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Characteristics and behaviours of young people who meet online contacts face-to-face

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ABSTRACT

The internet provides opportunities for social interactions which first occur in an online environment that can lead to meeting up in real life. However, growing concerns around safety and privacy warrant greater study of this modern-day phenomenon. Using a longitudinal dataset of approximately 4,300 20-year-olds in Ireland, this study finds one-in-three report meeting someone from online. Multiple regression reveals that females are less likely to engage in such behaviour, while the trait of 'openness', spending more time on the internet, being non-heterosexual, using dating apps, and being sexually active at 17 years are positively associated. Early exposure to information and communication technologies, as indicated by mobile phone ownership at 9 years, is also associated with online-to-offline encounters. A range of policy considerations are discussed, including the continued need for education in e-safety and cyber safety awareness from a young age through young adulthood, particularly for groups such as LGBT communities.

Introduction

Motivation

For the majority of 20-year-olds in today's developed societies, the internet has been a prominent feature of daily life as they have grown up. Social media, online gaming, internet-based recreational pursuits, as well as dating apps provide opportunities for social interactions which first occur in an online environment. For some, the development of online acquaintances may lead to meeting up in real life (Smahel et al., 2020; Zhang et al., 2017), with the preponderance of young people experiencing positive online-initiated interactions (Holmes, 2009). However, the use of technology to facilitate meetups has also been associated with a growing trend of virtual and in-person harms such as sexual violence, abuse, stalking, and harassment (Filice et al., 2022; Henry & Powell, 2018; McLean & Griffiths, 2019; Paat & Markham, 2020; Scannell, 2019). It has been suggested that digital technologies afford greater opportunities to perpetrators of sexual and domestic violence to assert their power and control onto others (Henry et al., 2020; Valentine et al., 2023).

Since the meeting of an unknown person in the real-world can carry personal safety risks, it is important to investigate the characteristics and behaviours of young people associated with meeting face-to-face with others for whom the origin was a cyber contact. There is a dearth of academic studies that have used nationally representative or longitudinal data to understand the personal and social factors, as well as previous behaviours, associated with the modern-day phenomenon of

choosing to meet with someone face-to-face where communication was initiated online. The high prevalence of offline meetings, ranging from 16% to over 50% of young people surveyed (Harrison et al., 2022; Mýlek et al., 2020; Newett et al., 2017; Scannell, 2019; Van Den Heuvel et al., 2012), makes it a highly relevant and interesting area of investigation. Moreover, online safety issues and privacy protections have received a considerable amount of attention from parents, advocacy groups, government bodies, and the European Union in recent years (Department of Children and Youth Affairs, 2014; European Commission, 2022; An Garda Síochána- Ireland's National Police and Security, 2022; Government of Ireland, 2019).

Theory and empirical studies

Barbovschi et al. (2012) document several theories posited to explain the practice of contacting strangers online, and the translation of these to meeting such contacts in an offline capacity. Among the theories developed, the 'recreation' and 'compensation' explanatory approaches to internet-based pursuits may be applicable to a study of those who meet contacts first established online. Peter and Valkenburg (2007) propose a 'recreation' hypothesis to understand factors associated with those who search for casual dates on the internet, finding that sexually permissive people and those characterized as high sensation seekers look for casual partners to date online. They suggest that the internet provides an additional outlet for these people to pursue such activities. Empirical research has found support for this theory, where young people with higher sensation seeking scores are most likely to meet online contacts offline (Livingstone & Helsper, 2007; Mýlek et al., 2020; Zhang et al., 2017) and use dating apps (Chan, 2017).

More broadly, frequent internet use, greater frequency of chatting and gaming behaviours, and more time spent online has also been associated with meeting contacts from online (Liau et al., 2005; Mýlek et al., 2020). Mýlek et al. (2021) found that females perceived face-to-face meetups as riskier than males. Examining qualitative evidence from nine European countries, Mascheroni et al. (2014) also finds that females are regarded as more vulnerable in the virtual world to ill-intentioned opportunists. On the other hand, young people who identify as having a non-heterosexual sexual orientation were more likely to regularly use dating apps (Sumter & Vandenbosch, 2019), with boys who identify as gay being found to be more vulnerable to becoming victims of online predators (Wolak et al., 2010).

Alternatively, a 'compensation' theory has been proposed and empirically tested by scholars, which argues that those who are low in social competence and support use the internet as an outlet to compensate for social deficits experienced in an offline world, where the internet may be a 'safer' place for them to form connections with others (Kraut et al., 2002). McKenna et al. (2002) found that participants who were socially anxious and lonely were more likely to feel they could better express themselves with internet contacts than those they know offline, and close relationships formed online eventually became integrated into participant's non-virtual social life. Van Den Heuvel et al. (2012) also found that adolescents with low self-esteem were more likely to meet online contacts in real life, but loneliness in adolescence reduced the probability of meeting online contacts face-to-face. Several studies also do not find support for the social compensation hypotheses, in the contexts of using chat rooms and email (Scealy et al., 2002), and searching for casual dates (Peter & Valkenburg, 2007), while those 'less shy offline' were found to be more likely to meet online friends offline (Livingstone & Helsper, 2007).

The contribution of this research study

The study presented in this paper builds on existing evidence, considering and incorporating already established factors into the research on online meetups, exploiting longitudinal information on previous records of time spent online, personality factors, sexual orientation, and sexual activity, as well as risk appetite and gender. Other unstudied factors, such as number of close friends and

childhood exposure to technology, extend the evidence base of this area. Early exposure to information and communication technologies (ICT), for instance, mobile phone ownership at 9 years old, could influence attitudes or behaviours to technology and its capabilities for communicating with others. This may be associated with later life technology-related behaviours such as meeting online contacts. To the author's knowledge this has hitherto been unexplored in a developing stock of literature in this area, which the current paper presents a unique insight on.

This study also has a slightly different offering to the prevailing literature in that it investigates factors influencing meet ups by young adults at 20 years, while the majority of the literature focuses on adolescents, who are technically still children (below 18 years). Young adults at 20 years are an interesting age to study in the context of the research and policy as they are more likely to be independent of parental influences and environmental constraints (e.g. they may be living away from their familial home), which may also present different opportunities and vulnerabilities. They may be engaging in risk-taking behaviour, exploring their identity, undertaking experimentation and are also subject to peer pressure (Strasburger & Wilson, 2002).

Informed by, and extending on the existing literature, this study specifically attempts to answer the following four research questions:

(1) Are prior recreational activities, such as heavy internet use, use of dating apps, and being sexually active at 17 years, as well as risk taking attitudes at 20 years, associated with a young person's propensity to meet someone from the internet in person at 20 years? (*Recreational hypothesis*)
(2) Is reporting a low number of friends at 17 years associated with meeting online contacts in real life at 20? (*Social compensation hypothesis*)
(3) Is early exposure to personal ICT devices, e.g. mobile phone ownership at 9 years, associated with face-to-face encounters with virtual acquaintances when a young person is 20?
(4) Do the factors associated with meeting people from online in real life differ by gender?

In the light of the personal safety risks associated with meeting strangers from the virtual world (Boyd et al., 2009), such insights are intended to be of use for parents, educators, and those involved in the lives of young people, as well as policymakers responsible for the development of e-safety policies and procedures.

Materials and methods

Study design

Data

Three waves of data from the '98 cohort of the *Growing Up in Ireland* (GUI) longitudinal study are used to inform the research questions presented in this paper. Over a period in 2007–2008, 8,568 nine-year-old children (born in 1998) and their families were interviewed as part of the first wave of GUI, a nationally representative survey which collects a rich array of information on the demographic, socioeconomic, health, and activities of children and their families as the study participant progresses through life. The survey sampling frame was the Irish primary school system (detailed in Murray et al., 2010). The *'98 Cohort* were revisited in 2011–2012 for a second wave when the children were 13 years old, with a follow-up rate of 88% (7,525 participants). A third wave captured 6,216 study participants at 17/18 years in 2015–2016. In 2018–2019, wave four collected information on 5,190 young people at 20 years, representing 61% of the original 9-year-old sample (O'Mahony et al., 2021). Information on the broader household context was also provided by 4,887 associated parents/guardians of the 20-year-olds, the information for which is regarded as remaining relevant due to a high proportion of adult children living in the parental home in Ireland (Bobek et al., 2021; O'Mahony et al., 2021; Waldron, 2021).

Interviews were conducted on a face-to-face basis with an interviewer who visited study participants in their home, with responses recorded using Computer Aided Personal Interview (CAPI). At ages 17 and 20, the young adults completed a main interview, and there was also a self-complete section containing questions that had the potential to be more sensitive, administered using Computer Assisted Self Interview (CASI).

GUI is made available to researchers in the form of secondary data, accessible as anonymized research microdata files upon application and approval from the Central Statistics Office in Ireland. As this paper uses secondary data from GUI, ethical approval for this study is not necessary. Ethical approval for the collection of GUI data was provided by the Research Ethics Committee of Ireland's Health Research Board.

Outcome of interest

The outcome of interest is the dichotomous 'yes' or 'no' response to the question: '*In the last year have you EVER met anyone face-to-face that you first got to know on the internet?*'. The question is contained only in wave 4 of GUI, situated in the self-complete section, where the participant was 20 years old when inquired in 2018–19.

Exposures of interest

Under the recreational approach to understanding factors that may affect whether a young person reported meeting a person in real life with whom they first met in an online capacity, this study examines associations with risk appetite, and previous reported use of dating apps, sexual orientation, and sexual activity. At 20 years, the young person is asked about their willingness to take risks, rated on a scale of 0, 'unwilling to take risks', to 10, 'fully prepared to take risks'. For analysis, risk scores are divided into tertiles, where it may be expected that those in the highest tertile have a greater likelihood of meeting online acquaintances in real life. At 17 years, the use of dating apps is enquired, which is expected to have a positive association on real-life meetups with virtually initiated contacts. Relatedly, sexual orientation and sexual activity have been found to be associated with internet dating (Lever et al., 2010; Peter & Valkenburg, 2007; Rosenfeld et al., 2012; Sumter & Vandenbosch, 2019). Choosing options other than 'straight' on a question on sexual orientation posed at 17 years, as well as reporting sexual intercourse in the previous month at 17 years, are expected to increase the likelihood of reporting online-offline meetings.

Patterns of usage of the internet itself may also fall under the recreation approach. The effect of heavy online use, identified as those reporting being online more than 3 hours on weekdays, is examined, as well as a variable which identifies whether a person has symptoms of moderate-to-severe excessive internet use. Both factors, measured at 17 years, are anticipated to have a positive association with the outcome of interest (Peter et al., 2005).

Under the social compensation hypothesis, reporting a low number of friends in real life could be compensated for by establishing connections from a cyber setting which could lead to meeting in person. The effect of a 'low number of friends', where having two or fewer friends is reported at 17 years, is examined on the outcome studied.

This paper also examines the association between whether a young person had a mobile phone at 9 years old on meeting contacts established from online. Early exposure to ICT may engender greater familiarity with technology-based communications, and thus greater acquaintance with a virtual environment may lead to confidence in establishing online connections which end up as in-person encounters.

Studies in the area of behaviours around technology-based communications have also included measures of core personality traits (Livingstone & Haddon, 2009; Ross et al., 2009; Zhang et al., 2017), and following this, the current study examines the effect of the five aspects of personality – openness to experience, agreeableness, conscientiousness, extraversion, and neuroticism – from the Ten-Item Personality Inventory (TIPI) (Gosling et al., 2003). Scores for each trait are expressed as z-scores so that each trait has a mean of 0 and a standard deviation of 1 (following Nolan et al., 2019).

Finally, a set of control variables are included capturing gender, and socioeconomic factors recorded when the young person was 20. Their principal economic status is categorized as follows: in education; in employment; not in education, employment, or training (NEET). Whether the young person is residing outside the family home is included, which may afford greater independence in terms of whom the young person meets. Whether the young person is living in the capital city of Dublin is examined since there may be more opportunities to meet with strangers compared to in the rest of the country. The young person's household background is also included as a control; whether they are from a one-parent household and the social class categorization of their parent (as non-manual, higher social class).

Modelling approach

To answer the research questions, multiple logistic regression is undertaken to determine which factors are associated with having met someone in real life for whom they were introduced via the internet. Since the outcome variable is dichotomous, logistic regression modelling is employed. The characteristics and behaviours of the young person interest outlined previously in section 2.1.3, concerning the young person, and their household characteristics measured across the surveys undertaken when they were 9, 17 and 20 years, are simultaneously modelled to examine their association with the outcome of interest.

The analytical sample size is 4,295 for which there is complete information on all variables of interest. Descriptive statistics for the complete sample are weighted for representativeness (details of the population weighting procedure can be found in McNamara et al. (2021)). The odds ratio for the modelled variables on outcomes is estimated from logistic regression. Separate models are estimated for the 2,062 males and 2,233 females, to examine gender differentials. All analyses were performed using STATA 15, and the threshold for statistical significance is $p < 0.05$.

Results

Summary statistics

More than one in three of the 20-year-olds in the study report having met someone face-to-face who they had originally encountered online, as demonstrated in Table 1. There is a marked gender differential, where a substantially greater share of males had met online acquaintances than females. Males had a higher risk score at 20 years, and in terms of the 'Big Five' personalities measured at 17 years, females had significantly higher scores on openness, agreeableness, and conscientiousness. The difference in scores across gender was not significant on extraversion, and males scored higher in relation to emotional stability.

Over a fifth of the sample reported spending more than 3 hours on a weekday online at the age of 17, greater among females than males. Females were also more likely to score as having issues with excessive internet use. Less than 1 in 10 reported a low number of friends, and a gender differential did not apply for this variable. More than a tenth stated they used dating apps at 17, the prevalence greater among males. One-in-ten reported a non-heterosexual sexual orientation, the prevalence of this higher for females, while a third reported being sexually active in the previous month. Forty-one per cent of the sample had a mobile phone at the age of 9, and in the gender breakdown mobile phone ownership was higher for females.

Table 1 also shows that of those who meet a person from online in real life, a greater share of these were male, had higher average risk scores, previously used dating apps, and stated they were non-heterosexual and sexually active. More of those who had online-offline in-person encounters had heavier computer use and owned a mobile phone as a child at 9 years old.

Table 1. Summary statistics.

	Total sample (weighted)	Male	Female	Difference (p-value)	Met someone offline	Did not meet	Difference (p-value)
N	4295	2062	2233		1371	2924	
Measured at 20 years (Wave 4)							
OUTCOME							
Met someone from online in real life in previous year	34.9	37.1	27.1	<.001			<0.001
EXPLANTORY VARIABLES							
Gender							
Male (%)	50.4				55.8	44.4	<0.001
Female (%)	49.6				44.2	55.6	
Principal economic status at 20 years							
Education (%)	66.0	70.5	75.7	<0.001	70.6	74.5	0.008
In employment (%)	29.6	26.2	2.5		24.9	22.5	
NEET (%)	4.5	3.3	3.8		4.5	3.1	
Living in address other than parents (%)	34.5	33.6	39.4	<.001	36.5	37.0	.751
Residing in capital city (Dublin) (%)	23.4	25.0	23.7	.344	25.5	23.8	.210
One parent household (%)	21.5	12.7	16.6	<.001	16.6	13.9	.021
Higher social class household – non manual (%)	65.8	80.2	77.4	.024	75.5	80.3	<.001
Risk score (Mean, (SD))	6.62 (1.94)	6.66 (1.91)	6.29 (1.95)	<.001	6.74 (1.85)	6.34 (1.97)	<.001
Measured at 17 years (Wave 3)							
Dating and sexual experiences							
Uses dating apps (%)	11.7	14.2	9.1	<0.001	17.7	8.6	<0.001
Non heterosexual (%)	10.0	8.4	11.8	<0.001	15.2	7.9	<0.001
Sexually active (%)	32.9	30.2	29.2	0.488	34.5	27.4	0.488
Computer use/experiences							
>3 hours online in a weekday (%)	23.4	17.9	23.9	<0.001	25.8	18.7	<0.001
Excessive internet use (%)	6.8	4.8	9.6	<0.001	9.3	6.4	0.001
Low number of friends (%)	9.1	7.4	8.7	.113	9.6	7.4	.013
'Big Five' personality traits (Mean, (SD))							
Openness	5.54 (0.99)	5.47 (1.02)	5.54 (.99)	0.017	5.61 (0.99)	5.46 (1.00)	<0.001
Extraversion	4.73 (1.33)	4.73 (1.36)	4.78 (1.35)	0.257	4.80 (1.37)	4.74 (1.35)	0.130
Agreeableness	4.69 (1.07)	4.52 (1.05)	4.84 (1.06)	<0.001	4.62 (1.06)	4.72 (1.06)	<0.001
Conscientiousness	5.22 (1.16)	5.10 (1.19)	5.31 (1.15)	<0.001	5.12 (1.19)	5.24 (1.17)	0.001
Emotional Stability	4.75 (1.35)	5.12 (1.26)	4.37 (1.32)	<0.001	4.64 (1.36)	4.77 (1.34)	<0.001
Measured at 9 years (Wave 1)							
Early mobile phone ownership (%)	41.1	30.8	37.3	<.001	37.0	32.8	.008

Note: [N]Differences tests – chi-square test on categorical variables, t-tests on continuous variables.

Table 2. Estimation results on meeting someone from online in real life within the previous year, odds ratios.

	Total sample	Male	Female
Measured at 20 years (Wave 4)			
Female	.550***	/	/
(Ref: male)	[0.436–0.635]		
Employment	.963	0.964	0.959
(Ref: In education)	[0.819–1.139]	[0.772–1.202]	[0.746–1.234]
NEET	1.290	1.023	1.657*
(Ref: In education)	[0.906–1.838]	[0.611–1.722]	[1.042–2.637]
Living in address other than parents	1.080	1.017	1.141
	[0.929–1.257]	[0.834–1.258]	[0.917–1.419]
Residing in capital city (Dublin)	1.063	1.117	1.020
	[0.901–1.254]	[0.890–1.401]	[0.798–1.305]
One parent household	1.079	1.058	1.169
	[0.891–1.307]	[0.797–1.404]	[0.899–1.519]
Higher social class household	.801**	0.851	0.771*
	[0.678–0.947]	[0.671–1.080]	[0.608–0.978]
Upper tertile of risk score	1.188*	1.282*	1.070
	[1.027–1.374]	[1.050–1.565]	[0.859–1.333]
Measured at 17 years (Wave 3)			
Uses dating apps	1.869***	1.623***	2.302***
	[1.531–2.281]	[1.256–2.100]	[1.683–3.149]
Non heterosexual	1.873***	2.443***	1.534**
	[1.510–2.324]	[1.743–3.428]	[1.145–2.060]
Sexually active in previous month	1.186*	1.114	1.197
	[1.022–1.377]	[0.902–1.375]	[0.964–1.488]
>3 hours online in a weekday	1.371***	1.426***	1.323**
	[1.165–1.613]	[1.121–1.814]	[1.052–1.664]
Excessive internet use	1.366*	1.457+	1.323+
	[1.065–1.750]	[0.955–2.224]	[0.965–1.814]
Low number of friends	1.186	0.948	1.450*
	[0.928–1.515]	[0.662–1.356]	[1.038–2.024]
Openness	1.140***	1.091+	1.203***
	[1.060–1.227]	[0.989–1.204]	[1.078–1.342]
Extraversion	1.051	1.116*	0.995
	[0.978–1.131]	[1.001–1.237]	[0.897–1.104]
Agreeableness	.969	0.917+	1.024
	[0.907–1.037]	[0.835–1.008]	[0.929–1.128]
Conscientiousness	.973	0.963	0.972
	[0.910–1.041]	[0.877–1.056]	[0.880–1.072]
Emotional Stability	.874***	0.962	0.790***
	[0.812–0.940]	[0.868–1.067]	[0.711–0.877]
Measured at 9 years (Wave 1)			
Early mobile phone ownership	1.154+	1.378**	0.949
	[0.999–1.332]	[1.128–1.685]	[0.769–1.171]
Log likelihood	−2556.0	−1303.4	−1234.6
Pseudo R^2	0.05	0.04	0.05
N	4295	2062	2233

Notes: $^{+}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$ denote statistical significance. 95% Confidence intervals in square brackets.

Multiple regression estimation results

The results from the estimation are presented in Table 2. Young females had half the odds of having a face-to-face encounter with someone they first met in a virtual setting than their male counterparts, holding all else constant. The young person's employment or education situation was not significantly associated with having met someone from online, nor was residing outside the family home or living in the capital city. In terms of household background characteristics, for the whole sample, a higher social class household had a lower estimated odds of meeting someone from online, with the estimated association statistically significant in the female sample, but not for the male-only sample. Being in the top tertile of a risk-taking score at 20 years was associated with approximately a 1.2 greater odds of

meeting someone from online, with the magnitude higher and significant for the male-only sample.

Of the 'big five' personality characteristics measured at 17 years, openness was associated with a higher odds of meeting someone from online, while emotional stability was associated with a reduced likelihood. Heavier computer use at 17 is also associated with reporting having met up with someone online at 20 years: spending more than 3 hours online on a weekday increased the odds for the whole sample, and both the male and female samples. For the whole sample, the indicator of excessive internet use at 17 was associated with a higher estimated odds of meeting someone from online.

Reporting a low number of friends was not statistically significantly associated with online-offline meetings for the whole sample; though, for the female-only group, compared to having three or more friends, reporting two or fewer friends had approximately 1.5 higher odds of meeting online acquaintances in person.

Using dating apps at 17 was associated with approximately twice the odds of meeting someone online at 20, with the magnitude greater for females (odds ratio (OR): 2.3) than for males (OR: 1.6). Reporting being non-heterosexual at 17 was also associated with higher odds of face-to-face meetings with online contacts, and being sexually active was associated with a greater likelihood of such encounters – but this was significant only for the pooled sample.

Early mobile phone ownership, at the age of 9 years, was estimated to be associated with a higher odds of meeting those from online at a marginally statistically significant level of 10%, though the gender split revealed the association was only highly statistically significant for the male sample.

Discussion and conclusions

Explaining the results

The data reveals that meeting people in real life for which contact was initiated online is common-place among young adults in Ireland, comparable to other studies (Barbovschi, 2009), though there is a marked gender difference, with fewer females reporting such encounters than males. This gender differential may reflect greater hesitation by females to meet strangers due to greater safety concerns, related to societal norms and targeting of online safety awareness campaigns at females. However, the gender differential found in this study differs from studies from other jurisdictions which do not find such a distinction (Liau et al., 2005; Mýlek et al., 2020). The result on risk scores accords with the 'recreation hypothesis' and compares with studies which find those characterized by greater sensation seeking as associated with engaging with social apps or meeting internet acquaintances (Chan, 2017; Livingstone & Helsper, 2007; Mýlek et al., 2020; Zhang et al., 2017). By the same token, previous engagement with online dating, sexual activity, and sexual orientation are associated with online-offline in-person contact. The results on time spent on the internet (Barbovschi et al., 2012; Mýlek et al., 2020; Peter et al., 2005) and excessive internet use may also be viewed as supportive of the recreational hypotheses, where those who are more heavily engaged and invested in the digital world have a greater likelihood of pursuing a face-to-face meeting with people they connected with virtually.

The findings of this study in relation to the effect of number of friends on the likelihood of meeting online contacts point to some support for the 'social compensation' hypothesis in the case of females, but not for males. Females who have low numbers of friends in real life may use and benefit from the internet as a platform from which to seek out connections they do not currently enjoy, be that friendships or dates, which culminate in real-life meetings. The reasons for such are an area which warrants further research attention to understand the processes behind such links.

A unique finding of this paper is that early exposure to ICTs via mobile phone ownership for males is associated with meeting online contacts in real life down the line. Boys who possess ICT from a young age may be very familiar with navigating the online world and become competent, at ease,

casual, and relaxed about the translation of online communications to real-world encounters. Again, the reasons for this observation could be subject to greater scholarly consideration.

Policy implications

While vast potential for positive opportunities for young people may be enabled from the translation of meeting acquaintances acquired from the online world to an offline setting, such internet-facilitated activity is of relevance from a public policy perspective in the areas of protecting the safety and privacy of users of internet-based apps and websites (European Commission, 2022; Finkel et al., 2012). Policy can also have a role in providing education and awareness raising of safety risks as children and young people grow up, be that in educational or recreational settings. Youths can be provided with guidance on negotiating risks, being responsible online, as well as resilience building and coping strategies to prepare them for online-offline encounters, and to give parents confidence that children are safe (Holmes, 2009). For example, schools in Ireland have featured online safety as part of social, personal, and health curriculums where students have undertaken information projects and received external talks from policing and online security experts (McCoy et al., 2016). The result on the early mobile phone exposure is also of relevance for parents of younger children, particularly boys. Where younger boys own mobile phones from childhood, this may shape their attitudes to internet-facilitated activities, potentially blurring the lines between the virtual and real world which may require parents' help in distinguishing boundaries.

The results of this study suggest that particular groups may merit special attention, such as young people who report they have a non-heterosexual sexual orientation. Wolak et al. (2010) reports that boys who identify as gay or who are questioning their sexual orientation may be a population particularly susceptible to online victimization by online predators. Holmes (2009) argues that generalized policy responses to internet risks are unlikely to be effective where they are not tailored to more complex needs of more vulnerable, minority populations. Support groups for lesbian, gay, and bisexual (LGB) people may provide a forum for awareness raising, as well as discussing experiences. Given the estimated associations between the use of online dating apps, sexual activity at 17, and meeting online acquaintances at 20, places which offer sexual health, relationship, and counselling services may also provide information and advice.

In terms of apps and websites people use that can lead to an offline meeting, mitigation strategies against risks could be implemented, either enforced by governments or adopted by technology companies, e.g. verification of user's profiles (Zhang et al., 2017); Phan et al. (2021) suggests that app developers could include features such as an immediate help facility, collection of testimonies of personal experiences, and training in emotional and physical self-defence techniques.

Strengths and limitations

This study benefits from a large, national sample of data on young people in Ireland, with multiple waves of information on their socio-economic background, personality characteristics, previous online behaviours, and experiences with ICT in adolescence and childhood. The interviews were conducted in a real-life setting, and thus the sample was not limited to those who engage more with digital technologies as can be the case with online surveys.

A number of limitations of the study are to be recognized, which could be improved upon in future studies. The potential for bias from the self-reported information of participants, and unmeasured confounders arising from aspects of the research design which were beyond the control of the investigator, must be acknowledged. The questionnaire for 20-year-olds does not enquire as to further details on the risk perceptions, nature, frequency, or experiences during face-to-face meetings undertaken with people for whom the participants had originally connected with online. Further research could explore in greater detail the reasons or motives for such encounters, e.g. a date, sharing a special interest or hobby, etc.; whether the participant implemented safety

measures for the event, e.g. meeting in public space, sharing location or communicating with friends during the encounter, travelling independently, etc.; whether the experience was good or bad; and whether a friendship or relationship developed with the person they met with.

Conclusion

Meeting people from online is common practice among young 'digitally native' adults. One in three 20-year-olds surveyed in Ireland in 2018–2019 met a virtual contact face-to-face, though the practice was lower for females. This paper sheds light on a variety of factors which are associated with real-life meetings of online contacts, incorporating, and expanding on existing research in this area. The results are supportive of the application of the recreational and social compensation hypotheses to meeting offline contacts face-to-face. The paper highlights the roles of risk appetite, online engagement, online dating, and sexual-related matters in young people's encounters with online acquaintances. Important distinctions in factors associated with this practice by gender are uncovered, including support for the social compensation theory for females, and early ICT exposure for males. Further research is required to more comprehensively understand the reasons for such differentials, and there is a role for policy to provide awareness and information to ensure the safety of more vulnerable groups, e.g. among non-heterosexual communities.

Notes on contributor

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Data availability statement

The *Growing Up in Ireland* data used for this study are available upon application to the Irish Social Science Data Archive (ISSDA). Available at: https://www.ucd.ie/issda/data/growingupinirelandgui/

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