclusion criteria were applied, 49 respondents did not meet the inclusion criteria resulting in a sample of 217 (75.1% female). SPSS reasons for exclusion included not living in the UK or the Republic of Ireland ($n = 20$) and not using a dating app/ website in the past two years ($n = 29$).

Measures

A 22-question survey was designed, which had three main sections: DAWs usage, experiences on dates with someone met through DAWs, and experience of dating violence with someone met through DAW. Demographics: Included age, gender, and country of residence. To avoid missing data, all questions had a "prefer not to say" response option. Respondents could close the survey at any point if they did not wish to continue. Where not all respondents answered a question (i.e., indicated prefer not to say), adjusted sample sizes are presented.

DAWs Use, Attitudes, Motivations, and Experiences of Harms

This section included questions relating to respondents' usage, motivations, and experiences of using DAWs. An initial screening question determined if respondents had used any DAWs in the past two years. Which DAWs respondents used was measured using a pre-set list of options, and respondents were asked to select all that applied (Table 1). Frequency of use was measured using a pre-set list of options (daily, 2–3 times a week, weekly, 2–3 times a month, once a month, less than monthly). Motivations and attitudes to using DAWs were measured using a pre-set list of options, and respondents were asked to select all that applied (Table 1). How respondents use DAWs was measured using a pre-set list of options, and respondents were asked to select all that applied. The set list included seeing whom I match with, sending pictures, receiving pictures, exchanging personal details (i.e., phone number/full name), sharing social media accounts, and a free text "other" option. Experiences using DAWs were measured by asking if another user had ever done any of the following: Sent you harassing, or offensive messages of a non-sexual nature? (e.g., bullying, threatening, or intimidating), sent you harassing or offensive messages of a sexual nature? (e.g., inappropriate or unwarranted sexual comments), sent you unsolicited sexually explicit pictures, tried to pressure you into sending sexually explicit pictures, pressured you into sending sexually explicit pictures, asked you for

TABLE 1. Bivariate Relationships Between Demographics and Usage and Attitudes Towards Dating Apps/Websites

	Total % (n)	Gender				X ²	Age group (years)				X ²		
		Male		Female			18-29		30-39			40+	
		% (n)	% (n)	% (n)	% (n)		% (n)	% (n)	% (n)	% (n)			
DAWs used (past 2 years) ^a		24.9 (54)	75.1 (163)			36.9 (80)	38.2 (83)	24.9 (54)					
Tinder	79.7 (173)	87.0 (47)	77.3 (126)	1.815	87.5 (70)	79.5 (66)	68.5 (37)	7.189*					
Bumble	70.0 (152)	79.6 (43)	66.9 (109)	2.568	66.3 (53)	69.9 (58)	75.9 (41)	1.440					
Hinge	36.9 (80)	33.3 (18)	38.0 (62)	0.210	37.5 (30)	39.8 (33)	31.5 (17)	0.985					
Plenty of Fish	35.5 (77)	48.1 (26)	31.3 (51)	4.327*	22.5 (18)	44.6 (37)	40.7 (22)	9.542**					
Okupid	20.3 (44)	24.1 (13)	19.0 (31)	0.367	21.3 (17)	20.5 (17)	18.5 (10)	0.154					
Match	16.6 (36)	16.7 (9)	16.6 (27)	0.000	8.8 (7)	19.3 (16)	24.1 (13)	6.172*					
Other	29.0 (63)	42.6 (23)	24.5 (40)	5.570*	18.8 (15)	27.7 (23)	46.3 (25)	11.987**					
Average use (past 2 years)													
Daily	47.6 (90)	55.1 (27)	45.0 (63)		35.8 (24)	56.0 (42)	51.1 (24)						
Weekly	45.5 (86)	42.9 (21)	46.4 (65)		53.7 (36)	40.0 (30)	42.6 (20)						
Less than weekly	6.9 (13)	2.0 (1)	8.6 (12)	3.130	10.4 (7)	4.0 (3)	6.4 (3)	6.929					
Motivation for use (past 2 years)													
To go on dates	75.1 (163)	75.9 (41)	74.8 (122)	0.000	71.3 (57)	80.7 (67)	72.2 (39)	2.277					
Short-term casual relationship	27.2 (59)	38.9 (21)	23.3 (38)	4.215*	26.3 (21)	30.1 (25)	24.1 (13)	0.661					
Long-term relationship	76.5 (166)	75.9 (41)	76.7 (125)	0.000	65.0 (52)	84.3 (70)	81.5 (44)	9.466**					
Sexual activity	25.8 (56)	38.9 (21)	21.5 (35)	5.549*	21.3 (17)	31.3 (26)	24.1 (13)	2.272					
Make friends	15.2 (33)	9.3 (5)	17.2 (28)	1.406	21.3 (17)	13.3 (11)	9.3 (5)	3.993					
Chat with new people but never meet up	14.3 (31)	5.6 (3)	17.2 (28)	3.576	26.3 (21)	8.4 (7)	5.6 (3)	15.034***					
To meet new people in person	26.7 (58)	22.2 (12)	28.2 (46)	0.470	30.0 (24)	24.1 (20)	25.9 (14)	0.749					
Attitudes towards dating apps (past 2 years) ^b													
Overall experience has been positive	45.6 (99)	44.4 (24)	46.0 (75)	0.966	55.0 (44)	45.8 (38)	31.5 (17)	0.027					
Good way to meet a new partner	55.8 (121)	50.0 (27)	57.7 (94)	0.409	58.8 (47)	57.8 (48)	48.1 (26)	0.427					
Most people I have spoken are respectful	53.9 (117)	74.1 (40)	47.2 (77)	0.001	40.0 (32)	66.3 (55)	55.6 (30)	0.003					
Are completely safe	12.0 (26)	20.4 (11)	9.2 (15)	0.051	10.0 (8)	15.7 (13)	9.3 (5)	0.418					
Acceptable way to meet a new partner	85.7 (186)	88.9 (48)	84.7 (138)	0.586	87.5 (70)	91.6 (76)	74.1 (40)	0.014					

^aUsers could select multiple; ^bStrongly agree/agree.

* $p > .05$, ** $p > .01$, *** $p > .001$.

financial assistance (e.g., sudden personal crisis), been intentionally dishonest about some aspect of their lives (e.g., job, relationship status, children) and been intentionally dishonest about their appearance (e.g., Catfishing). Response options included Yes, No, Do not know, and Prefer not to say.

Experience of Meeting People in Person Via DAWs, Including Risk and Protective Factors

This section included questions relating to respondents' experiences of going on a date with someone they have met via DAWs. Those who had been on a date were asked how many first dates they had attended with someone they had met through a DAW and how many of those people they met on more than one occasion (i.e., for a second date). Safety precautions utilized before or during a date from a pre-set list (response options included Yes, No, Do not know, and Prefer not to say) included: Tell someone else where I am going, tell someone else whom I am meeting, arrange own transport to and from the date, meet somewhere with other people around, limit or monitor the number of alcoholic drinks consumed and look for more information about the person you are meeting via social media or by other means before going on a date. What is the typical location you would meet for a first date, and what is the typical time you would meet for a first date (Table 2)? Four predefined experiences of going on dates with someone that they met online in the past two years were examined (response options included Yes, No, Do not know, and Prefer not to say), including You felt unsafe, you met someone, who looked different to the person you had been speaking with on a DAW, you felt pressured into kissing someone, and you felt pressured into performing sexual acts.

Lifetime Experiences of Dating Violence After Meeting People in Person Via DAWs

This section included questions relating to lifetime dating violence experienced whilst on a date with someone the participant had met via DAWs and questions on reporting the harms experienced. The questions were adapted from the Crime Survey for England and Wales (Crime Survey for England and Wales, 2016) and included asking the participant: If someone you met via a DAW has ever verbally abused you, physically assaulted you, or made or asked you to have sex or engage in other sexual activities with them in exchange for something (e.g., money, drugs, alcohol, gifts or other items). Four questions explored sexual violence, including if someone you met via a DAW: Indecently exposed themselves to you (i.e., flashing) in a way that caused you fear, alarm or distress; sexually harassed you (someone behaves in a way that makes you feel distressed, intimidated, or offended, and the behavior is of a sexual nature, i.e., sexual comments or jokes, sending unwanted messages with sexual content); touched you in a sexual way (e.g., touching, grabbing, kissing or fondling) when you did not want it; and penetrated your mouth, vagina or anus with their penis, or

TABLE 2. Bivariate Relationships Between Experiences of Dating Harms and Demographics and Other Risk Factors

	At least one harm		Sexual violence		Verbal abuse		Physical assault		Sexual activity for goods	
	%(n)	X ²	%(n)	X ²	%(n)	X ²	%(n)	X ²	%(n)	X ²
All	46.5(101)		33.2(72)		27.2(59)		6.5(14)		8.3(18)	
Gender										
Male	29.6(16)		13.0(7)		18.5(10)		7.4(4)		5.6(3)	
Female	52.1(85)	7.386 **	39.9(65)	12.067 ***	30.6(49)	2.388	6.3(10)	0.000	9.3(15)	0.336
Age group (years)										
18-29	41.3(33)		30.0(24)		20.5(16)		6.4(5)		8.9(7)	
30-39	39.8(33)		26.5(22)		24.4(20)		6.1(5)		7.3(6)	
40+	64.8(35)	9.682 **	48.1(26)	7.489 * ^b	42.6(23)	8.463 * ^b	7.4(4)	0.095	9.3(5)	0.199
Typical time of date										
Before 6pm	47.4(27)		29.8(17)		28.6(16)		10.5(6)		8.9(5)	
pm or later	47.1(73)	0.000	34.8(54)	0.272	27.3(42)	0.000	5.2(8)	1.118	8.4(13)	0.000
Typically monitor alcohol consumption										
Yes	49.7(78)		35.7(56)		31.6(49)		6.4(10)		8.9(14)	
No	41.2(21)	0.801	27.5(14)	0.825	17.6(9)	3.042	8.0(4)	0.004	7.8(4)	0.000
Typically meet in private place										
Yes	47.4(9)		36.8(7)		21.1(4)		11.1(2)		21.1(4)	
No	46.7(91)	0.000	32.8(64)	0.010	28.0(54)	0.142	6.2(12)	0.095	7.2(14)	2.680
Catfished ^a										
Yes	64.9(48)		48.0(36)		41.9(31)		8.2(6)		17.3(13)	
No	39.8(49)	15.394 ***	24.6(34)	10.985 ***	19.0(26)	11.659 ***	5.8(8)	0.146	2.9(4)	11.891 ***

^aNotes. ^aOf those who have been on a date in the past 2 years with someone they met online. NS=not significant.

^bStatistically not significant when controlling for multiple testing (Bonferroni Correction).

* $p > .05$, ** $p > .01$, *** $p > .001$.

an object (including their fingers) (including attempted) when you made it clear that you did not agree or when you were not capable of consent. Respondents could select as many harms that applied, and answers included yes, no, do not know, and prefer not to say. Respondents were then asked if they had ever told anybody else about any of the harms mentioned (response options: Yes/No/Prefer not to say/ I have not experienced any of the harms). Respondents who selected that they had not told anybody were asked the reason why they did not tell anybody about the incident from a preset list where respondents could tick all that apply. The list included private/ embarrassment/ humiliating; too trivial; didn't think anyone would be sympathetic; didn't think anyone would believe me, and didn't have anyone to tell and a free text "other" option. Respondents who did report an incident(s) were asked to whom they had reported the incident(s) from a pre-set list and asked to tick all that apply, including a friend; family member; police; work colleague; teacher/professor; doctor/health care worker; counselor/victim support organization and a free text "other" option.

Data Analyses

All sexual violence questions were combined into one variable to indicate exposure to sexual violence for the purpose of analyses. Data were analyzed with SPSS v.26. Analyses employed chi-square for independence with continuity correction for initial bivariate examination of associations between DAWs usage and demographics (e.g., age and gender). Bivariate relationships between dating violence and age, gender, typical time of date, typically monitoring alcohol consumption whilst on dates, and typically meeting in a private place and experiencing being Catfished were run using the Bonferroni Correction method (original p value divided by the number of tests ran $0.05/5$) to account for running multiple comparisons resulting in an adjusted significance level of 0.01. Multivariate modeling used binary logistic regression (enter method) to examine the independent relationships between dating violence and age, gender, and experience of being Catfished.

RESULTS

Sample Characteristics

Therefore a final sample of 217 respondents completed the survey; the majority (75.1%), were female, aged between 22 and 39 years (75.1%), and currently residing in the United Kingdom (95.4%: Table 1).

DAWs Usage

Tinder (79.7%), Bumble (70.0%), and Hinge (36.9%) were the three most commonly used DAWs by respondents. In bivariate analyses, the use of Tinder and Plenty of Fish was significantly associated with age group, with the highest prevalence amongst those aged 18–29 (87.5%; 30–39, 79.5%; 40+, 68.5%; $p = .027$) and 30–39 years (44.6%; 40+, 40.7%; 18–29, 22.5%; $p = .008$) respectively. There was a significant association between gender and the use of Plenty of Fish, with a higher prevalence amongst males (48.1%; females, 31.3%; $p = .025$).

Of all users who had used DAWs in the past two years, nearly half (47.6%) reported using DAWs on a daily basis, 45.5% weekly, and 6.9% less than weekly.

Motivations for Using DAWs

From a set list of reasons, respondents were asked to indicate the reason(s) they used dating apps. The most common response was to find a long-term relationship (76.5%), followed by going on dates (75.1%). There was a significant association between age and using DAWs to find a long-term relationship, with the lowest prevalence amongst the youngest age group (18–29, 65.0%; 30–39, 84.3%; 40+, 81.5%; $p = .009$); the youngest age group was more likely to report wanting to chat to new people but not meet up (18–29, 26.3%; 30–39, 8.4%; 40+, 5.6%; $p = .001$). There were significant associations between gender and motivations for use, with males significantly more likely than females to report wanting short-term casual relationships (38.9%; females, 23.3%; $p = .040$), and sexual activity (38.9%; females, 21.5%; $p = .018$). From a set list of options, respondents were asked to indicate their activities on DAWs. The majority (94.0%) wanted to see whom they matched with, whilst 59.9% wanted to exchange personal detail (e.g., full name or telephone number). A similar number of people used DAWs to receive (15.2%) or send pictures (14.7%) or share their social media accounts (14.7%).

Attitudes Towards Using DAWs

The majority (85.7%) of respondents strongly agreed/agreed that DAWs are an acceptable way to meet a new partner, with the highest agreement amongst those aged 30–39 years (91.6%; 18–29, 87.5%; 40+, 74.1%; $p = .014$). Over half (55.8%) agreed they were a good way to meet a new partner. There was a significant association between age and those who strongly agreed/agreed their experiences of using DAWs had been positive (18–29, 55.0%; 30–39, 45.8%; 40+, 31.5%; $p = .027$) and that most people they had spoken to are respectful (30–39, 66.3%; 18–29, 40.0%; 40+, 55.6%; $p = .003$). Males were significantly more likely than females to agree that DAWs that most people they had spoken with are respectful (74.1%; females, 47.2%; $p < .001$).

Harms Experienced Whilst Using DAWs

Whilst using a DAW, 60.4% of respondents reported being sent harassing or offensive messages of a sexual nature (e.g., inappropriate or unwarranted sexual comments), whilst 33.6% reported receiving harassing or offensive messages of a non-sexual nature (e.g., bullying, threatening or intimidating). Nearly half (53.9%) thought someone that they talked to had been intentionally dishonest about some aspect of their lives (e.g., their job, relationship status, parental status), whilst 41.9% stated speaking with someone who had been intentionally dishonest about their appearance (i.e., “Catfishing”). Four in ten (43.8%) respondents reported that someone tried to pressure them into sending sexually explicit pictures and/or reported receiving unsolicited sexually explicit pictures (41.0%), whilst 18.0% were actually pressured into sending sexually explicit pictures. Over one in ten (12.9%) reported being asked by someone through a DAW for financial assistance.

Experiences of Meeting People in Person Via DAWs

The majority (91.2%) of respondents reported going on a date with someone they met through DAWs in the past two years. Four in ten (41.4%) respondents reported going on 1–3 dates in

the past two years, 35.5% 4–9 dates, and 23.4% went on more than ten dates. The majority (87.3%) went on at least one second date.

Risk and Protective Factors to Prevent Harm When Meeting People in Person Via DAWs

Respondents were provided with a list of possible safety behaviors and asked to indicate which ones they typically do when meeting someone in person whom they met via DAWs. The vast majority of respondents reported arranging their own transport to and from the date (97.5%) and/or meeting somewhere where other people are around (93.4%). Three-quarters of respondents look for more information about the person via social media or other means before going on a date (76.3%), try to limit or monitor the number of alcoholic drinks they consume (74.7%), tell someone where they are going (73.7%) and/or tell someone whom they are meeting (73.2%). Nearly all (99.5%) respondents utilized at least two of the listed safety behaviors. Most (73.5%) respondents reported meeting someone for the date at 6 pm or later.

Experiences of Dating Violence After Meeting People in Person Via DAWs (Past two Years)

Whilst on a date with someone they met via a DAW in the past two years, 32.3% stated that they felt pressured into kissing the person, 19.2% reported feeling unsafe, and 15.2% felt pressured into performing sexual acts.

Experiences of Dating Violence After Meeting People in Person Via DAWs (Lifetime)

Respondents were asked to identify harms they may have ever experienced whilst on or after a date with someone that they had met through a DAW. Nearly half (46.5%) of the respondents reported experiencing at least one harm, including verbal abuse, physical assault, sexual violence and sexual activity in exchange for goods. There was a significant association between experiencing at least one harm and age and gender, with the highest prevalence amongst females (52.1%; males, 29.6%; $p = .007$), those aged 40+ years (64.8%; 18–29, 41.3%; 30–39, 39.8%; $p = .008$) and “Catfished” (looked different, 64.9%; looked the same, 39.8%; $p < .001$). In logistic regression analysis (Table 3), experiencing at least one harm was significantly associated with female gender (adjusted odds ratio [AOR] 4.0; $p < .001$), being aged 40+ years (AOR 3.1; $p = .006$; reference category, 18–29 years) and being “Catfished” (AOR 3.3; $p < .001$).

One-third (33.2%) of respondents reported experiencing some form of sexual violence, including indecent exposure, sexual harassment, sexual touching, and rape. There were significant associations between age and gender, with a higher prevalence of experiencing some form of sexual violence amongst females (39.9%; males, 13.0%; $p < .001$), those aged 40+ years (48.1%; 18–29, 30.0%; 30–39, 26.5%; $p = .024$) and “Catfished” (looked different, 48.0%; looked the same, 24.6%; $p < .001$). In logistic regression analysis (Table 3), experiencing sexual violence was significantly associated with female gender (AOR 6.9; $p < .001$), being aged 40+ years (AOR 2.9; $p = .013$; reference category, 18–29 years), and being “Catfished” (AOR 2.9; $p = .001$).

Over a quarter (27.2%) of respondents reported verbal abuse, with a higher prevalence amongst the 40+ age group (42.6%; 30–39, 24.4%; 18–29, 20.5%; $p = .015$) and “Catfished”

(looked different, 41.9%; looked the same, 19.0%; $p = .001$). In logistic regression analysis (Table 3) experiencing verbal abuse was significantly associated with female gender (AOR 2.6; $p = .024$) and being aged 30–39 years (AOR 3.2; $p = .007$; reference category, 18–29 years) and being “Catfished” (AOR 2.9; $p = .002$). A small number (6.5%) of respondents reported physical assault.

Nearly one in ten (8.3%) respondents reported being asked to have sex or engage in other sexual activities in exchange for something (e.g., money, drugs, alcohol, gifts, or other items). A higher prevalence of experiencing sexual activity in exchange for goods amongst those who reported being “Catfished” (looked different, 17.3%; looked the same, 2.9%; $p < .001$). In logistic regression analysis (Table 3), experiencing sexual activity in exchange for goods was significantly associated with being “Catfished” (AOR 7.6; $p < .001$).

Reporting of Dating Violence (Lifetime)

Of those who had experienced harm, 61.6% of respondents had told someone about the harm that they had experienced. Of the respondents who reported the harm to someone, the people most commonly told about the incidents were a friend (59.3%), a family member (16.3%), and a work colleague (11.6%). Respondents who did not report the incident to anyone were asked to select from a range of statements why they did not; the most frequent answers were: The incident was private/embarrassment/humiliating (63.6%); too trivial (54.5%); didn’t think anyone would be sympathetic (27.3%); didn’t think anyone would believe me (24.2%); and, didn’t have anyone to tell (21.2%).

TABLE 3. Multivariate* Associations Between Demographics, Dating Behaviors and Dating Harms (n = 217)

	At least one harm			Sexual violence			Verbal abuse			Sexual activity for goods		
	Sig.	AOR	95% CIs	Sig.	AOR	95% CIs	Sig.	AOR	95% CIs	Sig.	AOR	95% CIs
		LL	UL		LL	UL		LL	UL		LL	UL
Age 18–29 (ref.)	0.014			0.020			0.024			0.960		
30–39	0.785	1.10	0.56 2.16	0.980	0.99	0.48 2.07	0.007	3.19	1.37 7.42	0.823	0.86	0.23 3.12
40+	0.006	3.10	1.38 6.95	0.013	2.85	1.25 6.52	0.070	2.09	0.94 4.64	0.785	0.83	0.23 3.11
Sex Female	<0.001	4.04	1.89 8.63	<0.001	6.94	2.70 17.85	0.024	2.61	1.14 5.98	0.337	1.92	0.51 7.30
Catfished in the past 2 years	<0.001	3.33	1.76 6.31	0.001	2.91	1.51 5.60	0.002	2.87	1.48 5.57	<0.001	7.60	2.32 24.93

Notes. AOR, adjusted odds ratio; 95% CIs, 95% confidence intervals; LL, lower limit; UL, upper limit.

DISCUSSION

This study aimed to investigate adults' use of DAW's, including attitudes and motivations for use, and experiences of harm, as well as adult experiences of meeting people in person via DAWs, including experiences of harm and associated risk and protective factors.

In relation to the first aim of this study, adults' use of DAWs is largely consistent with previous research; Tinder was the most commonly used dating application, particularly amongst those aged 18–29 years (Flug, 2016). Respondents' motivations for using DAWs varied by age group and gender, with younger respondents less likely to be looking for a long-term relationship. In comparison, males were more likely to report wanting short-term casual relationships and using DAWs for sexual activity compared to females. This also correlates with previous research, which has found females are more likely to join a DAW seeking friendships and relationships, whereas men were more likely to join seeking sexual partners for casual “hookups” (Newett et al., 2018). The acceptability of using dating apps has increased significantly in recent years, with the vast majority of respondents strongly agreeing/agreeing that dating apps are an acceptable way to meet a new partner and are now, for many, the new dating norm (Rosenfeld et al., 2019). This is in line with other research that has found men are significantly more likely than women to believe dating now using DAWs is better than more conventional forms of dating, such as meeting through friends (33% and 19%, respectively) (Jackson & Yi, 2020).

Finally, to address the study's aim regarding participants' experiences of harms when using DAW'S, the findings indicated that despite DAWs' popularity, they are not without flaws; a significant number of respondents reported that DAWs are not completely safe; these attitudes were especially prevalent amongst females. This is supported by previous research that has found some users, especially younger women, report being the target of rude or harassing behavior while using DAWs (Pews Research Center, 2013). Interestingly findings from this study coincide with this notion as a large proportion of the sample reported being sent harassing messages from another user(s), both of a sexual and of a non-sexual nature, being sent unsolicited pictures or feeling forced into sending sexually explicit pictures of themselves. These negative behaviors are exclusive to online dating, compared with conventional forms of dating. Individuals who take part in these actions online are subject to very few consequences. It seems accepted that the physical distance and anonymity that the online world provides reduce the fear of social ramifications, which might ordinarily keep certain behaviors in check (Thompson, 2016). Steps have been taken to help prevent harassment on dating apps; organizations such as the Online Dating Association in the UK bring a number of DAWs providers together with the aim of taking shared responsibility for the well-being of the sector and its users. The organization places a strong focus on educating consumers and online dating businesses about best practices, including ways to keep users safe from sexual predators (Online Dating Association, 2020). DAWs such as Tinder have now begun to develop more advanced safety features such as “Does This Bother You?” which automatically detects offensive messages in the app's instant messaging service and asks the user whether they'd like to report it, with the aim of raising awareness of harassing behaviors and normalizing reporting such incidents (Gillett, 2020).

When addressing the second study's aim regarding harms experienced when meeting people in person via DAWs, it was apparent through the findings of this study that gender and age played a significant factor in an individual's likeliness of experiencing dating violence, particularly the relationship between being female and experiencing sexual violence. This study

found that dating violence was most common among women, which is supported by previous research on this topic (Home Office, 2015; Powell & Henry, 2019; World Health Organization, 2017). Those in the oldest age group were three times more likely to report experiencing harm; however, this is to be somewhat expected considering the survey asked about the lifetime prevalence of dating violence, and older individuals will have had longer to experience such harm. However, further research could be done to address if this is, in fact, the case or if there is some other reason why older individuals are more vulnerable to experiencing dating violence.

Findings from this study indicated that respondents had been exposed to Catfishing in a number of different ways, ranging from speaking to someone who looked different from the person they thought they were talking to, to speaking to someone who lied about some aspect of their lives or asked for financial assistance (i.e., a family emergency). In 2018, a UK fraud and cybercrime center, Action Fraud, reported that they had received 4,555 reports relating to DAWs fraud, with each of the victims losing an average of £11,000 (Wade, 2019). Victims of this type of crime reported that it had a significant negative impact on their mental health and well-being (Wade, 2019). Some DAWs, such as Tinder, have made steps in trying to prevent Catfishing by introducing a photo verification feature that will allow users to verify images they upload to their profiles (Gillett, 2020). That being said, there has been very little research done on meeting a “Catfish” in person and relating harms associated with this. The findings from this study indicate that Catfishing is significantly linked to experiences of dating violence across a range of different violence types and that more research needs to be conducted to explore this association.

As per the second study aim, participants were asked about protective factors participants may implement before meeting someone for a date; nearly all respondents utilized at least two safety measures. Previous research has found that one of the most significant factors associated with sexual violence is alcohol consumption (Lorenz & Ullman, 2016; World Health Organization, 2017). However, this study found that utilizing safety measures such as limiting alcohol consumption or meeting earlier in the day was not significantly associated with a reduction in dating violence. Previous practice puts most of the onus of safety and prevention of harm on the user, for example, implementing safety measures, reporting harassment, and very little on the DAWs themselves. However, DAWs have begun to acknowledge that they have a responsibility. For instance, Tinder has begun working with Noonlight technology; before meeting someone, users will be able to save information about the person they are meeting and when the date is taking place; if they hit the panic button, emergency services will be alerted with the details, along with accurate location data (BBC, 2020). Free apps such as Bad Date Rescue, USafe, and Safedate have been developed for less extreme situations, for example, checking in after a date to let a friend know you are safe to set up a “fake phone call” to leave a date. However, these apps are still in their infancy, and their effectiveness or practicality has yet to be fully investigated. Further research must be conducted to fully see if they are truly an effective intervention to reduce dating violence.

Limitations and Future Directions

The findings of this research should be considered alongside a number of methodological limitations. The small sample size means analysis may not be representative of all DAW users, and results cannot be generalized to the wider population. Further to this, due to the small sample size and this being an exploratory study, a Bonferroni correction was carried out to allow for doing a number of analyses. Further studies can focus on more specific hypotheses

based on the findings in this article and consequently examine the repeatability of results presented here and any issues that may arise from multiple tests (Perneger, 1998). In addition to this, as the measures used in this study were predominately invalidated, further research on this topic should consider validating a tool in the future; therefore, these findings should be interpreted with caution due to their explorative nature. Future research should consider differences in experiences of using DAWs for different groups. For example, differences in sexual orientation, ethnicity, and income level. Survey data for usage, behaviors, and experiences of using DAWs are derived exclusively from self-report questions, which introduces some level of bias. Self-reporting may also lead to issues in relation to the false recall. However, an attempt to counteract this was made by asking respondents to recall only their past two years of using DAWs. However, research has shown that dating violence, particularly sexual violence, is significantly underreported (Choi et al., 2018). Therefore, results may only offer a cautious estimate of the overall prevalence of dating violence in relation to DAWs. Future research should also attempt to investigate the effectiveness of newer interventions such as safety apps and their prevention of dating violence.

CONCLUSION

Research findings presented here provide valuable insight into DAWs users' usage, behaviors, and experiences. The results highlight associations between gender and age in terms of experiencing dating violence as a result of meeting someone through a DAWs. The study reinforces the importance of continued research into this topic, especially in relation to the topic of Catfishing and experiencing harm. Findings from the study, while preliminary, would suggest that DAWs are associated with novel risk factors for dating violence, not seen in more traditional forms of dating. This emphasizes the timeliness of these findings and illustrates that high levels of dating violence and acceptability of sexual violence are still highly prevalent within the online dating arena, suggesting that it remains a key public health issue and there is still much work to do.

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